

LIBRARY OF THE
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

A590

Z75

v.41

Biology



JAN 26 1977

McBride

Digitized by the Internet Archive
in 2015

<https://archive.org/details/zoologicalrecord00zool>

THE
ZOOLOGICAL RECORD

VOLUME THE FORTY-FIRST

BEING

RECORDS OF ZOOLOGICAL LITERATURE

RELATING CHIEFLY TO THE YEAR

1904.

BY D. SHARP, R. LYDEKKER, R. BOWDLER SHARPE, G. A. BOULENGER, W. T.
CALMAN, E. R. SYKES, E. A. SMITH, EUGÈNE SIMON, FILIPPO SILVESTRI,
ALICE L. EMBLETON, F. A. BATHER, W. WOODLAND, AND H. M. WOODCOCK.

EDITED (FOR THE ZOOLOGICAL SOCIETY OF LONDON) BY

DAVID SHARP, M.A., F.R.S., F.Z.S., &C.

Curator in Zoology, University Museum of Zoology, Cambridge.

Explorate solum: sic fit via certior ultrà.

LONDON:

PRINTED FOR THE SOCIETY;

SOLD AT THEIR HOUSE IN HANOVER SQUARE.

M.DCCCCV.

Communications, Papers, and Memoirs intended for this work should be addressed to "THE EDITOR of the Zoological Record, Zoological Society, 3, Hanover Square, London, W. It is earnestly requested that in the case of separately-printed copies of papers so forwarded, the *original pagination* may be indicated.

The Editor thanks those Societies and individuals who have forwarded works and papers for the purposes of the Record, and suggests that Societies publishing Zoological Papers would much facilitate the work of the Recorders by forwarding a separate copy of each Zoological Memoir they publish to the Editor for the use of the Recorder. This is preferable to sending the entire volume, because each paper can go directly to the Recorder it concerns.

CAMBRIDGE:

PRINTED BY JOHN CLAY, M.A.
AT THE UNIVERSITY PRESS.

7590
275
v. 41

Biology

LIBRARY
UNIVERSITY OF CHICAGO
VOLUME 41

PREFACE.

THE preparation of this Volume of the Zoological Record has been facilitated by the liberality of the Council of the Zoological Society, who granted an additional sum for assistance to the Recorders in searching the literature. This work was undertaken in chief part by Mr C. D. SHERBORN; and so far as works only in the libraries at Cambridge are concerned, by Mr S. MATTHEWS of the Philosophical Library there. Thanks to their industry the Recorders have been able to complete the Volume within the usual period.

Dr CALMAN being unable to execute the Arachnida and Myriapoda these groups have been most kindly undertaken by Monsr. SIMON, and Prof. SILVESTRI. As Prof. MINCHIN has been absent for the longer part of the year on a Government mission to Uganda, his Record of Spongiae has been in larger part accomplished by Mr WOODLAND.

The list of abbreviations has been revised by the Librarians of the Royal Society, of the Natural History Museum, of the Science Library Victoria and Albert Museum, of the Zoological Society, of the Linnean Society, of the Radcliffe Library, of the Philosophical Society Cambridge; and our thanks are due to them for their assistance.

D. SHARP.

CAMBRIDGE.

20th November 1905.

1099322

sent to my 40 recorders 20/11/05



CONTENTS.

LIST OF ABBREVIATIONS AND OF TITLES OF JOURNALS.

RECORDS:—

- I. GENERAL SUBJECTS. By D. SHARP, M.A., F.R.S. (Cambridge.)
- II. MAMMALIA. By R. LYDEKKER, F.R.S. (Harpenden.)
- III. AVES. By R. BOWDLER SHARPE, LL.D. (British Museum, Natural History.)
- IV. REPTILIA AND BATRACHIA. By G. A. BOULENGER, F.R.S. (British Museum, Natural History.)
- V. PISCES. By G. A. BOULENGER, F.R.S. (British Museum, Natural History.)
- VI. TUNICATA. By W. T. CALMAN, D.Sc. (London.)
- VII. MOLLUSCA. By E. R. SYKES, B.A., F.L.S. (London), assisted by E. A. SMITH, F.Z.S. (British Museum, Natural History.)
- VIII. BRACHIOPODA. By E. R. SYKES, B.A., F.L.S. (London), assisted by E. A. SMITH, F.Z.S. (British Museum, Natural History.)
- IX. BRYOZOA. By ALICE L. EMBLETON, B.Sc. (Liverpool.)
- X. CRUSTACEA (incl. GIGANTOSTRACA). By W. T. CALMAN, D.Sc. (London.)
- XI. ARACHNIDA. By EUGÈNE SIMON. (Paris.)
- XII. MYRIOPODA AND PROTOTRACHEATA. By FILIPPO SILVESTRI. (Portici.)
- XIII. INSECTA. By D. SHARP, M.A., F.R.S. (Cambridge.)
- XIV. ECHINODERMA. By F. A. BATHER, M.A., etc. (British Museum, Natural History.)
- XV. VERMES (incl. HEMICHORDATA). By ALICE L. EMBLETON, B.Sc. (Liverpool.)
- XVI. COELENTERATA. By ALICE L. EMBLETON, B.Sc. (Liverpool.)
- XVII. SPONGIÆ. By W. WOODLAND. (London.)
- XVIII. PROTOZOA. By H. M. WOODCOCK. (London.)

ALPHABETICAL INDEX OF NEW NAMES OF GENERA AND SUBGENERA.
By the EDITOR.

ALPHABETICAL LIST
OF THE
ABBREVIATIONS
USED IN THE
ZOOLOGICAL RECORD, VOL. XLI, 1904,
FOR THE
TITLES OF THE JOURNALS, TRANSACTIONS, ETC.
THAT CONTAIN ZOOLOGICAL PAPERS;
WITH INDICATIONS OF SOME OF THE PRINCIPAL
LIBRARIES
IN WHICH THE BOOKS ARE CURRENT.

THE primary object of this list is to enable those using the Record to find with ease the full title of a Journal they see quoted in an abbreviated form. The arrangement is therefore a simple alphabetical list of the abbreviations, uncomplicated by syllabic or verbal limitations.

The list has also to serve the Recorders and others as a list of Journals, and for this purpose it is important that it should be fairly complete as regards current periodicals. In order to increase the utility of the list, the abbreviations have been made on a uniform system; but a few exceptions have, in practice, been found necessary. The chief points that have been kept in view in constructing the abbreviations may be briefly stated as follows:—

The words selected as distinctive in each title are reduced in most cases to three or four.

A distinct abbreviation is used for each different word, and the same abbreviation for the same word is used throughout the list.

Accents are omitted. As a rule the first word of the title is represented by an abbreviation, but this rule is departed from in the case of articles and prepositions, and occasionally in the case of adjectives that are useless for distinctive purposes. Thus "Annual Report" becomes "Rep.," and "Occasional Papers" becomes "Pap." Such adjectives as "New" and "Royal" are omitted, except when necessary for distinctive or other purposes.

The consecutive order of the words of the title is maintained in the abbreviation, except in a few cases where the arrangement of the words in the title is very unusual or faulty.

As an example of the form of abbreviation that is aimed at, we may take Bull. Soc. Moscou. The name of the locality is given at greater length than the more frequently used portions of the abbreviation.

After the titles, the place of publication is given, and this is followed by letters indicating some of the principal libraries in which the works may be consulted. The explanation of these letters is as follows:—

- N. = British Museum Natural History: general library.
 Nz. = " " library, zoological department.
 Ng. = " " geological " "
 K. = Science library; Victoria and Albert Museum.
 R. = Royal Society library.
 Z. = Zoological Society library.
 L. = Linnean " "
 C. = Cambridge University library.
 C, p or (C) p = Cambridge Philosophical Society library.
 b, or g, or y, or z, after C, or (C) = Cambridge Balfour, or Sedgwick Museum, or Physiological, or Zoological libraries respectively.
 O. = Radcliffe library, Oxford.
 § is prefixed to titles added since the last list, and to changes of titles when important.

Abeille—L'Abeille: Journal d'entomologie publié par la Société entomologique de France. (Paris, 8vo.) Nz. C.

Abh. Ak. Berlin—Abhandlungen der königlich Preussischen Akademie der Wissenschaften zu Berlin. (Berlin, 4to.) N. K. R. Z. L. C, p. O.

Abh. Bayer. Ak.—Abhandlungen der mathematisch-physikalischen Classe der königlichen Bayerischen Akademie der Wissenschaften. (München, 4to.) N. K. R. Z. L. C, p. O.

Abh. Böhmisch. Ges.—Abhandlungen der mathematisch-naturwissenschaftlichen Classe der k. Böhmisches Gesellschaft. [Called also] Rozprawy trždy matematicko-přirodvěcke královské Ceske společnosti Nauk. (Prag, 4to.) N. K. R. L. C, p.

Abh. deutsch. Seefisch.-Ver.—Abhandlungen des deutschen Seefischerei-Vereins. (Berlin, 4to.) Nz. C.

Abh. geol. Karte Elsass—Abhandlungen zur geologischen Spezial-Karte von Elsass-Lothringen. (Strassburg, 8vo.) Ng.

Abh. geol. Landesanst. Darmstadt—Abhandlungen der grossherzoglich Hessischen geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) Ng.

Abh. geol. Reichsanst.—Abhandlungen der Kaiserlich-Königlichen geologischen Reichsanstalt. (Vienna, 4to.) Ng. R. L. C.

Abh. Ges. Görlitz—Abhandlungen der naturforschenden Gesellschaft zu Görlitz. (Görlitz, 8vo.) N. K. R.

Abh. Ges. Götting.—Abhandlungen der königlichen Gesellschaft der Wissenschaften zu Göttingen. Mathematisch-Physikalische Klasse. Neue Folge. (Göttingen, 4to.) N. R. Z. L. C, p. O.

Abh. Ges. Halle—Abhandlungen der naturforschenden Gesellschaft zu Halle. (Halle, 4to.) N. K. R. Z. L. C. O.

Abh. Ges. Isis—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft 'Isis' in Dresden. (Dresden, 8vo.) N. K. Z. C.

Abh. Ges. Königsb.--[Part of *Schr. Ges. Königsb.*, q.v.]

- Abh. Ges. Nurnberg*—Abhandlungen der naturhistorischen Gesellschaft zu Nürnberg. (Nürnberg, 8vo.) N. K. C.
- Abh. Ges. Wien*—Abhandlungen der K. K. zoologischen-botanischen Gesellschaft in Wien. N. K. R. Z. L. C. O.
- Abh. Hamburg. Anst.*—[Part of *Jahrb. Hamburg. Anst.*, q.v.]
- Abh. Mus. Dresden*—Abhandlungen und Berichte des königlichen zoologischen und anthropologisch-ethnographischen Museums zu Dresden. (Berlin, 4to.) Nz. Z. C.
- Abh. Preuss. geol. Landesanst.*—Abhandlungen der königlich Preussischen geologischen Landesanstalt (Neue Folge). [Formerly *Abh. geol. Spezialkarte von Preussen und den Thüringischen Staaten.*] (Berlin, 8vo.) Ng. K. C.
- Abh. Sachs. Ges.*—Abhandlungen der k. Sächsischen Gesellschaft der Wissenschaften. (Leipzig, 4to.) N. K. R. C, p.
- Abh. Schweiz. pal. Ges.*—Abhandlungen der Schweizerischen paläontologischen Gesellschaft. Mémoires de la Société Paléontologique suisse. (Basel, &c., 4to.) Ng. R. Z. (C) g. O.
- Abh. Senckenb. Ges.*—Abhandlungen herausgegeben von der Senckenbergischen naturforschenden Gesellschaft. (Frankfort a.-M., 4to.) N. K. R. Z. L. C. O.
- Abh. Ver. Bremen*—Abhandlungen herausgegeben vom naturwissenschaftlichen Verein zu Bremen. (Bremen, 8vo.) N. K. R. Z. L. C.
- Abh. Ver. Hamburg*—Abhandlungen aus dem Gebiete der Naturwissenschaften herausgegeben vom naturwissenschaftlichen Verein in Hamburg. (Hamburg, 4to.) N. K. R. Z. L. C, b.
- Abh. Ver. Karlsruhe*—[Vide *Verh. Ver. Karlsruhe.*]
- Abh. Ver. Kassel*—[Issued with *Ber. Ver. Kassel*, q.v.]
- Abh. Ver. Lotos*—Abhandlungen des deutschen naturwissenschaftlich-medicinischen Vereines für Böhmen "Lotos." (Prag, 4to.) N. C.
- Acta Ac. German.*—N. Acta Academiæ Cæsareæ Leopoldino-Carolinæ Germanicæ naturæ curiosorum. [Called also] Verhandlungen der k. Leop.-Carol. deutschen Akademie der Naturforscher. (Halle, 4to.) N. K. R. Z. L. C, p. O.
- Act. Ac. Cordoba*—Actas de la Academia nacional de Ciencias en Córdoba. (Buenos Aires, 4to.) N. R. Z. L.
- Acta Soc. Faun. Fenn.*—Acta Societatis pro Fauna et Flora Fennica. (Helsingfors, 8vo.) N. R. L. C.
- Acta Soc. Lund.*—Acta regiæ Societatis physiographicæ Lundensis. [Published as part of *Acta Univ. Lund.*, q.v.]
- Acta Soc. Sci. Fenn.*—Acta Societatis Scientiarum Fennicæ. (Helsingfors, 4to.) N. K. R. Z. (C) p.
- Acta Soc. Upsal.*—Nova Acta regiæ Societatis Scientiarum Upsaliensis. (Upsala, 4to.) N. K. R. Z. L. C, p.
- Acta Univ. Lund.*—Acta Universitatis Lundensis. [Called also] Lunds Universitets Årsskrift, [and includes] Acta regiæ Societatis physiographicæ Lundensis, [also called] Kongl. fysiografiska Sällskapetets i Lund Handlingar. (Lund, 4to.) N. K. R. L. C, p.
- Actes Mus. Rouen*—Actes du Muséum d'histoire naturelle de Rouen. (Rouen, 8vo.) N. L.

- Act. Soc. Bordeaux*—Actes de la Société Linnéenne de Bordeaux. (Bordeaux, 8vo.) N. Z. C.
- Act. Soc. Chili*—Actes de la Société scientifique du Chili. (Santiago, 4to.) N. R. Z.
- § *Act. Soc. ent. Bohem.*—Acta Societatis entomologicae Bohemiae. [Called also Časopis České Společnosti entomologické.] (Praze, 8vo.)
- Act. Soc. Espan.*—Actas de la Sociedad española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Act. Soc. Helvet.*—Actes de la Société Helvétique des Sciences naturelles. [Called also] Verhandlungen der schweizerischen naturforschenden Gesellschaft. (Basel, &c., 8vo.) N. K. R. L. C. O.
- Afh. Mus. Lund.*—E Museo Lundii. En Samling af Afhandlinger. (Kjobnhavn, 8vo.) N. K. R. Z. L.
- Agric. Gaz. N. S. W.*—The Agricultural Gazette of New South Wales. (Sydney, 8vo.) Nz. R.
- Agric. Ledger*—The Agricultural Ledger. (Calcutta, 8vo.) Nz.
- Allatt. Kozl. Magyar Tars.*—Allattani Közlemények a K. M. Természettudományi Társulat állattani szakosztályának folyóirata. (Budapest, 8vo.) N.
- Allg. Naturf. Zeit.*—Allgemeine Naturforscher Zeitung. (Berlin.)
- Allg. Zeitschr. Ent.*—Allgemeine Zeitschrift für Entomologie. Organ der "Allgemeinen entomologischen Gesellschaft." (Neudamm, 8vo.) Nz. Z.
- Amer. Geol.*—The American Geologist, a Monthly Journal of Geology and allied Sciences. (Minneapolis, 8vo.) Ng. (C) g. K. O.
- Amer. J. Anat.*—The American Journal of Anatomy. (Baltimore, 8vo.) (C) b.
- Amer. J. Physiol.*—The American Journal of Physiology. (Boston, 8vo.) N. K. R. (C) y. O.
- Amer. J. Sci.*—The American Journal of Science. (New Haven, 8vo.) N. K. R. Z. C, p. O.
- Amer. Micr. J.*—The American Monthly Microscopical Journal. (Washington, 8vo.) N. O.
- Amer. Mus. J.* The American Museum Journal. (New York, 8vo.) N. Z.
- Amer. Natural.*—The American Naturalist. (Philadelphia, 8vo.) N. K. Z. L. C, b. O.
- An. Ac. Habana*—Anales de la real Academia de ciencias medicas, fisicas y naturales de la Habana. (Habana, 8vo.) N. R.
- An. Ac. Romane*—Analele Academiei Romane. Bucuresci (4to.) N.
- Anat. Anz.*—Anatomischer Anzeiger. Centralblatt für die gesamte wissenschaftliche Anatomie. Amtliches Organ der anatomischen Gesellschaft. (Jena, 8vo.) Nz. K. Z. (C) b. O.
- Anat. Hefte. Arb.*—Anatomische Hefte. Referate und Beiträge zur Anatomie und Entwicklungsgeschichte. Erste Abteilung. Arbeiten aus Anatomischen Instituten. (Wiesbaden, 8vo.) K. C, b. O.
- Anat. Hefte. Ergebn.*—Anatomische Hefte. . . . Zweite Abteilung. Ergebnisse der Anatomie und Entwicklungsgeschichte. (Wiesbaden, 8vo.) K. C, b. O.

- An. cient. Paraguay*.—Anales científicos Paraguayas. (Asuncion.)
- Anh. Abh. Ak. Berlin*.—Anhang zu den Abhandlungen der K. preuss. Akademie der Wissenschaften zu Berlin. [Issued with *Abh. Ak. Berlin*. q.v.] (Berlin, 4to.)
- An. Mus. Buenos Aires*.—Anales del Museo nacional de Buenos Aires. (Buenos Aires, 4to.) N. Ng. K. R. Z. L. O.
- An. Mus. Chile*.—Anales del Museo Nacional de Chile. Publicados por orden del Gobierno de Chile. Primera Seccion. Zoología. (Santiago, 4to.) Z.
- An. Mus. La Plata*.—Anales del Museo de La Plata. (Buenos Aires, &c., 4to.) Nz. Ng. R. Z. C. O.
- An. Mus. Mexico*.—Anales del Museo nacional de México. Segunda época. (México, 4to.) N.
- An. Mus. Montevideo*.—Anales del Museo nacional de Montevideo. (Montevideo, 8vo.) N. L. (C) p.
- An. Mus. Salvador*.—Anales del Museo nacional organo oficial del Instituto del mismo nombre. (San Salvador, 8vo.) N. Z.
- Ann. Brit. Geol.*.—Annals of British Geology. (London, 8vo.) Ng. K. O.
- Ann. Carnegie Mus.*.—Annals of the Carnegie Museum. (Pittsburgh, 8vo.) N. K. Z. O.
- Année. biol.*.—L'année biologique. Comptes-rendus annuels des travaux de Biologie générale. (Paris, 8vo.) N. K. Z. L. C, b. O.
- Année. Psychol.*.—L'Année psychologique. (Paris, 8vo.) K. C. O.
- Ann. Fac. Marseille*.—Annales de la Faculté des Sciences de Marseille, publiées sous les auspices de la municipalité. (Marseille & Paris, 4to.) N. R. (C) p.
- Ann. geol. Balkan.*.—Annales géologiques de la péninsule Balkanique. (Belgrade, 8vo.) Ng.
- Ann. Geol. Pal.*.—Annales de Géologie et de Paléontologie, publiées sous la direction du Marquis Antoine de Gregorio. (Palermo, 4to.) Ng. K. (C) g.
- Ann. Hebert*.—Annales Hébert. Annales de stratigraphie et de paléontologie du laboratoire de géologie de la faculté des Sciences de Paris. (Paris, 8vo.) Ng.
- Ann. Hofmus. Wien*.—Annalen des k. k. naturhistorischen Hofmuseums. (Wien, 8vo.) N. K. R. Z. L. (C) p. O.
- Ann. Inst. Jamaica*.—Annals of the Institute of Jamaica. (Kingston, 4to.) N. R. L. C.
- Ann. Inst. Pasteur*.—Annales del' Institut Pasteur. (Paris, 8vo.) Nb. K. R. C, path. O.
- Ann. Microgr.*.—Annales de Micrographie, spécialement consacrées à la Bactériologie aux Protophytes et aux Protozoaires. (Paris, 8vo.) N. O.
- Ann. Mus. Belgique*.—Annales du Musée royal d'histoire naturelle de Belgique. (Bruxelles, 4to.) K. R. Z. C. O.
- Ann. Mus. Congo*.—État indépendant du Congo. Annales du Musée du Congo, publiées par ordre du Secrétaire d'état. Série II. Zoologie. (Bruxelles, 4to.) Nz. K. R. Z. L. C.
- Ann. Mus. Genova*.—Annali del Museo civico di Storia Naturale di Genova. (Genova, 8vo.) Nz. K. Z. L. C, p. O.

- Ann. Mus. Hungar.*—Annales Musei nationalis Hungarici. (Buda-Pest, 8vo.) N. Z. C.
- Ann. Mus. Marseille*—Annales du Musée d'histoire naturelle de Marseille, Zoologie. (Marseille, 4to.) N. K. R. Z. L. C. O.
- Ann. Nat. Hist.*—Annals and Magazine of Natural History, including Zoology, Botany, and Geology. (London, 8vo.) N. Nz. K. Ng. R. Z. L. C, p. O.
- Ann. Naturphilos.*—Annalen der Naturphilosophie, herausgegeben von Wilhelm Ostwald. (Leipzig, 8vo.) K. C.
- Ann. N. York Ac.*—Annals of the New York Academy of Sciences. Late Lyceum of Natural History. (New York, 8vo.) N. K. R. Z. L. C, p.
- Annot. zool. Japon.*—Annotationes zoologicæ japonenses, auspiciis societatis zoologicæ tokyonensis. (Tokyo, 8vo.) Nz. K. R. Z. L. C, b.
- Ann. Queensland Mus.*—Annals of the Queensland Museum. (Brisbane, 8vo.) N. Z. L. (C) p.
- Ann. S. African Mus.*—Annals of the South African Museum. (Cape Town, 8vo.) N. Z. (C) p.
- Ann. Sci. nat.*—Annales des Sciences naturelles. Zoologie et Paléontologie. Huitième série. (Paris, 8vo.) Nz. K. R. Z. L. C, p. O.
- Ann. Sci. nat. Porto*—Annaes de Sciencias naturaes publicados por Augusto Nobre. (Porto, 8vo.) N. R.
- Ann. Scott. Nat. Hist.*—The Annals of Scottish Natural History: a quarterly magazine, with which is incorporated "The Scottish Naturalist." (Edinburgh & London, 8vo.) N. Z. L. C.
- Ann. Scuol. Agric. Portici*—Annali della R. Scuola superiore di Agricoltura in Portici. 2ª Serie. (Napoli.) C.
- Ann. Soc. Agric. Lyon*—Annales de la Société d'Agriculture, Histoire naturelle et Arts utiles de Lyon. Septième série. (Lyons & Paris, 8vo.) N. R. L.
- Ann. Soc. Belge Micr.*—Annales de la Société Belge de Microscopie. (Bruxelles, 8vo.) N. (C) p.
- Ann. Soc. Bruxelles*—Annales de la Société Scientifique de Bruxelles. (Bruxelles, 8vo.) N.
- Ann. Soc. Charente*—Academie de la Rochelle. Annales de la Société des Sciences naturelles de la Charente inférieure. (La Rochelle, 8vo.) N.
- Ann. Soc. ent. Belgique*—Annales de la Société entomologique de Belgique. [Called also Comptes-rendus.] (Bruxelles, 8vo.) Nz. Z. L. C. O.
- Ann. Soc. ent. France*—Annales de la Société entomologique de France. (Paris, 8vo.) Nz. K. R. Z. L. C.
- Ann. Soc. geol. Belgique*—Annales de la Société géologique de Belgique. [Consists of Bulletin and Mémoires.] (Liège, 8vo.) Ng. K. R. (C) p.
- Ann. Soc. geol. Nord*—Annales de la Société géologique du Nord. (Lille, 8vo.) Ng.
- Ann. Soc. Linn. Lyon*—Annales de la Société Linnéenne de Lyon. Nouvelle série. (Lyon, 8vo.) N. R. Z. L. C. O.

- Ann. Soc. malac. Belgique*—Annales de la Société royale malacologique de Belgique. [Consists of Mémoires and Bulletin, qq.v.] (Bruxelles, 8vo.) Nz. R. Z. L.
- Annuaire Mus. St. Petersb.*—Annuaire du Musée zoologique de l'Académie impériale de St. Pétersbourg. [Called also] Ezheghodnik zoologicheskagho muzeya imperatorskoï akademii nauk. (St. Pétersbourg, 8vo.) N. Nz. R. Z. L. C.
- Annuaire. Ac. Porto*—Annuario da Academia polytechnica do Porto. (Porto, 8vo.) N.
- Annuaire Mus. Univ. Napoli*—Annuario del Museo zoologico della R. Università di Napoli. (Nuova Serie.) (Napoli, 8vo.)
- Ann. Univ. Jassy*—Annales scientifiques de l'Université de Jassy. (Jassy, 8vo.) K. R. Z. C, p.
- Ann. Univ. Kharkow*—Annales de l'Université de Kharkow [called also Zapiski imperatorskagho Khakovskagho Universiteta]. (Kharkow, 8vo.) (C) p.
- Ann. Univ. Lyon*—Annales de l'Université de Lyon. Nouvelle série. I. Sciences, Médecine. (Paris, 8vo.) N. R. C, p.
- Ann. Univ. Toscane*—Annali delle Università Toscane. (Pisa, 4to.) N.
- An. Soc. Argent.*—Anales de la Sociedad científica Argentina. (Buenos Aires, 8vo.) N.
- An. Soc. Espan.*—Anales de la Sociedad Española de historia natural. (Madrid, 8vo.) N. R. Z. C.
- Antanan. Ann.*—Antananarivo Annual and Madagascar Magazine. (Antananarivo, 8vo.) N.
- An. Univ. Chile*—Anales de la Universidad de Chile. (Santiago, 8vo.) N. C.
- Anz. Ak. Wiss.*—Anzeiger der k. Akademie der Wissenschaften. Mathematisch-naturwissenschaftliche Classe. (Wien, 8vo.) N. R. L. Z. C.
- Appalachia*—Appalachia: the Journal of the Appalachian Mountain Club. (Boston, 8vo.) N.
- Aquila*—Aquila a Magyar madártani Központ folyóirata. (Budapest, 4to.) Nz. Z.
- § *Arb. Biol. Abt. Land.-Forstwirtsch.*—Arbeiten aus der biologischen Abteilung für Land- und Forstwirtschaft am Kaiserlichen Gesundheitsamte. (Berlin, 8vo.) N. K.
- Arb. Inst. Wien*—Arbeiten aus dem zoologischen Institut der Universität Wien und der Zoologischen Station in Triest. (Wien, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arb. Inst. Wurzburg*—Arbeiten aus dem zoologisch-zootomischen Institut in Würzburg. (Wiesbaden, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arb. Lab. Warsaw*—[Vide *Rabot. Lab. Warsaw*.]
- Arb. Ver. Riga*—Arbeiten des Naturforscher-Vereins zu Riga. Neue Folge. (Riga, 8vo.) N.
- Arch. Anat.*—Archiv für Anatomie und Entwicklungsgeschichte. Anatomische Abtheilung des Archives für Anatomie und Physiologie [Waldeyer.]. (Leipzig, 8vo.) K. R. Z. C, p, y. O.
- Arch. anat. micr.*—Archives d'anatomie microscopique. (Paris, 8vo.) N. (C) b. O.

- Arch. Anthrop.*—Archiv für Anthropologie. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen. [Includes *CB. Ges. Anthrop.*] (Brunswick, 4to.) R. C. O.
- Arch. Anthrop. Geol. Schleswig.*—Archiv für Anthropologie und Geologie Schleswig-Holsteins und der benachbarten Gebiete. (Kiel, Leipzig, 8vo.) N. K.
- Arch. Biol.*—Archives de Biologie. (Gand & Paris, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arch. Dorpat. Ges.*—Archiv für die Naturkunde Liv-, Ehst- und Kurlands. Herausgegeben von der Dorpater Naturforscher-Gesellschaft. Zweite Serie. Biologische Naturkunde. (Dorpat, 8vo.) K. N. Z.
- Arch. Entwickelm.*—Archiv für Entwicklungsmechanik der Organismen. (Leipzig, 8vo.) K. Z. L. (C) b. O.
- Arch. fisiol.*—Archivio di fisiologia. (Firenze, 8vo.) (C) y. R. O.
- Arch. ges. Physiol.*—Archiv für die gesammte Physiologie des Menschen und der Thiere. [Pflüger.] (Bonn, 8vo.) K. R. C, p, y. O.
- § *Arch. Hydrobiol.*—Archiv für Hydrobiologie und Planktonkunde. (Neue Folge d. Forschungsberichte a. d. Biol. Station z. Plön.) Stuttgart, 8vo.) Nz. K. Z. C, b. O.
- § *Arch. int. Physiol.*—Archives internationales de Physiologie. (Liège & Paris, 8vo.) (C) y.
- Arch. ital. anat.*—Archivio italiano di anatomia e di embriologia. (Firenze.)
- Arch. ital. Biol.*—Archives italiennes de Biologie. Revues, résumés, reproductions des travaux scientifiques italiens. (Turin, 8vo.) N. C, y. O.
- Arch. Landesdf. Bohmen*—Archiv für naturwissenschaftliche Landesdurchforschung von Böhmen. (Prag, 8vo.) N. Z. C.
- Arch. mikr. Anat.*—Archiv für mikroskopische Anatomie. (Bonn, 8vo.) Nz. K. R. Z. L. C, p, y. O.
- Arch. miss. Sci.*—Nouvelles archives des missions scientifiques et littéraires, choix de rapports et instructions, &c. (Paris, 8vo.) N.
- Arch. Mus. Lyon*—Archives du Muséum d'histoire naturelle de Lyon. (Lyon, 4to.) N. R. Z. C. O.
- Arch. Mus. Paris*—Nouvelles Archives du Muséum d'histoire naturelle. Troisième série. (Paris, 4to.) N. R. Z. L. C, p. O.
- § *Arch. Mus. Rio Jan.*—Archivos do Museu Nacional do Rio de Janeiro [lately *Revist. Mus. Rio Jan.*]. (Rio de Janeiro, 4to.) N. R. L. (C) p. O.
- Arch. Mus. Teyler*—Archives du Musée Teyler. (Harlem, 4to.) N. K. R. C, p, g. O.
- Arch. Naturg.*—Archiv für Naturgeschichte. (Berlin, 8vo.) Nz. K. R. Z. L. C, p. O.
- Arch. Naturk. Liv.-Ehstkurland*—[Vide *Arch. Dorpat Ges.*]
- Arch. Naturv. Christian.*—Archiv for Mathematik og Naturvidenskab. (Christiania, 8vo.) N. R. Z. C.
- Arch. Neerland.*—Archives Néerlandaises des Sciences exactes et naturelles, publiées par la Société Hollandaise des Sciences à Harlem. (Harlem, 8vo.) N. K. R. Z. L. C. O.

- Arch. parasit.*—Archives de parasitologie. (Paris, 8vo.) N. Z. (C) b. O.
- Arch. Physiol.*—Archiv für Physiologie. Physiologische Abtheilung des Archives für Anatomie und Physiologie. [Engelmann.] (Leipzig, 8vo.) K. R. Z. C, p, y. O.
- Arch. polon.*—Archives polonaises des sciences biologiques et médicales. [Called also Polnisches Archiv für biologische und medizinische Wissenschaften.] (Lemberg, 8vo.) N.
- Arch. Protistenk.*—Archiv für Protisten-Kunde. (Jena, 8vo.) N. K. Z. (C) b. O.
- Arch. Rassen*—Archiv für Rassen- und Gesellschafts-Biologie, einschliesslich Rassen- und Gesellschafts-Hygiene. (Berlin, 8vo.) (C) b.
- Arch. Sci. biol.*—Archives des Sciences biologiques. Publiées par l'Institut Impérial de Médecine expérimentale à St. Pétersbourg. (St. Pétersbourg, 4to.) O.
- Arch. Sci. Nat.*—Bibliothèque universelle. Archives des Sciences physiques et naturelles. Quatrième période. [Vide *C.R. Soc. Helvet.*] (Genève, 8vo.) N. K. R. C.
- Arch. Ver. Mecklenb.*—Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg. (Güstrow, 8vo.) N. L.
- Arch. Zeeuwsch. Genoots.*—Archief. Vroegere en latere Mededeelingen voornamelijk in betrekking tot Zeeland, uitgeven door het Zeeuwsch Genootschap der Wetenschappen. (Middelburg, 8vo.) N.
- Arch. Zool. exp.*—Archives de Zoologie expérimentale et générale. (Paris, 8vo.) Nz. K. R. Z. L. C, b. O.
- Arch. zool. exp. Notes*—Archives de Zoologie expérimentale et générale. Notes et Revue. (Paris, 8vo.) Nz. K. R. Z. L. C. O.
- Arch. zool. ital.*—Archivio zoologico pubblicato sotto gli auspicii della unione zoologica italiana. (Napoli, 8vo.) Nz. Z. O.
- Arkiv Zool.*—Arkiv för Zoologi. Utgifvet af K. Svenska Vetenskaps-akademien. (Uppsala and Stockholm, 8vo.) N. K. R. Z. L. C, p.
- Atti Acc. Acireale*—Atti e rendiconti dell' Accademia di scienze, lettere ed arti dei zelanti e PP. dello studio di Acireale. Memorie della classe di Scienze. 3 serie. Classe scienze. (Acireale, 8vo.) N. R. (C) p.
- Atti Acc. Gioen.*—Atti dell' Accademia Gioenia di Scienze naturali in Catania. Serie quarta. (Catania, 4to.) N. R. C.
- Atti Acc. Lincei*—Atti della R. Accademia dei Lincei. [Consists of Memorie and Rendiconti, qq.v.] N. K. R. Z. L. C, p. O.
- Atti Acc. Napoli*—Società Reale di Napoli. Atti della R. Accademia delle Scienze fisiche e matematiche. Serie seconda. (Napoli, 4to.) N. R. L. C, p. O.
- Atti Acc. Padova*—Atti e Memorie della R. Accademia di scienze lettere ed arti in Padova. Nuova serie. (Padova, 8vo.) N.
- Atti Acc. Palermo*—Atti della Reale Accademia di Scienze, Lettere e Belle Arti di Palermo. (Palermo, 4to.) N. K.
- Atti Acc. Pontan.*—Atti della Accademia Pontaniana. (Napoli, 4to.) N. R.
- Atti Acc. Pont. Lincei*—Atti dell' Accademia Pontificia de' nuovi Lincei. (Roma, 4to.) N. K. R.

- Atti Acc. Torino*—Atti della R. Accademia delle Scienze di Torino. (Torino, 8vo.) N. K. R. Z. L. C, p.
- Atti Acc. Torino Sci.*—Atti della R. Accademia delle Scienze di Torino. Classe di Scienze fisiche e Matematiche. [Selection from preceding.] (Torino, 8vo.) N. R.
- Atti Ist. Napoli*—Atti del Reale Istituto d'incoraggiamento alle Scienze naturali economiche e tecnologiche di Napoli. Quinta serie. (Napoli, 4to.) N. K.
- Atti Ist. Veneto*—Atti del Reale Istituto Veneto di Scienze Lettere ed Arti. Serie vii. (Venezia, 8vo.) N. K. R. L.
- Atti Mus. Milano*—Atti della Società italiana di Scienze naturali e del Museo civico di storia naturale in Milano. (Milano, 8vo.) N. K. R. Z. C.
- Atti Mus. Trieste*—Atti del Museo civico di Storia naturale di Trieste. (Trieste, 8vo.) N. R.
- Atti Soc. Ital.*—[Vide *Atti Mus. Milano*.]
- Atti Soc. Ligustica*—Atti della Società Ligustica di Scienze naturali e geografiche. (Genova, 8vo.) N. R.
- Atti Soc. Malaria*—Atti della Società per gli studi della malaria. (Roma.)
- Atti Soc. Modena*—Atti della Società dei Naturalisti di Modena. (Modena, 8vo.) N. Z. C.
- Atti Soc. Toscana*—Atti della Società Toscana di Scienze naturali residente in Pisa. [Consists of two separate works, *Memorie* and *Processi verbali*.] (Pisa, 8vo.) N. R.
- Atti Soc. Veneto-Trent.*—Atti della Società Veneto-Trentina di Scienze naturali residente in Padova. (Padova, 8vo.) N. Z.
- Atti Univ. Genova*—Atti della R. Università di Genova. (Genova, 8vo.) N.
- Auk*—The Auk: a Quarterly Journal of Ornithology. (New York, 8vo.) Nz. Z.
- Avicula*—Avicula, Giornale ornitologico italiano. (Siena, 8vo.) Nz. Z.
- Avicult. Mag.*—The Avicultural Magazine, being the journal of the Avicultural Society for the study of foreign and British birds. (Brighton, 8vo.) Nz. Z. C.
- Beiheft Hamburg Anst.*—[Vide *Mt. Mus. Hamburg*.]
- Beitr. Chem. Physiol.*—Beiträge zur chemischen Physiologie und Pathologie. Zeitschrift für die gesamte Biochemie. (Braunschweig, 8vo.) (C) y. O.
- Beitr. Geol. Braunschweig*—Beiträge zur Geologie und Paläontologie des Herzogthums Braunschweig und der angrenzenden Landestheile, herausgegeben im Auftrage des Herzoglichen Staats-Ministeriums von Herzoglicher Cammer, Direction der Bergwerke. (Braunschweig, 8vo.) Ng.
- Beitr. geol. Karte Schweiz*—Beiträge zur geologischen Karte der Schweiz. (Bern, 4to.) Ng. C.
- Beitr. Naturk. Preuss.*—Beiträge zur Naturkunde Preussens, herausgegeben von der Physikalisch-Oekonomischen Gesellschaft zu Königsberg. (Königsberg, 4to.) Ng. R. L. O.
- Beitr. Pal. Oesterr.-Ung.*—Beiträge zur Paläontologie Österreich-Ungarns und des Orients. (Wien, 4to.) Ng. R. O.

- Ber. Annaberg Ver.*—Bericht über den Annaberg-Buchholzer Verein für Naturkunde. (Annaberg, 8vo.) N.
- Ber. Comm. ocean. Forsch.*—[Extracts from *Denk. Ak. Wien.*]
- Ber. deutsch. ornith. Ges.*—Allgemeine deutsche ornithologische Gesellschaft zu Berlin. Bericht über die . . . Jahresversammlung. [Forms part of *J. Ornithol.*, q.v.]
- Bergens Mus. Aarbog*—Afhandlinger og Aarsberetning udgivne af Bergens Museum. [Consists of Afhandlinger and Aarsberetning.] (Bergen, 8vo.) N. R. Z. L. (C) b, p. O.
- Bergens Mus. Meeresf.*—Bergen's Museum. Meeres fauna von Bergen. (Bergen, 8vo.) N. R. L.
- Ber. Ges. Bamberg*—Bericht der naturforschenden Gesellschaft in Bamberg. (Bamberg, 8vo.) N.
- Ber. Ges. Chemnitz*—Bericht der naturwissenschaftlichen Gesellschaft zu Chemnitz. (Chemnitz, 8vo.) N.
- Ber. Ges. Freiburg*—Berichte der naturforschenden Gesellschaft zu Freiburg, i. B. (Freiburg, i. B., 8vo.) N. K. R. Z. L. C. O.
- Ber. Ges. Halle*—Bericht über die Sitzungen der naturforschenden Gesellschaft zu Halle. (Halle, 8vo.) N. R. Z. L. C. O.
- Berlin. ent. Zeitschr.*—Berliner entomologische Zeitschrift, herausgegeben von dem entomologischen Verein in Berlin. (Berlin, 8vo.) Nz. Z. L. C. O.
- Ber. Mus. Dresden*—[Vide *Abh. Mus. Dresden.*]
- Ber. naturf. Ges. Basel.*—Thätigkeitsbericht der naturforschenden Gesellschaft Baselland. (Liestal, 8vo.) N.
- Ber. Nordoberfrank. Ver.*—Bericht des Nordoberfränkischen Vereins für Natur- Geschichts- und Landeskunde in Hof. (Hof, 8vo.) N.
- Ber. Oberhess. Ges.*—Bericht der Oberhessischen Gesellschaft für Natur- und Heilkunde. (Giessen, 8vo.) N. K. L. (C) p.
- Ber. Oberrhein. geol. Ver.*—Bericht über die Versammlungen der Oberrheinischen geologischen Vereins. (Stuttgart, 8vo.) Ng.
- Ber. Offenb. Ver.*—Bericht über die Thätigkeit des Offenbacher Vereins für Naturkunde. (Offenbach-a.-M., 8vo.) N. K. L.
- Ber. Sachsisch. Ges.*—Berichte über die Verhandlungen der k. sächsischen Gesellschaft der Wissenschaften zu Leipzig. Mathematisch-physische Classe. (Leipzig, 8vo.) N. K. R. C, p. O.
- Ber. Senckenberg. Ges.*—Bericht über die Senckenbergische naturforschende Gesellschaft in Frankfurt-am-Main. (Frankfurt, 8vo.) N. R. Z. L. C. O.
- Ber. St. Gall. Ges.*—[Vide *Jahrb. St. Gall. Ges.*]
- Ber. Ver. Augsburg*—Bericht des naturwissenschaftlichen Vereins für Schwaben und Neuburg a. V., früher naturhistorischen Vereins in Augsburg. (Augsburg, 8vo.) N.
- Ber. Ver. Innsbruck*—Berichte des naturwissenschaftlich-medizinischen Vereines in Innsbruck. (Innsbruck, 8vo.) N. R. C. O.
- Ber. Ver. Kassel*—Bericht des Vereins für Naturkunde zu Kassel. (Kassel, 8vo.) N.

- Ber. Ver. Passau*—Bericht des naturhistorischen Vereins in Passau. (Passau, 8vo.) N.
- Ber. Ver. Regensburg*—Berichte des naturwissenschaftlichen Vereines zu Regensburg. (Regensburg, 8vo.) N.
- Bibl. geol. Russ.*—Bibliothèque géologique de la Russie. (St. Petersburg, 8vo.) Ng.
- Bibl. hautes études*—Bibliothèque de l'école des hautes études. Section des Sciences naturelles. (Paris, 8vo.) N. K.
- Bibliog. anat.*—Bibliographie anatomique. Revue des travaux en langue française. Anatomie, histologie, embryologie, anthropologie. (Paris, 8vo.) Nz.
- Bibl. universelle*—Bibliothèque universelle. [Vide *Arch. Sci. Nat.*]
- Bibl. Zool.*—[Vide *Zool. Anz.*]
- Bidr. Finlands Nat.*—Bidrag till Kännedom af Finlands Natur och Folk. (Helsingfors, 8vo.) N. R. Z. (C) p.
- Bijbl. Java Suikerind.*—De indische Natuur. Algemeen Natuurwetenschapp. Bijblad van het Archief voor de Java-Suikerindustrie. (8vo.)
- Bijdr. Dierk.*—Bijdragen tot de Dierkunde uitgeven door het Genootschap Natura artis magistra. (Amsterdam, 4to.) Nz. K. R. L. C, b.
- Biochem. Centrbl.*—Biochemisches Centralblatt. Vollständiges Sammelorgan für die Grenzgebiet der Medizin und Chemie. (Leipzig, 8vo.) (C) y, path.
- Biol. Bull.*—Biological bulletin published by the Marine Biological Laboratory, Woods Holl, Mass. (8vo, Woods Holl.) K. Z. L. (C) b.
- Biol. Centr.-Amer.*—Biologia Centrali-Americana. (London, 4to.) Nz. K. Z. L. (C) p. O.
- Biol. Centrbl.*—Biologisches Zentralblatt. (Leipzig, 8vo.) N. K. R. L. Z. C, b. O.
- Biol. Foren. Forh.*—Biologiska Föreningens Förhandlingar. Verhandlungen des biologischen Vereins in Stockholm. (Stockholm and Leipzig, 8vo.) N. K. R. C. O.
- Biol. Lect. Wood's Holl*—Biological Lectures from the Marine Biological Laboratory, Wood's Holl, Mass. (Boston, 8vo.) K. L. (C) b. O.
- Biol. Untersuch.*—Biologische Untersuchungen von Prof. Dr. Gustaf Retzius. Neue Folge. (Stockholm, 4to.) Nz. C. O.
- Biometrika.* Biometrika a journal for the statistical study of biological problems. (Cambridge, 8vo.) N. K. Z. C, p, b. O.
- Blatt. Aquar. Fr.*—Blätter der Aquarien- und Terrarien-Freunde. (Berlin.) Z.
- Board Agric. leaf.*—Board of Agriculture leaflets. (London.) Nz. K.
- Bol. Ac. Barcelona*—Boletín de la real Academia de Ciencias y Artes de Barcelona. (Barcelona, 4to.) N.
- Bol. Ac. Cordoba*—Boletín de la Academia nacional de Ciencias en Cordoba (República Argentina). (Buenos Aires, 8vo.) [Formerly *Ac. Argentina.*] N. R. Z. L.

- Bol. Com. geol. espan.*—Boletín de la Comisión del mapa geológico de España. (Madrid, 8vo.) Ng. R. O.
- Bol. Com. geol. Ital.*—Bollettino del R. Comitato geologico d' Italia. (Roma, 8vo.) Ng. R. (C) g.
- Bol. Comm. geogr. Minas Geraes*—Boletim de Commissão geographica e geologica do Estado de Minas Geraes. (Rio de Janeiro, 8vo.) N.
- Bol. Com. Parasit. agric. Mexico*—Boletín de la Comisión de parasitología agrícola de México.
- Boll. Comm. S. Paulo*—Boletim da Commissão geographica e geologica da Provincia de S. Paulo. (S. Paulo, 8vo.) N. K.
- Bol. Inst. geol. Mexico*—Boletín del Instituto geologico de Mexico. (Mexico, 4to.) Ng. K. (C) p.
- Boll. Acc. Gioen.*—Bollettino mensile della Accademia Gioenia di Scienze naturali in Catania. (Catania, 8vo.) N. R.
- Boll. Ent. agrar.*—Bollettino di Entomologia agraria, Patologia vegetale, Orticultura e Giardinaggio. (Padova.)
- Boll. Mus. Genova*—Bollettino dei Musei di Zoologia e Anatomia comparata della R. Università di Genova. (Genova, 8vo.) [Apparently reprints from *Atti Soc. Ligustica.*] Nz. (C) z.
- Boll. Mus. Torino*—Bollettino dei Musei di Zoologia ed Anatomia comparata della R. Università di Torino. (Torino, 8vo.) Nz. Z. L.
- Boll. Naturalista*—Bollettino del Naturalista Collettore, Allevatore, Coltivatore, Acclimatore. (Siena, 8vo.) N.
- Boll. scient.*—Bollettino scientifico. (Pavia, 8vo.) N.
- Boll. Soc. Adriat.*—Bollettino della Società Adriatica di Scienze naturali in Trieste. (Trieste, 8vo.) N. R.
- Boll. Soc. geol. Ital.*—Bollettino della Società geologica Italiana. (Roma, 8vo.) Ng.
- Boll. Soc. Napoli*—Bollettino della Società di Naturalisti in Napoli. (Napoli, 8vo.) N. R. Z. (C) p.
- Boll. Soc. zool. Ital.*—Bollettino della Società zoologica Italiana. (Roma, 8vo.) [Formerly called *Boll. Soc. rom. Zool.*] Nz. Z.
- Bol. Mus. Gældi*—Boletim do Museu Gældi de Historia natural e Ethnographia. (Museu paraense.) (Pará, 8vo.) N. Z. C.
- Bol. Mus. Mexico*—Boletín del Museo nacional de México. Segunda época. (México, 8vo.) N.
- Bol. Mus. Valparaíso*—[Vide *Revist. Chilena.*]
- Bol. Soc. Aragon.*—Boletín de la Sociedad Aragonesa de Ciencias naturales. (8vo, Zaragoza.) N.
- Bol. Soc. espan.*—Boletín de la Sociedad española de Historia natural. (Madrid, 8vo.) N. R. Z. C.
- Broteria*—Broteria. Revista de ciencias naturaes do Collegio de S. Fiel. (Lisboa, 8vo.) N. Z.
- Bryn Mawr Mon.*—Bryn Mawr College Monographs. Monograph Series. (Bryn Mawr, 8vo.)
- Bryn Mawr Repr.*—Bryn Mawr College Monographs. Reprint Series. (Bryn Mawr, 8vo.) (C) b.

- Bull. Ac. Belgique*—Bulletins de l'Académie royale des Sciences, des Lettres, et des Beaux-arts de Belgique. 3^e Série. (Bruxelles, 8vo.) N. K. R. Z. L. C, p. O.
- Bull. Ac. Cracovie*—Bulletin international de l'Académie des Sciences de Cracovie. Comptes-rendus des séances. (Cracovie, 8vo.) N. R. Z. C. O.
- Bull. Ac. St. Petersb.*—Izvyestiya imperatorskoï akademii nauk. Bulletin de l'Académie impériale des Sciences de St. Pétersbourg. V^e Série. (St. Pétersbourg, 8vo.) N. K. R. Z. L. C, p. O.
- Bull. Agric. Brisbane*—Queensland. Department of Agriculture, Brisbane, Bulletin. [Consists chiefly of *Rep. Dep. Agric. Brisbane*.] (Brisbane, 8vo.) Nz.
- § *Bull. Agric. exp. Stat. California*—University of California publications, College of Agriculture. Agricultural experiment Station. Bulletin. (Sacramento, 8vo.) (C) p.
- Bull. Amer. Mus.*—Bulletin of the American Museum of Natural History. (New York, 8vo.) N. K. R. Z. L. (C) p. O.
- Bull. Amer. Pal.*—Bulletins of American Paleontology. (Cornell Univ., Ithaca, 8vo.) Ng.
- Bull. Arizona exp. Stat.*—University of Arizona. Arizona agricultural experiment Station. Bulletin. (Tucson, 8vo.)
- Bull. B. O. C.*—[Vide *Bull. Ornith. Club*.]
- Bull. Brooklyn Inst.*—The Museum of the Brooklyn Institute of Arts and Sciences. Science Bulletin. (New York, 8vo.) N. R. (C) p.
- Bull. Brookville Soc.*—Bulletin of the Brookville Society of Natural History. (Richmond, 8vo.) N. L.
- Bull. Buffalo Soc.*—Bulletin of the Buffalo Society of Natural Sciences (Buffalo, 8vo.) N. R. L. C.
- Bull. Bussey Inst.*—Bulletin of the Bussey Institution. (Cambridge, Mass., 8vo.) N. R.
- Bull. Carte geol. France*—Bulletin des Services de la Carte géologique de la France et des Topographies souterraines. (Paris, 8vo.) Ng.
- Bull. Ceska Ac.*—Académie des sciences de l'Empereur François Joseph I (Česká Akademie Císaře Františka Josefa I) IV. Bulletin international. Résumés des travaux présentés. Sciences mathématiques et naturelles. (Prague, 8vo.) N. (C) p.
- Bull. Chicago Ac.*—Bulletin of the Chicago Academy of Sciences. (Chicago, 8vo.) N. R. L. O.
- Bull. Coll. Agric. Tokyo*—Imperial University. College of Agriculture. Bulletin. (Tōkyō, 8vo.)
- Bull. Colorado exp. Stat.*—The State agricultural College. Agricultural experiment Station. Bulletin. (Fort Collins, 8vo.)
- Bull. Com. geol. St. Petersb.*—Bulletin du Comité géologique de St. Pétersbourg. (St. Pétersbourg.) Ng. K. R.
- Bull. Comm. geol. Finlande*—Bulletin de la Commission géologique de Finlande. (Helsingfors, 8vo.) Ng. (C) p.
- Bull. Cornell Exp. Stat.*—Cornell University Agricultural Experiment Station. Bulletin. Entomological Division. (Ithaca, 8vo.)

- Bull. Cornell Univ.*—Bulletin of the Cornell University. (Science.) (Ithaca, 8vo.) N. O.
- Bull. Denison Univ.*—Bulletin of the Scientific Laboratories of Denison University. (Granville, 8vo.) N. Z. (C) p.
- Bull. Dep. Agric. Brisbane*—[Vide *Rep. Dep. Agric. Brisbane.*]
- Bull. Dep. Agric. Ent.*—[Vide *Bull. U. S. Dep. Agric. Ent.*]
- Bull. Dep. Agric. Victoria*—[Vide *J. Dep. Agric. Victoria.*]
- § *Bull. econ. Madagascar*—Colonie de Madagascar et dependences. Bulletin économique publié par les soins du Gouvernement général. (Tananarive, 8vo.) N.
- Bull. Essex Inst.*—Bulletin of the Essex Institute. (Salem, 8vo.) N. K. R. (C) p. O.
- Bull. Exp. Stat. Florida*—Bulletin of the Experiment Station of Florida at the State Agricultural College. (Jacksonville, 8vo.)
- Bull. Geol. Caen*—Bulletin du Laboratoire de Géologie de la Faculté des Sciences de Caen. (Caen, 8vo.) Ng.
- Bull. Geol. Inst. Upsala*—Bulletin of the Geological Institute of Upsala. (Upsala, 8vo.) Ng. (C) p.
- Bull. Geol. Soc. Amer.*—Bulletin of the Geological Society of America. (Rochester, 8vo.) Ng. O.
- Bull. geol. surv. Alabama*—Geological Survey of Alabama. Bulletin (Montgomery, 8vo.) Ng.
- Bull. Geol. Surv. Minnesota*—Bulletin. Geological and Natural History Survey of Minnesota. (Minneapolis, 8vo.) Ng. O.
- Bull. Geol. Surv. Missouri*—Geological Survey of Missouri. Bulletin. (Jefferson City, 8vo.) Ng.
- Bull. Geol. Surv. Victoria*—Victoria, Department of mines. Bulletins of the geological Survey of Victoria. (Melbourne, 8vo.) Ng.
- Bull. geol. Univ. Calif.*—University of California. Bulletin of the Department of Geology. (Berkely, 8vo.) Ng. K. (C) p.
- Bull. Illinois exp. Stat.*—University of Illinois Agricultural experiment Station. Bulletin. (?Springfield, 8vo.)
- Bull. Illinois Lab.*—Bulletin of the Illinois State Laboratory of Natural History. (Peoria, 8vo.) N. Z. L. (C) p.
- Bull. Illinois Mus.*—Bulletin of the Illinois State Museum of Natural History. (Springfield, 4to.) Ng. Z.
- Bull. Inst. Egypt.*—Bulletin de l'Institut Égyptien, Troisième série. (Le Caire, 8vo.) N. C, p.
- Bull. Inst. Genev.*—Bulletin de l'Institut nationale Genevois. (Genève, 8vo.) N. R. C.
- Bull. internat. expl. Mer*—Conseil permanent international pour l'exploration de la Mer. Bulletin des résultats acquis pendant les courses périodiques. (Copenhague, 4to.) Nz. R. Z. (C) b. O.
- Bull. kol. Mus. Haarlem*—Bulletin van het kolonial Museum te Haarlem. (Amsterdam, 8vo.) N.
- Bull. Lab. Iowa*—Bulletin from the Laboratories of Natural History of the State University of Iowa. (Iowa City, 8vo.) N.

- Bull. Lab. St. Petersb.*—Bulletin de la Laboratoire biologique de St. Pétersbourg. [Called also] Izvestiya . . . Izdanie pod redaktziei P. Lesghafta. (St. Pétersbourg, 8vo.) N. K.
- Bull. Liverp. Mus.*—Bulletin of the Liverpool Museums under the City Council. (Liverpool, 8vo.) N. Z. C.
- Bull. Minnesota Ac.*—Bulletin of the Minnesota Academy of Natural Sciences. (Minneapolis, 8vo.) N. K.
- Bull. Mus. Harvard*—Bulletin of the Museum of Comparative Zoölogy at Harvard College in Cambridge. (Cambridge, Mass., 8vo.) Nz. R. Z. L. (C) p. O.
- Bull. Mus. Madras*—Madras government Museum. Bulletin. (Madras, 8vo.) Nz. R. Z. L. (C) p.
- Bull. Mus. Marseille*—Annales du Musée d'histoire naturelle de Marseille . . . Série II. Bulletin, notes zoologiques, géologiques, paléontologiques, variétés. (Marseille, 4to.) N. K. Z. L. O.
- Bull. Mus. Monaco*—Bulletin du Musée océanographique de Monaco. (Monaco, 8vo.) N. R. Z. L. (C) p.
- Bull. Mus. Paris*—Muséum d'histoire naturelle. Bulletin du Muséum d'histoire naturelle. (Paris, 8vo.) N. K. R. Z. L. C. O.
- Bull. N. Mexico Stat.*—New Mexico College of Agriculture and the mechanic Arts. Agricultural experiment Station. Bulletin. (Las Cruces, 8vo.) Nz.
- Bull. N. York Mus.*—Bulletin of the New York State Museum. (Albany, 8vo.) N. R. L.
- Bull. Ohio Exp. Stat.*—Bulletin of the Ohio Agricultural Experiment Station. Technical Series. (Columbus, 8vo.)
- Bull. Ornith. Club*—Bulletin of the British Ornithologists' Club. (London, 8vo.) Nz. Z. O.
- Bull. Queensland Geol. Surv.*—Queensland. Department of mines. Geological Survey. Bulletin. (Brisbane, 8vo.) Ng. K.
- Bull. S. Calif. Ac.*—Bulletin of Southern California Academy of Sciences. (Los Angeles, 8vo.) N.
- Bull. Sci. France Belgique*—Bulletin scientifique de la France et de la Belgique. (Paris, 8vo.) N. Z. C, b. O.
- Bull. Soc. Angers*—Bulletin de la Société d'Études scientifiques d'Angers. (Angers, 8vo.) N.
- Bull. Soc. Anthropol. Lyon*—Bulletin de la Société d'Anthropologie de Lyon. (Lyon, 8vo.) R.
- Bull. Soc. Anthropol. Paris*—Bulletins de la Société d'Anthropologie de Paris. (Paris, 8vo.) K. R. C. O.
- Bull. Soc. Aude*—Bulletin de la Société d'Études scientifiques de l'Aude. (Carcassonne, 8vo.) N.
- Bull. Soc. Autun*—Société d'Histoire Naturelle d'Autun. Bulletin. (Autun, 8vo.) N. K.
- Bull. Soc. Belge Geol.*—Bulletin de la Société belge de Géologie, de Paléontologie et d'Hydrologie. [Consists of Pr.-verb. and Mémoires.] (Bruxelles, 8vo.) Ng. K.
- Bull. Soc. Belge Micr.*—Bulletin de la Société belge de Microscopie. (Bruxelles, 8vo.) N. (C) p.

- Bull. Soc. Beziers*—Bulletin de la Société d'étude des Sciences naturelles de Béziers. Compte-rendu des séances (extrait des procès-verbaux). (Béziers, 8vo.) N. R.
- Bull. Soc. Borda Dax*—Société de Borda Dax. Bulletin trimestriel. (Dax, 8vo.) N.
- Bull. Soc. Bruxelles*—Bulletin de la Société royale Linnéenne de Bruxelles. (Bruxelles, 8vo.) N.
- Bull. Soc. Bucarest*—Buletinul Societatii de Stiinte din Bucuresti-România, Bulletin de la Société des Sciences Bucarest-Roumanie. (Bucuresci, 8vo.) N. R.
- Bull. Soc. Colmar*—Bulletin de la Société d'histoire naturelle de Colmar. (Colmar, 8vo.) N.
- Bull. Soc. Elbeuf*—Bulletin de la Société d'étude des sciences naturelles d'Elbeuf. (Elbeuf, 8vo.) N.
- Bull. Soc. ent. France*—Bulletin des séances et Bulletin bibliographique de la Société entomologique de France (Paris, 8vo.) Nz. K. R. Z. L. C.
- Bull. Soc. ent. Ital.*—Bullettino della Società entomologica italiana. (Firenze, 8vo.) Nz. Z. O.
- Bull. Soc. ent. Suisse*—[Vide *Mt. Schweiz. ent. Ges.*]
- Bull. Soc. Finistere*—Bulletin de la Société d'études scientifiques du Finistère. (Morlaix, 8vo.) N.
- Bull. Soc. Fribourg*—Bulletin de la Société fribourgeoise des Sciences naturelles. (Fribourg, 8vo.) N.
- Bull. Soc. geol. Belgique*—[Included in *Ann. Soc. geol. Belgique*, q.v.]
- Bull. Soc. geol. France*—Bulletin de la Société géologique de France. [Includes *Compte-rendu*.] (Paris, 8vo.) Ng. K. R. C. O.
- Bull. Soc. geol. Normand.*—Bulletin de la Société géologique de Normandie. (Havre, 8vo.) Ng.
- Bull. Soc. hist. nat. Toulouse*—Société d'histoire naturelle de Toulouse. Bulletin. (Toulouse, 8vo.) N. Z.
- Bull. Soc. Isere*—Bulletin de la Société de statistique des sciences naturelles et des arts industriels du département de l'Isère. 4^e Série. (Grenoble, 8vo.) N.
- Bull. Soc. Jassy*—Le Bulletin de la Société des médecins et des naturalistes de Jassy. (Jassy, 8vo.) N.
- Bull. Soc. Metz*—Bulletin de la Société d'histoire naturelle de Metz. (Metz, 8vo.) N.
- Bull. Soc. Moscou*—Bulletin de la Société impériale des Naturalistes de Moscou. (Moscou, 8vo.) N. K. R. Z. L. C, p. O.
- Bull. Soc. Murith.*—Bulletin des travaux de la Murithienne. Société Valaisanne des Sciences naturelles. (Sion, 8vo.) N.
- Bull. Soc. Nancy, seances*—Bulletin des Séances de la Société des Sciences de Nancy. Serie III. (Nancy, 8vo.) N. R.
- Bull. Soc. N. Brunswick*—Bulletin of the Natural History Society of New Brunswick. (St. John, 8vo.) N.
- Bull. Soc. Neuchatel*—Bulletin de la Société des Sciences naturelles de Neuchatel. (Neuchatel, 8vo.) N. R. Z. C.

- Bull. Soc. Nîmes*—Bulletin de la Société d'étude des Sciences naturelles de Nîmes. (Nîmes, 8vo.) N.
- Bull. Soc. Nord France*—Bulletin de la Société Linnéenne du Nord de la France. (Amiens.) N. K.
- Bull. Soc. Normand.*—Bulletin de la Société Linnéenne de Normandie. 4^e Série. (Caen, 8vo.) N. Z. L. C.
- Bull. Soc. Ouest France*—Bulletin de la Société des Sciences naturelles de l'Ouest de la France. (Paris & Nantes, 8vo.) N. Z. (C) p.
- Bull. Soc. Ouest Rennes*—[Vide *Bull. Soc. Sci. med. Ouest. France.*]
- Bull. Soc. Oural.*—Bulletin de la Société ouralienne d'amateurs des sciences naturelles. (Ekathérinebourg, fo.) N.
- Bull. Soc. Philom.*—Bulletin de la Société Philomathique de Paris. viii^e Série. [Includes Comptes-rendus.] (Paris, 8vo.) N. R. Z. C.
- Bull. Soc. Reims*—Bulletin de la Société d'Étude des Sciences naturelles de Reims. [Includes Comptes-rendus des réunions.] (Reims, 8vo.) N.
- Bull. Soc. Rouen*—Bulletin de la Société des amis des Sciences naturelles de Rouen. (Rouen, 8vo.) N.
- Bull. Soc. Saone*—Bulletin mensuel de la Société des Sciences naturelles de Saône-et-Loire. (Chalon-sur-Saône, 4to.) N.
- Bull. Soc. Savoie*—Bulletin de la Société d'histoire naturelle de Savoie. (Chambéry, 8vo.) N.
- Bull. Soc. sci. med. Ouest France*—Bulletin de la Société scientifique et médicale de l'Ouest. (Rennes, 8vo.) N. (C) p.
- Bull. Soc. Sci. Toulouse*—Bulletin de la Société des Sciences physiques et naturelles de Toulouse. (Toulouse, 8vo.) N. R.
- Bull. Soc. Semur*—Bulletin de la Société des Sciences historiques et naturelles de Semur (Côte-d'Or). 2^e Série. (Semur, 8vo.) N.
- Bull. Soc. Vaudoise*—Bulletin de la Société Vaudoise des Sciences naturelles. (Lausanne, 8vo.) N. R. Z. L. (C) g.
- Bull. Soc. Veneto-Trent.*—Bullettino della Società Veneto-Trentina di Scienze Naturali. (Padova, 8vo.) N.
- Bull. Soc. Washington*—Bulletin of the Philosophical Society of Washington. (Washington, 8vo.) N. K. R. Z. L. (C) p.
- Bull. Soc. Yonne*—Bulletin de la Société des Sciences historiques et naturelles de l'Yonne. (Auxerre, 8vo.) N. C.
- Bull. Soc. Zool. agric.*—Bulletin de la Société d'Études et de vulgarisation de la Zoologie agricole. (Bordeaux, 8vo.)
- Bull. Soc. zool. France*—Bulletin de la Société zoologique de France. (Paris, 8vo.) Nz. K. Z. L. C. O.
- Bull. Soc. zool. malac. Belgique*—Bulletin des séances de la Société royale malacologique de Belgique [forms part of *Ann. Soc. malac. Belgique*, q.v.]. (Bruxelles, 8vo.) Nz. R. L.
- Bull. Univ. Kansas*—Bulletin of the University of Kansas. [Vide *Kansas Univ. Bull.*]
- Bull. Univ. Montana*—Bulletin of the University of Montana. (Missoula 8vo.) N. (C) p.

- Bull. U. S. Dep. Agric. Animal Ind.*—U. S. Department of Agriculture. Bureau of Animal Industry. Bulletin. (Washington, 8vo.) Nz. K. (C) p.
- Bull. U. S. Dep. Agric. Biol.*—U. S. Department of Agriculture. Division of Biological Survey. (Washington, 8vo.) N. K. R. (C) p. O.
- Bull. U. S. Dep. Agric. Ent.*—U. S. Department of Agriculture. Division of Entomology. Bulletin. (Washington, 8vo.) Nz. K. Z. (C) p. O.
- Bull. U. S. Dep. Agric. Ent. tech.*—U. S. Department of Agriculture. Division of Entomology. Technical series. (Washington, 8vo.) Nz. Z. C, p. O.
- Bull. U. S. Dep. Agric. Farmers*—U. S. Department of Agriculture. Farmers' Bulletin. (Washington, 8vo.) Nz. K. (C) p.
- Bull. U. S. Fish Comm.*—Bulletin of the United States Fish Commission. (Washington, 8vo.) Nz. K. R. Z. L. (C) b, p. O.
- Bull. U. S. Geol. Surv.*—Bulletins of the United States Geological Survey. (Washington, 8vo.) Ng. K. R. Z. (C) p, g. O.
- Bull. U. S. Mus.*—Bulletin of the United States National Museum. (Washington, 8vo.) N. K. R. Z. L. C, b, p. O.
- Bull. Washburn Lab.*—Bulletin of the Washburn Laboratory of Natural History. (Topeka, 8vo.) N.
- Bull. Wisconsin Soc.*—Bulletin of the Wisconsin Natural History Society. (Milwaukee, 8vo.) Z.
- Bull. Wisconsin Surv.*—Wisconsin Geological and Natural History Survey. Bulletin. Scientific Series. (Madison, 8vo.) N. K. C, p.
- Bull. Zool. Soc. New York*—News Bulletin of the Zoological Society. (New York, 4to.) Nz. Z.
- Butll. Inst. Catalan.*—Butlleti de la institució catalana d'història natural. (Barcelona, 8vo.) Z.
- Canad. Ent.*—The Canadian Entomologist. (London, Canada, 8vo.) Nz. Z. L. C. O.
- Canad. Rec.*—The Canadian Record of Science, including the proceedings of the Natural History Society of Montreal. (Montreal, 8vo.) N. R. Z. L. C. O.
- § *Cas. Ceske Spol. ent.*—[Vide *Act. Soc. ent. Bohem.*]
- Causeries Soc. zool. France*—Causeries scientifiques de la Société zoologique de France. (Paris, 8vo.) Nz. K, Z. C.
- CB. Ges. Anthropol.*—Correspondenzblatt der deutschen Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. [Issued with *Arch. Anthropol.*, q.v.] (München, 4to.) R. O.
- CB. Iris*—[Vide *Deutsche ent. Zeitschr. Lep.*]
- Cellule*—La Cellule: Recueil de Cytologie et d'Histologie générale. (Lierre & Louvain, 4to.) Nz. K. R. L. C, b. O.
- Centrbl. Bakter.*—Centralblatt für Bakteriologie, Parasitenkunde und Infektionskrankheiten. Erste Abteilung: Medizinisch-hygienische Bakteriologie und tierische Parasitenkunde. Zweite Abteilung: Allgemeine landwirtschaftlich Bakteriologie, Gärungsphysiologie und Pflanzenpathologie. (Jena, 8vo.) N. R. Z. C, p. O.

- Centrbl. Mineral.*—Centralblatt für Mineralogie, Geologie und Palæontologie in Verbindung mit dem Neuen Jahrbuch für Mineralogie, Geologie und Palæontologie herausgegeben von M. Bauer, E. Koken, Th. Liebisch. (Stuttgart, 8vo.) Ng. K. R. C. O.
- Centrbl. Physiol.*—Centralblatt für Physiologie unter Mitwirkung der Physiologischen Gesellschaft zu Berlin und des Physiologischen Clubs in Wien. (Berlin, 8vo.) (C) y. O.
- Ceska Ak. Praze*—Česká Akademie Císaře Františka Josefa provědy, slovesnost a umění v Praze. Třída II. (Praze, 4to.) N. (C) p.
- Circ. U. S. Dep. Agric. Ent.*—United States Department of Agriculture. Division of Entomology. Circular. Second series. (Washington, 8vo.) Nz. (C) p.
- § *Cold Spring Mon.*—Cold Spring Harbor Monographs. Published by the Brooklyn Institute of Arts and Sciences. (Brooklyn, N.Y., 8vo.) N. L. (C) p. O.
- Coleopteriste*—Le Coléoptériste ou Répertoire des travaux sur les Coléoptères de l'Ancien-monde. (Paris, 8vo.)
- Colorado Coll. Stud.*—[Vide *Stud. Colorado Coll.*]
- Commis. geol. Portugal*—Comissão dos trabalhos geologicos de Portugal. Mémoires. (Lisboa, 4to.) Ng. (C) p. O.
- Comm. Millport Stat.*—Millport Marine biological Station. Communications. (Glasgow, 8vo.) N. C.
- Commun. geol. Portugal*—Comunicações da Comissão dos trabalhos geologicos de Portugal. (Lisboa, 8vo.) Ng. R. (C) p.
- Comun. Mus. Buenos Aires*—Comunicaciones del Museo nacional de Buenos Aires. (Buenos Aires, 8vo.) N. K.
- Congr. Zool.*—Congrès international de Zoologie. [Vide *Verh. Congr. Zool.*]
- Conseil permanent international pour l'exploration de la Mer*—[Vide *Bull. internat. expl. Mer*; *Rapp. internat. expl. Mer*; and *Publ. internat. expl. Mer.*]
- Contr. Canad. Pal.*—Geological Survey of Canada. Contributions to Canadian Palæontology. (Ottawa, 8vo or 4to.) Ng. K. O.
- Contr. Lab. Pennsylv.*—Contributions from the Zoological Laboratory of the University of Pennsylvania. [Reprints.] (Philadelphia, 8vo.) Nz. (C) p.
- C.R. Ac. Savoie*—[Vide *Mem. Ac. Savoie.*]
- C.R. Ac. Sci.*—Comptes-rendus hebdomadaires des Séances de l'Académie des Sciences. (Paris, 4to.) N. K. R. Z. L. C, p, y. O.
- C.R. Ass. Franc.*—Association française pour l'avancement des Sciences. Compte-rendu. (Paris, 8vo.) N. K. R. C.
- C.R. Soc. Biol.*—Comptes-rendus hebdomadaires des Séances et Mémoires de la Société de Biologie. Neuvième série. [Consists of Comptes-rendus and Mémoires.] (Paris, 8vo.) N. R. Z, C, y. O.
- C.R. Soc. Bordeaux*—[Vide *Pr.-verb. Soc. Bordeaux.*]
- C.R. Soc. geol. France*—Compte-rendu des séances de la Société géologique de France. [Issued with *Bull. Soc. geol. France*, q.v.]
- C.R. Soc. Helvet.*—Archives des Sciences physiques et naturelles. Compte-rendu des travaux . . . de la Société Helvétique des Sciences naturelles. (Genève, 8vo.)

- C.R. Soc. Philom.*—Comptes-rendus sommaires de la Société philomathique de Paris. [Indexed in *Bull. Soc. Philom.*, q.v.] (Paris, 8vo.)
- C.R. Soc. Reims*—[Part of *Bull. Soc. Reims*, q.v.]
- C.R. Soc. St. Petersburg*—[Vide *Protok. St. Peterb. Obshch.*]
- Danmarks geol. Unders.*—Danmarks geologiske Undersøgelse. (Kjøbenhavn, 8vo.) Ng.
- Danske Selsk. Skr.*—Det Kongelige Danske Vinenskabernes Selskabs Skrifter. Naturvidenskabelig og matematisk Afdeling. (Kjøbenhavn, 8vo.) N. K. R. Z. L. (C) p.
- Denk. Ak. Wien*—Denkschriften der Kaiserlichen Akademie der Wissenschaften zu Wien. (Wien, 4to.) N. K. R. Z. L. C. O.
- Denk. Ges. Jena*—Denkschriften der medicinisch-naturwissenschaftlichen Gesellschaft zu Jena. (Jena, 4to.) N. K. R. Z. L. C. O.
- Denk. Schweiz. Ges.*—Neue Denkschriften der allgemeinen Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Nouveaux Mémoires de la Société Helvétique des Sciences naturelles. (Zurich, 4to.) N. K. R. L. C, p.
- Derby. Naturalist.*—The Derbyshire Naturalists' Quarterly. (Derby, 8vo.) N. C.
- Deutsche ent. Zeitschr.*—Deutsche entomologische Zeitschrift herausgegeben von der Deutschen entomologischen Gesellschaft. (Berlin, 8vo.) Nz. Z. C. O.
- Deutsche ent. Zeitschr. Iris*—Deutsche entomologische Zeitschrift Iris herausgegeben vom entomologische Verein Iris zu Dresden. (Berlin, 8vo.) Nz. Z. C.
- Doc. Soc. Charleroy*—Documents et rapports de la Société paléontologique et archéologique de Charleroy. (Malines, 8vo.) Ng.
- Echange*—L'Échange, Revue Linnéenne, organe des Naturalistes de la région Lyonnaise. (Lyon, 8vo.) N. Z.
- Eclog. geol. Helvet.*—Eclogæ geologicæ Helvetiæ. [Also called] Recueil périodique de la Société géologique Suisse, and Mittheilungen der Schweizerischen geologischen Gesellschaft. (Lausanne, 8vo.) Ng.
- Econ. P. Dublin Soc.*—The economic proceedings of the Royal Dublin Society. (Dublin, 8vo.) N. K. R. Z. L. C, p. O.
- E. Mus. Lund.*—[Vide *Afh. Mus. Lund.*]
- Ent. Ber. Nederland.*—Entomologische Berichten uitgeven door de Nederlandsche entomologische Vereeniging. (Amsterdam, 8vo.) Nz. L.
- Ent. Mag.*—The Entomologist's Monthly Magazine. Second series. (London, 8vo.) Nz. Z. L. C.
- Ent. Meddel.*—Entomologiske Meddelelser udgivne af entomologisk Forening. Anden række. (Kjøbenhavn, 8vo.) Nz. Z.
- Ent. Nachr.*—Entomologische Nachrichten. (Berlin, 8vo.) Nz. Z. C.
- Ent. News Philad.*—Entomological News and Proceedings of the Entomological Section of the Academy of Natural Sciences of Philadelphia. (Philadelphia, 8vo.) Nz. Z. L.
- Entomologist*—The Entomologist: an Illustrated Journal of General Entomology. (London, 8vo.) Nz. K. Z. L. C.

- Ent. Rec.*—The Entomologist's Record and Journal of Variations. (London, 8vo.) Nz. Z. C.
- Ent. Tidskr.*—Entomologisk Tidskrift utgifven af entomologiska Föreningen i Stockholm. (Stockholm, 8vo.) Nz. Z. L. Ö.
- Ent. Zeit. Stettin*—Entomologische Zeitung herausgegeben von dem entomologische Vereine zu Stettin. (Stettin, 8vo.) Nz. Z. L. C.
- Ergeb. Anat.*—Ergebnisse der Anatomie und Entwicklungsgeschichte. [=A second title of *Anat. Hefte Ergeb.*, q.v.]
- Ergebn. Physiol. Biochemie*—Ergebnisse der Physiologie. I Abteilung Biochemie. (Wiesbaden, 8vo.) (C) py. Ö.
- Ergebn. Physiol. Biophys.*—Ergebnisse der Physiologie. II Abteilung Biophysik and Psychophysik. (Wiesbaden, 8vo.) (C) py. Ö.
- Ertek. term. Magyar Ak.*—Értekezések a természettudományok köréből. Kiadja a Magyar tudományos Akadémia. [Dissertations, Natural Science group; published by the Magyar Academy of Sciences.] (Budapest, 8vo.) N. K. R.
- Ertes. Erdel. Muz.*—Értesítő az Erdélyi Muzeum-egylet. Orvos természettudományi szakosztályából. II. Természettudományi szak. [Bulletin of the Transylvanian Museum Society. Medico-natural-science section.] (Kolozsvár, 8vo.) N. R.
- Essex Natural.*—The Essex Naturalist: being the Journal of the Essex Field Club. (Chelmsford, 8vo.) N. R. Z. L. C, p.
- Etudes Ent.*—Études d'Entomologie: Faunes entomologiques, descriptions d'Insectes nouveaux ou peu connus. Par Charles Oberthur. (Rennes, 8vo.) Nz. Z.
- Evkon. Trencsen Eg.*—[Vide *Jahresh. Ver. Trencsen.*]
- Exp. Stat. Rec.*—Experiment Station Record. U. S. Department of Agriculture. (Washington, 8vo.) K. R.
- Ezh. Mus. St. Petersb.*—Ezhegodnik zoologicheskagho muzeya Imperatorskoï akademii nauk.—[Vide *Annuaire Mus. St. Petersb.*]
- Fauna*—"Fauna." Verein Luxemburger Naturfreunde. Mittheilungen aus den Vereinssitzungen. [Also called] "Fauna." Société des Naturalistes Luxembourgeois. Comptes-rendus des Séances. (Luxembourg, 8vo.) N.
- Fauna Stat. Neapel*—Fauna und Flora des Golfes von Neapel und der angrenzenden Meeres-Abschnitte, herausgegeben von der zoologischen Station zu Neapel. (Berlin, 4to.) Nz. K. R. Z. L. (C) b. Ö.
- Feuille Natural.*—Feuille des Jeunes Naturalistes. (Paris, 8vo.) Nz.
- Field*—The Field, the Farm, the Garden. The Country Gentleman's newspaper. (London.) Z. C.
- Field Club*—The Field Club, with which is incorporated "The Garner." (London, 8vo.) N. C. Ö.
- Field Columbian Mus. Publication*—[Vide *Field Mus. Ornithol.*—*Field Mus. Zool.*—etc.: there being in all six of these "series."]
- Field Mus. Ornithol.*—Field Columbian Museum Publication. Ornithological Series. (Chicago, 8vo.) N. K. R. Z. L. C.
- Field Mus. Rep.*—Field Columbian Museum Publication. Annual Report of the Director to the Board of Trustees. (Chicago, 8vo.) N. K. R. Z. L. C.

- Field Mus. Zool.*—Field Columbian Museum Publication. Zoological Series. (Chicago, 8vo.) N. K. R. Z. L. C.
- Field Nat. Quart.*—The Field Naturalist's Quarterly. (Edinburgh and London, 8vo.) Z. C.
- Földtani Kozl.*—Földtani Közlöny. [Geologische Mittheilungen. Zeitschrift der Ungarischen geologischen Gesellschaft.] (Buda Pest, 8vo.) Ng. K. R.
- Forh. Selsk. Christian.*—Forhandlinger i Videnskabs-Selskabet i Christiania. (Christiania, 8vo.) N. R. Z. C, p. O.
- Forh. Skand. Naturf.*—Forhandlingar ved det Skandinaviska Naturforskaremötet. (Christiania, &c., 8vo.) N.
- Forschber. Plon.*—Forschungsberichte aus der biologischen Station zu Plön. (Berlin, 8vo.) N. K. Z. (C) b. O.
- Forsch. Deutsch. Landesk.*—Forschungen zur deutschen Landes- und Volkskunde. (Stuttgart, 8vo.) N.
- Frelon.*—Le Frelon, journal d'Entomologie. (Chateauroux, 8vo.) Nz. Z.
- Gefied. Welt.*—Die gefiederte Welt : Zeitschrift für Vogelliebhaber, -zuchter und -händler. (Magdeburg, 4to.) Nz. Z.
- Geognost. Jahresh.*—Geognostische Jahreshefte ; herausgegeben im Auftrage des K. Bayerischen Staatsministeriums des Innern von der geognostischen Abtheilung des K. Bayer. Oberbergamtes in München. (Cassel, 8vo.) Ng. C.
- Geol. Foren. Stockholm Forh.*—Geologiska Föreningens i Stockholm Förhandlingar. (Stockholm, 8vo.) Ng.
- Geol. Mag.*—The Geological Magazine, or Monthly Journal of Geology ; with which is incorporated "The Geologist." New series. (London, 8vo.) Ng. K. Z. L. C, g. O.
- Geol. Surv. Michigan.*—Geological Survey of Michigan lower peninsula. [Separate parts are often headed "Reports."] (Lansing, 8vo.) Ng.
- Ghlas Srpska Ak.*—Ghlas Srpska Kral'evska akanemije. Prvi razred. (Beograd, 8vo.) N.
- Giorn. Soc. Palermo.*—Giornale di Scienze naturali ed economiche pubblicato per cura della Società di Scienze naturali ed economiche di Palermo. (Palermo, 4to.) N. R.
- Glasnik Naravosl. druzt.*—Glasnik hrvatskoga naravoslovnoga društva [Societas historico-naturalis Croatica]. (Zagreb, 8vo.) N. (C) p.
- Globus.*—Globus. Illustrierte Zeitschrift für Länder-und Völkerkunde. (Braunschweig, 4to.) C.
- Goteborgs Vetensk. Handl.*—Göteborgs kungl. Vetenskaps- och Vitterhetssamhälles Handlingar. Ny Tidsföljd. (Göteborg, 8vo.) N. (C) p.
- Halifax Natural.*—The Halifax Naturalist and Record of the scientific Society. (Halifax, 8vo.) N. C.
- Helios.*—Helios. Abhandlungen und monatliche Mittheilungen aus dem Gesamtgebiete der Naturwissenschaften. Organ des Naturwissenschaftlichen Vereins des Regierungsbezirks Frankfurt. (Berlin, 8vo.) N. R.
- Hist. Berwick. Club.*—History of the Berwickshire Naturalists' Club. (Alnwick, 8vo.) N. R. L.

Horæ Soc. ent. Ross.—*Horæ Societatis entomologicæ Rossicæ*. [Called also] *Trudui Russkagho entomologhicheskagho obshchestva v St. Petersburg.* (St. Petersburg, 8vo.) Nz. Z. L. C.

Hull Mus. Publ.—Hull Museum Publications [Reprints]. (Hull, 8vo.) N.

Ibis—The Ibis: a Quarterly Journal of Ornithology. (London, 8vo.) Nz. Z. L. C. O.

Indian Mus. Notes—Indian Museum Notes. (Calcutta, 8vo.) Nz. R. Z. C.

Indisch. Nat.—[Vide *Bijbl. Java Suikerind.*]

Informe Mus. Costa Rica—Museo nacional de Costa Rica. Informe. (San José, 8vo.) N. K.

Ins. World—The Insect World: a monthly magazine. [In the Japanese language.] (Gifu, 8vo.) Nz.

Int. J. Anat.—Monthly International Journal of Anatomy and Physiology. [Also issued as] *Journal international d'anatomie et de physiologie*, [and as] *Internationale Monatsschrift für Anatomie und Histologie*. (Paris, Leipzig, London, 8vo.) K. R. C. O.

Int. J. Micr.—The International Journal of Microscopy and Natural Science. (London, 8vo.) N. K. C.

Int. Monatsschr. Anat.—[Vide *Int. J. Anat.*]

Iris Dresden—[Vide *Deutsche ent. Zeitschr. Iris.*]

Irish Natural.—The Irish Naturalist: a Monthly Journal of General Irish Natural History. (Dublin, 8vo.) N. K. Z. L. C.

Izv. Obshch. Moskov.—*Īzvyestiya imperatorskagho obshchestva lyubitelei estestvoznaniya, antropolghii i étnografii sostoyashchagho pri imperatorskom Moskovskom Unīversitetye.* (Moscow, 4to.) N.

Izv. imp. ak. nauk.—[Vide *Bull. Ac. St. Petersb.*]

Izv. Kaukas. Mus.—*Īzvestiya Kaukaskagho Museya.* [Called also *Mittheilungen des Kaukasischen Museums.*] (Tiflis, 8vo.) N. L.

Izv. S. Petersb. Lab.—[Vide *Bull. Lab. St. Petersb.*]

Izv. Vost.-sibir.—*Īzvyestiya Vostochno-sibirskagho, otdyela imperatorskagho russkagho gheoghraficheskagho obshchestva.* (Irkutsk, 8vo.) N.

Jaarb. Ak. Amsterdam—*Jaarboek van de Koninklijke Akademie van Wetenschappen gevestigd te Amsterdam.* (Amsterdam, 8vo.) N. R. Z. L. (C) p.

Jaarb. Mijn. Ned. Oost-Ind.—*Jaarboek van het Mijnwesen in Nederlandsch Oost-Indië.* (Amsterdam, 8vo.) N. K.

J. Ac. Philad.—Journal of the Academy of Natural Sciences of Philadelphia. (Philadelphia, 8vo.) N. R. Z. L. C. O.

§ *J. Agric. Sci.*—The Journal of Agricultural Science. (Cambridge, 8vo.) K. C, p.

J. Agric. Soc. Engl.—The Journal of the Royal Agricultural Society of England. (London, 8vo.) K. R. Z. L. C. O.

- J. Agric. Soc. Guiana*—Journal of the Royal agricultural and commercial Society of British Guiana [formerly called *Timehri*.] (Demerara, 8vo.) N. R. L.
- J. Agric. Soc. India*—Proceedings and Journal of the Agricultural and Horticultural Society of India. (Calcutta, 8vo.) Nz.
- Jahrb. Ak. Erfurt*—Jahrbücher der königlichen Akademie gemeinnütziger Wissenschaften zu Erfurt. Neue Folge. (Erfurt, 8vo.) N.
- Jahrb. geol. Landesanst. Berlin*—Jahrbuch der königlich-preussischen geologischen Landesanstalt und Bergakademie zu Berlin. (Berlin, 8vo.) Ng. K. C.
- Jahrb. geol. Reichsanst.*—Jahrbuch der kaiserlich-königlichen geologischen Reichsanstalt. (Wien, 8vo.) Ng. R. L. C, p, g. O.
- Jahrb. Hamburg. Anst.*—Jahrbuch der Hamburgischen wissenschaftlichen Anstalten. [Consists of Jahresberichte and Abhandlungen. Also vide *Mt. Mus. Hamburg*.] (Hamburg, 8vo.) N. K. R. L. C.
- Jahrb. Mus. Karnten*—Jahrbuch des naturhistorischen Lande-museums von Kärnten. (Klagenfurt, 8vo.) N. C.
- Jahrb. nassau. Ver.*—Jahrbücher des nassauischen Vereins für Naturkunde. (Wiesbaden, 8vo.) N. K. L. C, p.
- Jahrb. Siebenburg. Karpath. Ver.*—Jahrbuch des Siebenbürgischen Karpathen-Vereins. (Hermannstadt, 8vo.) N. R.
- Jahrb. St. Gall. Ges.*—Jahrbuch der St. Gallischen naturwissenschaftlichen Gesellschaft. (St. Gallen, 8vo.) [Formerly *Ber. St. Gall. Ges.*] N. R.
- Jahrb. Ungarn. geol. Anstalt*—[= *Magyar Föld. Int. Evkon.*, q.v.]
- Jahresber. Anat. Entwickl.*—Jahresberichte über die Fortschritte der Anatomie und Entwicklungsgeschichte. (Jena, 8vo.) K. C, y. O.
- Jahresber. Bohm. Ges.*—Jahresbericht der Königlich-Böhmischen Gesellschaft der Wissenschaften. (Prag, 8vo.) N. R. L. (C) p.
- Jahresber. forst-phan. Stat.*—Jahresbericht der forstlich-phänologischen Stationen Deutschlands. (Berlin, 8vo.) N.
- Jahresber. Ges. Gera*—Jahresbericht der Gesellschaft von Freunden der Naturwissenschaften in Gera. (Gera, 8vo.) N.
- Jahresber. Ges. Graubund.*—Jahres-Bericht der naturforschenden Gesellschaft Graubündens. (Chur, 8vo.) N. C.
- Jahresber. Ges. Hannover*—Jahresbericht der naturhistorischen Gesellschaft zu Hannover. (Hannover, 8vo.) L.
- Jahresber. Hamburg. Anst.*—[Forms part of *Jahrb. Hamburg. Anst.*, q.v.]
- Jahresber. Mus. Francisco-Car.*—Jahres-Bericht des Museums Francisco-Carolinum. (Linz, 8vo.) N.
- Jahresber. ornith. Ver. Munchen*—Jahresbericht der ornithologischen Vereins München. (Munich, 8vo.) Z. C.
- Jahresber. Physiol.*—Jahresbericht über die Fortschritte der Anatomie und Physiologie. (Bonn, 8vo.) K. R. C, y. O.
- Jahresber. Schlesisch. Ges.*—Jahres-Bericht der Schlesischen Gesellschaft für vaterländische Cultur. (Breslau, 8vo.) N. K. R. (C) p.

- Jahresber. Ungarn geol. Anstalt*—Jahresbericht der Kgl.-Ung. geologischen Anstalt. (Budapest, 8vo.) Ng. R. C.
- § *Jahresber. Ver. Adria*—Jahresbericht des Vereines zur Förderung der naturwissenschaftlichen Erforschung der Adria. (Wien.)
- Jahresber. Ver. Braunschweig*—Jahresbericht des Vereins für Naturwissenschaft zu Braunschweig. (Braunschweig, 8vo.) N. R.
- Jahresber. Ver. Erdk. Dresden*—Jahresbericht des Vereins für Erdkunde zu Dresden. (Dresden, 8vo.) Ng. K. R.
- Jahresber. Ver. Magdeburg*—Jahresbericht und Abhandlungen des naturwissenschaftlichen Vereins in Magdeburg. (Magdeburg, 8vo.) N. R. (C) p.
- Jahresber. Ver. Mannheim*—Jahresbericht des Vereins für Naturkunde zu Mannheim. (Mannheim, 8vo.) N.
- Jahresber. Ver. Osnabruck*—Jahresbericht des naturwissenschaftlichen Vereins zu Osnabruck. (Osnabruck, 8vo.) N. R.
- Jahresber. Ver. Zwickau*—Jahresbericht des Vereins für Naturkunde zu Zwickau. (Zwickau, 8vo.) N.
- Jahresber. Westfal. Ver.*—Jahresbericht des Westfälischen Provinzial-Vereins für Wissenschaft und Kunst. (Münster, 8vo.) N. Z. L.
- Jahresh. Ver. Luneberg*—Jahreshefte des naturwissenschaftlichen Vereins für das Fürstentum Lüneberg. (Lüneberg, 8vo.) N.
- Jahresh. Ver. Trencsen.*—Jahresheft des naturwissenschaftlichen Vereines des Trencsener Komitates. [Called also] Évkönyve a Trencsén vármegyey Termeszettudományi egylet megbizásábol. (Trencsen, 8vo.) N.
- Jahresh. Ver. Wurttemb.*—Jahreshefte des Vereins für vaterländische Naturkunde in Württemberg. (Stuttgart, 8vo.) N. K. R. Z. L. C.
- J. Anat. Physiol.*—Journal de l'Anatomie et de la Physiologie normales et pathologiques de l'homme et des animaux. (Robin.) (Paris, 8vo.) K. R. Z. C. O.
- J. Anat. Physiol. norm. path.*—The Journal of Anatomy and Physiology, normal and pathological. (London, 8vo.) Nz. K. R. Z. L. C, p, y. O.
- J. Asiat. Soc. Bengal*—Journal of the Asiatic Society of Bengal: Part II, Natural History, &c. (Calcutta, 8vo.) N. K. R. Z. L. C, p. O.
- J. Board Agric. London*—The Journal of the Board of Agriculture. (London, 8vo.) Nz. K. C.
- J. Bombay Asiat. Soc.*—Journal of the Bombay Branch of the Royal Asiatic Society. (Bombay, 8vo.) N. C.
- J. Bombay Soc.*—The Journal of the Bombay Natural History Society. (Bombay, 8vo.) N. Z.
- J. Ceylon Asiat. Soc.*—Journal of the Ceylon Branch of the Royal Asiatic Society. (Colombo, 8vo.) N. Z.
- J. China Asiat. Soc.*—Journal of the China Branch of the Royal Asiatic Society. (Shanghai, 8vo.) N. R. Z.
- J. Cincinnati Soc.*—Journal of the Cincinnati Society of Natural History. (Cincinnati, 8vo.) N. R. (C) p.

- J. Coll. Tokyo*.—Journal of the College of Science, Imperial University of Tokyo, Japan. (Tōkyō, 4to.) N. K. R. Z. L. C, b, p. O.
- J. Conch.*.—The Journal of Conchology. (Leeds, 8vo.) Nz. Z. L. C.
- J. Conchyl.*.—Journal de Conchyliologie. (Paris, 8vo.) Nz. Z. C.
- J. Dep. Agric. Victoria*.—The Journal of the department of Agriculture of Victoria. (Melbourne, 8vo.) [Reprints are issued as *Bull. Dep. Agric. Victoria.*] Nz. L.
- J. E. Mitchell Soc.*.—Journal of the Elisha Mitchell Scientific Society. (Raleigh, 8vo.) N. R.
- Jena. Zeitschr.*.—Jenaische Zeitschrift für Naturwissenschaft, herausgegeben von der medizinisch-naturwissenschaftlichen Gesellschaft zu Jena. (Jena, 8vo.) N. K. R. Z. L. C, p, y. O.
- J. Essex Lab.*.—The journal of the Essex technical laboratories. ["Biology notes."] (Chelmsford, 8vo.) N. K.
- J. exp. Med. Baltimore*.—The journal of experimental medicine. (Baltimore, 8vo.) (C) path. O.
- J. exp. Zool.*.—The journal of experimental Zoölogy. (Baltimore, 8vo.) Z. (C) b.
- J. f. O.*.—[=*J. Ornith.*, q.v.]
- J. Geol.*.—The journal of Geology. A semi-quarterly Magazine of Geology and related Sciences. (Chicago, 8vo.) Ng. K. C, p. O.
- J. geol. Soc. Tokyo*.—The journal of the geological Society of Tōkyō. [Tokyo, 8vo.] Ng.
- J. Hamilton Ass.*.—Journal and proceedings of the Hamilton Association (Hamilton, Ontario, 8vo.) N. R.
- § *J. Hygiene*.—Journal of Hygiene. (Cambridge, 8vo.) R. C, p, path. O.
- J. Inst. Cornwall*.—Journal of the Royal Institution of Cornwall. (Truro, 8vo.) N. K. R. C.
- J. Inst. Jamaica*.—Journal of the Institute of Jamaica. (Kingston, 8vo.) N. K. R. Z. L.
- J. int. Anat.*.—Journal international d'anatomie et de physiologie. [Vide *Int. J. Anat.*]
- J. Isle Man Soc.*.—Yn Lioar Mannínagh. The journal of the Isle of Man Natural History and Antiquarian Society. (Douglas, 8vo.) N.
- J. Leeward Isl.*.—Agricultural Journal of the Leeward Islands. (St. John's, Antigua, 8vo.)
- J. Linn. Soc.*.—Journal of the Linnean Society: Zoology. (London, 8vo.) Nz. K. R. Z. L. C, b, p. O.
- J. Liverp. Geol. Ass.*.—Liverpool Geological Association: Journal. (Liverpool, 8vo.) Ng.
- J. London Coll. Soc.*.—Journal of the City of London College Society, London. (Lewes, 8vo.) N.
- J. Malac.*.—The journal of Malacology. (London, 8vo.) Nz. Z. C.
- J. Mar. Biol. Ass.*.—Journal of the Marine Biological Association of the United Kingdom. (Plymouth, 8vo.) N. K. R. Z. L. C, b. O.

- J. N. Jersey Soc.*—Journal of the New Jersey Natural History Society. (Trenton, 8vo.) R.
- J. Northampt. Soc.*—Journal of the Northamptonshire Natural History Society and Field Club. (Northampton, 8vo.) N.
- J. N. York Ent. Soc.*—Journal of the New York Entomological Society. (New York, 8vo.) Nz. Z.
- J. N. York Micr. Soc.*—Journal of the New York Microscopical Society. (New York, 8vo.) N. C.
- Johns Hopkins Univ. Circ.*—Johns Hopkins University Circulars. (Baltimore, 4to.) N. K. R. (C) p. O.
- J. Ornith.*—Journal für Ornithologie. Deutsches Centralorgan für die gesammte Ornithologie. (Leipzig, 8vo.) Nz. R. Z.
- J. Oxford Club*—Journal of the Oxford University Junior Scientific Club. (Oxford, 8vo.) N. O. C.
- J. Physiol.*—The Journal of Physiology. [Foster.] (Cambridge, 8vo.) K. R. Z. L. C, y. O.
- J. Physiol. Path.*—Journal de Physiologie et de Pathologie générale. (Paris, 8vo.) R. C, y. O.
- J. Psychol. Neurol.*—Journal für Psychologie und Neurologie. (Leipzig, 8vo.)
- J. Quekett Club*—The Journal of the Quekett Microscopical Club. (London, 8vo.) N. K. R. Z. L. C. O.
- J. R. Micr. Soc.*—Journal of the Royal Microscopical Society. (London, 8vo.) N. K. R. Z. L. C, p. O.
- J. R. Soc. N. S. Wales*—Journal and Proceedings of the Royal Society of New South Wales. (Sydney, 8vo.) N. K. R. Z. L. C, p. O.
- J. Sci. Lisb.*—Jornal de Sciencias mathematicas, physicas et naturaes publicado sob os auspicios da Academia real das Sciencias de Lisboa. (Lisboa, 8vo.) N. R. Z. L. C.
- J. Straits Asiat. Soc.*—Journal of the Straits Branch of the Royal Asiatic Society. (Singapore, 8vo.) N. R. Z. C.
- J. Trinidad Club*—Journal of the Trinidad Field Naturalists' Club. (Port of Spain, 8vo.) N. Z. L.
- J. trop. Medicine*—The Journal of tropical Medicine. (London, 4to.) N. C, path.
- J. Victoria Inst.*—Journal of the Transactions of the Victoria Institute or Philosophical Society of Great Britain. (London, 8vo.) N. K. R. C.
- Kansas Univ. Sci. Bull.*—The Kansas University Science Bulletin [formerly called *Kansas Univ. Quarterly*]. N. R. (C) p.
- Kansas Scient.*—The Kansas City Scientist. (Kansas City, 8vo.) N.
- KB. Ver. Riga*—Korrespondenzblatt des Naturforscher-Vereins zu Riga (Riga, 8vo.) N.
- K. Danske Selsk. Skr.*—[Vide *Danske Selsk. Skr.*]
- Kent Mag.*—The Kent Magazine. (Maidstone, 8vo.)
- Kew Bull.*—Royal Gardens, Kew. Bulletin of Miscellaneous Information. (London, 8vo.) K. R. Z. L. C.

- K. fysiografiska Sällskapet i Lund Handlingar* [published as part of *Acta Univ. Lund.*, q.v.]
- Kosmos polski.*—Kosmos czasopismo polskiego Towarzystwa przyrodników im Kopernika. (Lwowie [=Lemberg], 8vo.) N.
- Leopoldina*—Leopoldina: Amtliches Organ der k. Leopoldino-carolinischen deutschen Akademie der Naturforscher. (Halle, 4to.) N. R. Z. L. (C) p.
- Lioar Mannin.*—Yn Lioar Mannínagh. Published quarterly for the Isle of Man Natural History Society. N.
- Lo Speriment.*—Lo Sperimentale. Archivio di biologia normale e patologica (Organo dell' Accademia medico-fisica fiorentina). (Firenze, 8vo.) (C) path.
- Lund. Univ. Ars-skr.*—[=*Acta Univ. Lund.*, q.v.]
- Maandbl. Genoot. Amsterdam*—Maandblad voor Natuurwetenschappen uitgeven door de Sectie voor Natuurwetenschappen van het Genootschap ter bevordering van Natuur-, Genees- en Heelkunde te Amsterdam. (Amsterdam, 8vo.) N.
- Magyar Fold. int. evkon.*—A Magyar Királyi Földtani intézet évkönyve. [Annals of the Hungarian Royal Geological Bureau.] (Buda Pest, 8vo.) Ng. R.
- Marcellia*—Marcellia. Revista internazionale di Cécidologia. (Padova, 8vo.) Z.
- Mar. invest. S. Africa*—Cape of Good Hope, Department of Agriculture. Marine investigations in South Africa. (Cape Town, 8vo.) Nz. R. Z. L.
- Maryland geol. Surv.*—Maryland geological Survey. (Baltimore, 8vo.) Ng. R. (C) p.
- Mater. fizyjoğr. Kraj.*—[Vide *Sprawozd. Kom. Krajo.*]
- Mater. gheol. Kavkaza*—Materialuī dlya gheologhii Kavkaza. (Tiflis, 8vo.) Ng.
- Math. naturw. Ber. Ungarn*—Mathematische und naturwissenschaftliche Berichte aus Ungarn, &c. (Leipzig, 8vo.) N. K. (C) p.
- Math. term. Ertes. Magyar Ak.*—Mathematikai és természettudományi Értesítő. Kiadja a Magyar Tudományos Akadémia. [Mathematics and Natural Science Intelligencer.] (Budapest, 8vo.) N. R.
- Math. term. Kozlem. Magyar Ak.*—Mathematikai és természettudományi Közlemények vonatkozólag a hazai viszonyokra. Kiadja a Magyar tudományos Akadémia. [Mathematical and Natural Science communications relating to native topics. Published by the Magyar Academy of Natural Sciences.] (Budapest, 8vo.) N. R.
- Medd. Dansk Geol. For.*—Meddelelser fra Dansk geologisk forening. (Kjøbenhavn, 8vo.) Ng.
- Medd. Grønland*—Meddelelser om Grønland, udgione af Commissionen for Leddsen af de geologiske og geographiske Undersøgelser i Grønland. (Kjøbenhavn, 8vo.) N. (C) g. O.
- § *Medd. Komm. Havundersog.*—Meddelelser fra Kommissionen for Havundersøgelser. Serie Plankton. (Kjøbenhavn, 4to.) Z.

- Medd. Soc. Faun. Fenn.*—Meddelanden af Societas pro Fauna et Flora Fennica. (Helsingfors, 8vo.) N. R. L. C.
- Med. Plantentuin Java*—Mededeelingen uit 's Lands Plantentuin. (Batavia, 8vo.) R. (C) p.
- Mel. biol.*—Mélanges biologiques [reprints from *Bull. Ac. St. Petersb.*]. N. K.
- Mem. Ac. Angers*—Mémoires de l'Académie des sciences et belles-lettres d'Angers. Nouvelle période. (Angers, 8vo.) N.
- Mem. Ac. Barcel.*—Memorias de la Real Academia de Ciencias de Barcelona. (Barcelona, 4to.) N.
- Mem. Ac. Belgique*—Mémoires de l'Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique. (Bruxelles, 4to.) N. R. Z. L. (C) p. O.
- Mem. Acc. Acireale*—[Vide *Atti Acc. Acireale*.]
- Mem. Acc. Bologna*—Memorie della R. Accademia delle Scienze dell' Istituto di Bologna. Memorie della Sezione delle Scienze naturali. (Bologna, 4to.) N. R. C.
- Mem. Acc. Lincei*—Atti della R. Accademia dei Lincei. Memorie della classe di Scienze fisiche, matematiche e naturali. (Roma, 4to.) N. K. R. L. C, p. O.
- Mem. Acc. Modena*—Memorie della Regia Accademia di Scienze, Lettere ed Arti in Modena. Serie ii. (Modena, 4to.) N.
- Mem. Acc. Pont. Lincei*—Memorie della Pontificia Accademia dei nuovi Lincei. (Roma, 4to.) N.
- Mem. Acc. Torino*—Memorie della Reale Accademia delle Scienze di Torino. (Torino, 4to.) N. K. R. Z. L. C, p.
- Mem. Ac. Dijon*—Mémoires de l'Académie des Sciences, Arts et Belles-Lettres de Dijon. 4^e Série. (Dijon, 8vo.) N. K. R. C.
- Mem. Ac. France*—Mémoires de l'Académie des Sciences de l'Institut de France. (Paris, 4to.) N. R. C. O.
- Mem. Ac. Lisboa*—Memorias da Academia real das Sciencias de Lisboa; classe de Sciencias mathematicas, physicas e naturaes. (Lisboa, 4to.) N. R.
- Mem. Ac. Lyon*—Mémoires de l'Académie des Sciences, Belles Lettres et Arts de Lyon. 3^e Série. (Lyon, 8vo.) N. K. R. L. C.
- Mem. Ac. Madrid*—Memorias de la real Academia de Ciencias exactas, fisicas y naturales de Madrid. (Madrid, 8vo.) N. R. Z. O.
- Mem. Ac. Metz*—Mémoires de l'Académie de Metz lettres, sciences, arts et agriculture. 3^e série. (Metz, 8vo.) K. Z. (C) p.
- Mem. Ac. Montpell.*—Académie des Sciences et Lettres de Montpellier. Mémoires de la section des Sciences. (Montpellier, 4to.) N. R. L. C.
- Mem. Ac. Savoie*—Mémoires de l'Académie des Sciences, Belles-Lettres et Arts de Savoie [includes Comptes-rendus]. 4^e Série. (Chambéry, 8vo.) N. C.
- Mem. Ac. St. Petersb.*—Zapiski Imperatorskoï akademii nauk. Mémoires de l'Académie impériale des Sciences de Saint-Petersbourg. VIII^e série. (St. Petersbourg, 4to.) N. K. R. Z. L. C, p. O.

- Mem. Ac. Toulouse*—Mémoires de l'Académie des Sciences de Toulouse.
x^e Série. (Toulouse, 8vo.) N. R. C.
- Mem. Ac. Vaucluse*—Mémoires de l'Académie de Vaucluse. (Avignon,
8vo.) N.
- Mem. Ac. Washington*—Memoirs of the National Academy of Sciences.
(Washington, 4to.) N. R. Z. L. C, p. O.
- Mem. Amer. Ac.*—Memoirs of the American Academy of Arts and Sciences.
(Cambridge, Mass., 4to.) N. K. R. Z. L. (C) p. O.
- Mem. Amer. Mus.*—Memoirs of the American Museum of Natural History.
(New York, 4to.) N. K. Z. (C) p.
- Mem. Austral. Mus.*—Australian Museum, Sydney. Memoir. (Sydney,
8vo.) N. K. R. Z. L. C. O.
- Mem. Boston Soc.*—Memoirs of the Boston Society of Natural History
(Boston, 4to.) N. K. R. Z. L. (C) p. O.
- Mem. B. P. Bishop Mus.*—Memoirs of the Bernice Pauahi Bishop Museum.
(Honolulu, 4to.) L. C.
- Mem. Calif. Ac.*—Memoirs of the California Academy of Sciences. (San
Francisco, 4to.) N. R. Z. L. (C) p.
- Mem. Carnegie Mus.*—Memoirs of the Carnegie Museum. (Pittsburgh,
4to.) N. K. Z. O.
- Mem. Carta geol. Ital.* (8vo)—Memorie descrittive della carta geologica
d' Italia. (Roma, 8vo.) Ng.
- Mem. carta geol. Ital.* (4to)—Memorie per servire alla descrizione della
carta geologica d' Italia, pubblicate a cura del R. comitato geologico
del Regno. (Firenze, 4to.) Ng.
- Mem. Chicago ent. Soc.*—Occasional memoirs of the Chicago entomo-
logical Society. (Chicago, 8vo.)
- Mem. Com. geol.*—Mémoires du Comité géologique [second title for *Trudui*
geol. Kom., q.v.].
- Mem. Com. geol. Espana*—Memorias de la Comisión del mapa geológico de
España. (Madrid, 8vo.) Ng. R.
- Mem. Cour. Ac. Belgique* (8vo)—Mémoires couronnés et Mémoires des
Savants étrangers publiés par l'Académie Royale des Sciences des
Lettres et des Beaux-Arts de Belgique. (Bruxelles, 8vo.) N. K.
R. Z. L. C, p.
- Mem. Cour. Ac. Belgique* (4to)—Mémoires couronnés et Mémoires des
Savants étrangers publiés par l'Académie Royale des Sciences des
Lettres et des Beaux-Arts de Belgique. (Bruxelles, 4to.) N. K.
R. Z. L. C, p.
- Mem. geol. Surv. India*—Memoirs of the geological Survey of India.
(Calcutta, 8vo.) Ng. R. Z. (C) p, g. O.
- Mem. geol. Surv. N. S. Wales*—Memoirs of the geological Survey of New
South Wales. (Sydney, 4to.) Ng. K. R. L. C.
- Mem. geol. Surv. U. K.*—Memoirs of the geological Survey of the United
Kingdom. (London, 8vo.) Ng. K. R. C. O.
- Mem. geol. Surv. Victoria*—Victoria. Department of mines. Memoirs
of the geological Survey of Victoria. (Melbourne, 4to.) Ng. K. R.

- Mem. Inst. Egypt.*—Mémoires présentés à l'Institut Égyptien et publiés sous les auspices de S. A. Abbas Pacha, Khédive d'Égypte. (Le Caire, 4to.) N.
- Mem. Inst. Genev.*—Mémoires de l'Institut national Genevois. (Genève, 4to.) N. K. R. L. C.
- Mem. Ist. Lombardo*—Memorie del Reale Istituto Lombardo di Scienze e Lettere. Classe di scienze matematiche e naturali. (Milano, 4to.) N. K. R. C, p.
- Mem. Ist. Veneto*—Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti. (Venezia, 4to.) N. K. R. L. C.
- Mem. Johns Hopkins Univ.*—Memoirs from the Biological Laboratory of the Johns Hopkins University. (Baltimore, 4to.) Nz. (C) p. O.
- Mem. Manchester Soc.*—Memoirs and Proceedings of the Manchester Literary and Philosophical Society. (Manchester, 8vo.) N. K. R. Z. L. C, p. O.
- Mem. Mus. Belgique*—Mémoires du Musée royal d'histoire naturelle de Belgique. (Bruxelles, 4to.) N. R. Z. C.
- Mem. Mus. Brooklyn*—The Museum of the Brooklyn Institute of Arts and Sciences. Memoirs of Natural Sciences. (Brooklyn, 4to.) N. (C) p. O.
- Mem. Mus. Goeldi*—Memorias do Museu Goeldi. (Museu Paraense de Historia natural e ethnographia.) (Rio de Janeiro, 4to.) N. L. C.
- Mem. Mus. Harvard*—Memoirs of the Museum of Comparative Zoölogy at Harvard College. (Cambridge, U.S., 4to.) Nz. R. Z. L. C, p. O.
- Mem. Mus. Milano*—Museo civico di Storia naturale di Milano e Società italiana di scienze naturali. Memorie. (Milano, 4to.) N. R.
- Mem. Mus. Para.*—[Vide *Mem. Mus. Goeldi.*]
- Mem. N. S. Wales Club*—Memoirs of the New South Wales Naturalists' Club. (Sydney, 8vo.) N.
- Mem. N. York Ac.*—New York Academy of Sciences. Memoirs. (New York, 4to.) N. K. R. Z. (C) p.
- Mem. N. York Mus.*—Memoirs of the N. York State Museum. (Albany, 4to.) Ng.
- Mem. pres. Ac. France*—Mémoires présentés par divers savants à l'Académie des sciences de l'Institut de France et imprimés par son ordre. (Paris, 4to.) N. K. C.
- Mem. R. Soc. S. Austral.*—Memoirs of the Royal Society of South Australia. (Adelaide, 4to.) N. R. Z. L. (C) p.
- Mem. Soc. Ac. Boulogne*—Société Académique de l'arrondissement de Boulogne-sur-Mer. Mémoires. (Boulogne, 8vo.)
- Mem. Soc. Anthropol. Paris*—Mémoires de la Société d'Anthropologie de Paris. (Paris, 8vo.) Nz. K. R. O.
- Mem. Soc. Ant. Alzate*—Memorias de la Sociedad Científica "Antonio Alzate." (Mexico, 8vo.) N. R. L. (C) p.
- Mem. Soc. Belge Geol.*—[Vide *Bull. Soc. Belge Geol.*]
- Mem. Soc. Belge Micr.*—[= *Ann. Soc. Belge Micr.*, q.v.]

- Mem. Soc. Biol.*—Comptes-rendus hebdomadaires des séances, et mémoires de la Société de Biologie. [Issued with *C.R. Soc. Biol.*] (Paris, 8vo.) N. R. Z. C. O.
- Mem. Soc. Bordeaux*—Mémoires de la Société des Sciences physiques et naturelles de Bordeaux. 6^{ième} Série. (Paris & Bordeaux, 8vo.) N. K. R. L. (C) p.
- Mem. Soc. Cannes*—Mémoires de la Société des Sciences naturelles et historiques des Lettres et des Beaux-Arts de Cannes et de l'arrondissement de Grasse. (Cannes, 8vo.) N.
- Mem. Soc. Cher*—Mémoires de la Société historique, littéraire et scientifique du Cher. (Bourges, 8vo.)
- Mem. Soc. Cherbourg*—Mémoires de la Société nationale des Sciences naturelles et mathématiques de Cherbourg. (Paris, 8vo.) N. K. R. L. C, p.
- Mem. Soc. ent. Belgique*—Mémoires de la Société entomologique de Belgique. (Bruxelles, 8vo.) Nz. Z. L. C.
- Mem. Soc. Espan.*—Memorias de la Sociedad Española de Historia natural. (Madrid, 8vo.) N. R. Z.
- Mem. Soc. Geneve*—Mémoires de la Société de physique et d'histoire naturelle de Genève. (Genève, 4to.) N. R. Z. L. C, p.
- Mem. Soc. geol. Belgique*—[Included in *Ann. Soc. geol. Belgique*, q.v.]
- Mem. Soc. geol. France*—Mémoires de la Société géologique de France. Troisième série. (Paris, 4to.) Ng. K. R. C, g. O.
- Mem. Soc. geol. France, Pal.*—Mémoires de la Société géologique de France. Paléontologie. (Paris, 4to.) Ng.
- Mem. Soc. geol. Nord*—Mémoires de la Société géologique du Nord. (Lille, 4to.) Ng. C.
- Mem. Soc. Hainaut*—Mémoires et Publications de la Société des Sciences, des Arts, et des Lettres du Hainaut. v^{me} Série. (Mons, 8vo.) N. K. R.
- Mem. Soc. ital.*—Memorie di matematica e di fisica della Società italiana delle Scienze. (Detta dei LX.) (Napoli, 4to.) N. R. (C) p.
- Mem. Soc. Jaroslav*—Mémoires de la Société des Naturalistes de Jaroslav. [Called also *Trudui Yaroslavskago estestvenno-istoricheskago obshchestva.*] Z.
- Mem. Soc. Kiev.*—[Vide *Zapiski Kiev. Obshch.*]
- Mem. Soc. Liege*—Mémoires de la Société royale des Sciences de Liège. (Bruxelles, 8vo.) N. K. R. L. C.
- Mem. Soc. Lille*—Mémoires de la Société des Sciences de l'Agriculture et des Arts de Lille. (Lille, 8vo.) N.
- Mem. Soc. malac. Belgique*—Mémoires. (Part of *Ann. Soc. malac. Belgique*, q.v.)
- Mem. Soc. Moscou*—Nouveaux Mémoires de la Société impériale des Naturalistes de Moscou. (Moscou, 4to.) N. K. R. C, p.
- Mem. Soc. Nord France*—Mémoires de la Société Linnéenne du Nord de la France. (Amiens, 8vo.) N.
- Mem. Soc. Normandie*—Mémoires de la Société Linnéenne de Normandie. (Caen, 4to.) N. Z. L. C.

- Mem. Soc. nouv. Russ.*—[Vide *Zapiski Novoross. Obsch.*]
- Mem. Soc. pal. Suisse*—[Vide *Abh. Schweiz. pal. Ges.*]
- Mem. Soc. Saone*—Mémoires de la Société des Sciences naturelles de Saône-et-Loire. (Chalon-sur-Saône, 4to.) N. Z.
- Mem. Soc. Seine et Oise*—Mémoires de la Société des Sciences naturelles et médicales de Seine-et-Oise. (Versailles, 8vo.) N. K.
- Mem. Soc. Toscana*—[Vide *Atti Soc. Toscana.*]
- Mem. Soc. zool. France*—Mémoires de la Société zoologique de France. (Paris, 8vo.) Nz. K. Z. L. C. O.
- Microgr. prep.*—Le Micrographe préparateur, journal de micrographie générale de technique micrographique et revue des journaux français et étrangers. (Paris, 8vo.) N.
- Miscell. ent.*—Miscellanea entomologica. (Narbonne, 8vo.) Nz. Z.
- Monit. Zool. ital.*—Monitore Zoologico italiano. (Firenze, 8vo.) Nz. Z. (C) b.
- Mon. U.S. Geol. Surv.*—Department of the Interior. Monographs of the United States Geological Survey. (Washington, 4to.) Ng. K. R. Z. (C) p. O.
- Morphol. Jahrb.*—Morphologisches Jahrbuch: eine Zeitschrift für Anatomie und Entwicklungsgeschichte. (Leipzig, 8vo.) Nz. K. R. Z. L. C. O.
- Mt. Aargau. Ges.*—Mittheilungen der Aargauischen naturforschenden Gesellschaft. (Aarau, 8vo.) N. K. R.
- Mt. Ak. Berlin*—Mathematische und naturwissenschaftliche Mittheilungen aus den Sitzungsberichten der königlich-preussischen Akademie der Wissenschaften zu Berlin. [Comprises the nat. hist. portions of *SB. Ak. Berlin*, and bears the pagination of that periodical in addition to its own.] (Berlin, 8vo.) N. L. O.
- Mt. Badisch. Geol. Landesanst.*—Mittheilungen der grossherzoglich-badischen Geologischen Landesanstalt, herausgegeben im Auftrage des Ministeriums des Innern. (Heidelberg, 8vo.) Ng. C.
- Mt. Deutsch. Fisch. Ver.*—Mittheilungen des Deutschen Fischereivereins.
- Mt. Deutsch. Schutzg.*—Mittheilungen von Forschungsreisenden und Gelehrten aus den Deutschen Schutzgebieten. Wissenschaftliche Beihefte zum Deutschen Kolonialblatte. (Berlin, 8vo.) N.
- Mt. embr. Inst. Wien*—Mittheilungen aus dem embryologischen Institute der k. k. Universität in Wien. (Wien, 8vo.) N. K. C. b. O.
- Mt. geogr. Ges. Jena*—Mittheilungen der geographischen Gesellschaft (für Thüringen) zu Jena. (Jena, 8vo.) N.
- Mt. Geol. Landesanst. Elsass Lothringen*—Mittheilungen der Geologischen Landesanstalt Elsass-Lothringen. (Strassburg, 8vo.) Ng.
- Mt. geol. Mus. Dresden*—Mittheilungen aus dem k. mineralogisch-geologischen und prähistorischen Museum in Dresden. (Cassel, 4to.) Ng.
- Mt. Ges. Bern*—Mittheilungen der naturforschenden Gesellschaft in Bern. (Bern, 8vo.) N. K. R. Z.
- Mt. Ges. Lubeck*—Mittheilungen der geographischen Gesellschaft und des Naturhistorischen Museums in Lübeck. Zweite Reihe. (Lübeck, 8vo.) N.

- Mt. Ges. Luzern*—Mittheilungen der Naturforschenden Gesellschaft in Luzern. (Luzern, 8vo.) N.
- Mt. Ges. Tokio*—Mittheilungen der deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens in Tokio. (Yokohama, 4to.) K.
- Mt. Kaukas. Mus.*—[Vide *Izv. Kaukas. Mus.*]
- Mt. Mecklenb. geol. Landesanst.*—Mittheilungen aus der Grossherzoglich Mecklenberg geologischen Landesanstalt. (Rostock, 4to.) Ng.
- Mt. Mus. Berlin*—Mittheilungen aus der Zoologischen Sammlung des Museums für Naturkunde in Berlin. (Berlin, 4to.) Nz. K. Z. C.
- Mt. Mus. Hamburg*—Mittheilungen aus dem naturhistorischen Museum in Hamburg. Beiheft zum Jahrbuch der Hamburgischen wissenschaftlichen Anstalten. (Hamburg, 8vo.) N. K. R. Z. C.
- Mt. Mus. Hildesheim*—Mittheilungen aus dem Roemer-Museum Hildesheim. (Hildesheim, 4to.) N.
- Mt. Mus. Ludwig Salvator*—[Vide *Numquam ot.*]
- Mt. Musver. Krain*—Mittheilungen des Musealvereins für Krain. (Laibach, 8vo.) N.
- Mt. Nat.-Kab. Stuttgart*—Mittheilungen aus dem Kgl. Naturalien-Kabinet zu Stuttgart. [Reprints from other periodicals.] (Stuttgart, 8vo.) N.
- Mt. ornith. Ver. Wien*—Mittheilungen des ornithologischen Vereins in Wien. "Die Schwalbe." (Wien, 4to.) Z.
- Mt. Osterlande*—Mittheilungen aus dem Osterlande. Herausgegeben von der naturforschenden Gesellschaft des Osterlandes zu Altenburg i. S.-A. Neue Folge. (Altenburg i. S.-A., 8vo.) N.
- Mt. Pollichia*—Mittheilungen der Pollichia, eines naturwissenschaftlichen Vereins der Rheinpfalz. (Dürkheim, 8vo.) N. L. C.
- Mt. Schweiz. ent. Ges.*—Mittheilungen der Schweizerischen entomologischen Gesellschaft. Bulletin de la Société entomologique Suisse. (Schaffhausen, 8vo.) Nz. Z. L. C.
- Mt. Schweiz. geol. Ges.*—[Vide *Eclog. geol. Helvet.*]
- Mt. Stat. Neapel*—Mittheilungen aus der zoologischen Station zu Neapel. (Berlin, 8vo.) Nz. K. R. Z. C, b, p. O.
- Mt. Thurgau. Ges.*—Mittheilungen der thurgauischen naturforschenden Gesellschaft. (Frauenfeld, 8vo.) N.
- Mt. Ungar. geol. Anstalt*—Mittheilungen aus dem Jahrbuche der k. ungarischen geologischen Anstalt. [German edition of *Magyar Fold. int. evkon.*] (Budapest, 8vo.) Ng. R. (C) g.
- Mt. Ver. Erdk. Leipzig*—Mittheilungen des Vereins für Erdkunde zu Leipzig. (Leipzig, 8vo.) Ng. C.
- Mt. Ver. Frankfurt*—[Vide *Helios.*]
- Mt. Ver. Krain*—Mittheilungen des Musealvereines für Krain. Zweite Abtheilung: Naturkundlicher Theil. (Laibach, 8vo.) N.
- Mt. Ver. Steiermark*—Mittheilungen des naturwissenschaftlichen Vereines für Steiermark. (Graz, 8vo.) N. R. L.
- Mt. Ver. Vorpomm.*—Mittheilungen aus dem naturwissenschaftlichen Verein für Neu-Vorpommern und Rügen in Greifswald. (Berlin, 8vo.) N. K. C.

- Munchen. Kol. Zeitschr.*—Münchener Koleopterologische Zeitschr. Organ für allgemeine Systematik der Koleopteren und für die Kolepteren-Fauna der paläarktischen Region. (München, 8vo.) Z.
- Museums J.*—The Museums Journal, the organ of the Museums Association. (London, 8vo.) N. Z. O. (C) g, z.
- Nachrbl. Deutsch. malak. Ges.*—Nachrichtenblatt der deutschen malakozoologischen Gesellschaft. (Frankfurt-a-M., 8vo.) Nz. Z. C.
- Nachr. Ges. Göttingen*—Nachrichten von der königl. Gesellschaft der Wissenschaften und der Georg Augusts Universität zu Göttingen. (Göttingen, 8vo.) N. R. Z. L. C, p. O.
- N. Acta Ac. L.-C. Nat. cur.*—[Vide *Acta Ac. German.*]
- N. Acta Soc. Upsal.*—[Vide *Acta Soc. Upsal.*]
- N. Arch. Mus. Paris*—[Vide *Arch. Mus. Paris.*]
- Naturæ nov.*—Naturæ novitates. [A bookseller's list.] (Berlin, Friedländer, 8vo.) N. K. Z. L. (C) p. O.
- Natural. Canad.*—Le Naturaliste Canadien. Bulletin de recherches, observations et découvertes se rapportant à l'histoire naturelle du Canada. (Chicoutimi, 8vo.) N. Z.
- Naturaleza*—La Naturaleza. Periódico científico de la Sociedad mexicana de Historia natural. Segunda serie. (Mexico, 4to.) N.
- Naturalist*—The Naturalist, a monthly journal of Natural History for the North of England. (London, 8vo.) N. R. Z. L. C, g.
- Naturaliste*—Le Naturaliste. (Paris, 8vo.) Nz. Z.
- Natural. Sicil.*—Il Naturalista Siciliano. Organo della Società dei Naturalisti Siciliani. (Palermo, 4to.) N. Z.
- Nature*—Nature: a weekly illustrated Journal of Science. (London, 12mo.) N. K. R. Z. L. C, b, p, g. O.
- Nature (La)*—La Nature. Revue des Sciences. (Paris, 8vo.) K. Z.
- Naturen*—Naturen. Illustreret månedsskrift for populær naturvidenskab. Udg. Bergens museum. (Kjøbenhavn, 8vo.) Z. L.
- Nature Notes*—Nature Notes. The Selborne Society's Magazine. (London, 8vo.) N. K. Z. L. C. O.
- Naturw. Wochenschr.*—Naturwissenschaftlichen Wochenschrift. (Jena, 4to.) K.
- Naturw. Zeitschr. Land. Forst.*—Naturwissenschaftliche Zeitschrift für Land- und Forstwirtschaft. (Stuttgart, 8vo.)
- Natuurk. Tijdschr. Nederl. Ind.*—Natuurkundig Tijdschrift voor Nederlandsch-Indie. (Batavia, 8vo.) N. K. R. Z. L. (C) p.
- Natuurk. Verhand. Haarlem*—Natuurkundige Verhandelingen van de Hollandsche Maatschappij der Wetenschappen te Haarlem. Derde Verzameling. (Haarlem, 4to.) N. R. Z.
- Nautilus*—The Nautilus: a monthly journal devoted to the interests of Conchologists. (Philadelphia, 8vo.) Nz. Z.
- N. Denk. Schweiz. Ges.*—[Vide *Denk. Schweiz. Ges.*]
- Neptunia*—Neptunia, an Italian Fishery Journal. (Venezia.)

- Neujahrsbl. Naturf. Ges.*—Neujahrsblatt herausgegeben von der Naturforschenden Gesellschaft. (Zürich, 8vo.) N. R. L. (C) p.
- N. Jahrb. Min.*—Neues Jahrbuch für Mineralogie, Geologie, und Paläontologie. (Stuttgart, 8vo.) Ng. K. R. O.
- N. Mem. Soc. Helvet.*—[Vide *Denk. Schweiz. Ges.*]
- N. Mem. Soc. imp. Moscou*—[Vide *Mem. Soc. Moscou.*]
- Norges geol. Undersog.*—Norges geologiske Undersøgelse. (Kristiania, 8vo.) Ng.
- Norske Fred. Univ. Progr.*—[Vide *Progr. Norske Fred. Univ.*]
- Norske Selsk. Skr.*—Det Kongelige Norske Videnskabers Selskabs Skrifter. (Thronhjelm, 8vo.) N. R.
- North Amer. Fauna*—U. S. Department of Agriculture. Division of Ornithology and Mammalogy. North American Fauna. (Washington, 8vo.) Nz. K. Z. L. R. (C) p. O.
- Notes Leyden Mus.*—Notes from the Leyden Museum. (Leyden, 8vo.) Nz. Z. L. C. O.
- Notes Manchest. Mus.*—Notes from the Manchester Museum. (Manchester, 8vo.) N.
- Notizbl. Ver. geol. Landesanst. Darmstadt*—Notizblatt des Vereins für Erdkunde und der Grossh. geologischen Landesanstalt zu Darmstadt. (Darmstadt, 8vo.) N. K.
- Nouvelles Archives des Missions scientifiques, &c.*—[Vide *Arch. miss. Sci.*]
- Nov. Zool.*—Novitates Zoologicae. A journal of Zoology. (Tring, 8vo.) Nz. Z. O. C, z.
- Nyt Mag. Naturv.*—Nyt Magazin for Naturvidenskaberne. (Christiania, 8vo.) N. K. R. Z. C.
- § *Obit. R. Soc. London*—Obituary notices of Fellows of the Royal Society. (London, 8vo.) N. K. R. Z. L. C, p. O.
- Ofv. Ak. Forh.*—Öfversigt af k. Vetenskaps-Akademien. Förhandlingar. (Stockholm, 8vo.) N. R. Z. L. (C) p. O.
- Ofv. Finska Forh.*—Öfversigt af Finska Vetenskaps-Societetens Förhandlingar. (Helsingfors, 8vo.) N. R. Z. (C) p.
- Ohio Natural.*—The Ohio Naturalist. Published by the biological club of the Ohio State University. (Columbus, 8vo.) N.
- Ornith. Centralbl.*—Ornithologisches Centralblatt. Organ für Wissenschaft und Praxis. Beiblatt zum Journal für Ornithologie. (Leipzig, 4to.)
- Ornith. Jahrb.*—Ornithologisches Jahrbuch. Organ für das palæarktische Faunengebiet. (Hallein, 8vo.) N. Z.
- Ornith. Monber.*—Ornithologische Monatsberichte: herausgegeben von Dr A. Reichenow. (Berlin, 8vo.) Nz. Z. C.
- Ornith. Monschr. Schutze*—Ornithologische Monatschrifte des deutschen Vereins zum Schutze der Vogelwelt. (Wurzburg, 8vo.) Nz. Z.
- Ornith. Ool.*—The Ornithologist and Oologist. (Hyde Park, Mass., 8vo.) Z.
- Ottawa Natural.*—The Ottawa Naturalist. The Transactions of the Ottawa Field-Naturalists' Club. (Ottawa, 8vo.) N. L.
- Ov. Danske Selsk.*—Oversigt over det k. Danske Videnskabernes Selskabs Forhandlingar. (Copenhagen, 8vo.) N. K. R. Z. C, p. O.

- P. Ac. Amsterdam*.—Proceedings of the Royal Academy of Sciences, Amsterdam. [Translation of Versl. Ak. Amsterdam, q. v.] N. K. R. L. C, p.
- P. Ac. Philad.*—Proceedings of the Academy of Natural Sciences of Philadelphia. (Philadelphia, 8vo.) N. R. Z. L. C, b, p. O.
- P. Agric. Soc. India.*—[Vide *J. Agric. Soc. India.*]
- Pal. Abh.*—Palæontologische Abhandlungen. (Jena, 4to.) Ng. K. O.
- Palæontogr.*—Palæontographica. Beitræge zur Naturgeschichte der Vorzeit. (Stuttgart, 4to.) Ng. R. C. O.
- Palæontogr. ital.*—Palæontographia italica. Memorie di Paleontologia pubblicate per cura del Prof. Mario Canavari. (Pisa, 4to.) Ng. C. O.
- Pal. Bull.*—Palæontological Bulletin. [Extracts from *P. Amer. Phil. Soc.*] (Philadelphia, 8vo.)
- Pal. franc.*—Paléontologie française ou description des fossiles de la France. (Paris, 8vo.) Ng. K. R.
- Pal. Ind.*—Palæontologia indica: [also with title Memoirs of the Geol. Survey of India, but a separate work from our *Mem. geol. Surv. Ind.*] (Calcutta, 4to.) Ng. R. Z. L. (C) p, g. O.
- Pal. Mon. Carte geol. Alger.*—Carte géologique de l'Algérie. Paléontologie Monographies. (Alger, 4to.) Ng.
- Pal. Soc. Mon.*—Palæontographical Society Monographs. (London, 8vo.) Ng. K. R. Z. L. (C) p. O.
- Pam. Ak. Krakow.*—Pamiętnik Akademii Umiejetnosci w Krakowie, Wydział matematyczno-przyrodniczy. (Krakowie, 4to.) N.
- P. Amer. Ac.*—Proceedings of the American Academy of Arts and Sciences. (Boston, 8vo.) N. K. R. Z. L. C, p. O.
- P. Amer. Ass.*—Proceedings of the American Association for the advancement of Science. (Salem, 8vo.) N. K. R. Z. L. C, p. O.
- P. Amer. Phil. Soc.*—Proceedings of the American Philosophical Society. (Philadelphia, 8vo.) N. K. R. Z. L. C, b, p. O.
- Pam. Fizyjoogr.*—Pamiętnik Fizyjograficzny. Dział II. Geologija z Chemija. Dział III. Botanika i Zoologija. (Warszawa, 4to.) N.
- Pap. Boston Soc.*—Occasional papers of the Boston Society of Natural History. (Boston, 8vo.) N. K. R. Z. (C) p. O.
- Pap. B. P. Bishop Mus.*—Occasional papers of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and natural history. (Honolulu, 8vo.) C.
- Pap. Calif. Ac.*—Occasional papers of the California Academy of Sciences. (San Francisco, 8vo.) N. K. R. (C) p.
- Pap. Minnesota Ac.*—The Minnesota Academy of Natural Sciences at Minneapolis, Minn. Occasional papers. (Minneapolis, 8vo.) N.
- Pap. Ohio Ac.*—Ohio State Academy of Science. Special Papers. (Wooster, 8vo.) N.
- Pap. Soc. Brit. Columb.*—Papers and communications read before the Natural History Society of British Columbia. (Columbia, 8vo.) N.

- Pap. Soc. Wisconsin*—Occasional papers of the Natural History Society of Wisconsin. (Milwaukee, 8vo.) N. O.
- P. Asiat. Soc. Bengal*—Proceedings of the Asiatic Society of Bengal. (Calcutta, 8vo.) N. K. R. Z. L. C, p.
- P. Ass. Meriden*—[Vide *Tr. Ass. Meriden*.]
- P. Bath Club*—Proceedings of the Bath Natural History and Antiquarian Field Club. (Bath, 8vo.) N. L. C.
- P. Birmingh. Soc.*—Proceedings of the Birmingham Natural History and Philosophical Society. (Birmingham, 8vo.) N. R. Z. L. C, p. O.
- P. Boston Soc.*—Proceedings of the Boston Society of Natural History. (Boston, U.S., 8vo.) N. K. R. Z. L. C, b, p. O.
- P. Bristol Soc.*—Proceedings of the Bristol Naturalists' Society. (Bristol, 8vo.) N. Z. L.
- P. Calif. Ac.*—Proceedings of the California Academy of Sciences. Third series. Zoology. Geology. (San Francisco, 8vo.) N. K. R. Z. L. (C) p.
- P. Cambridge Soc.*—Proceedings of the Philosophical Society, Cambridge. (Cambridge, 8vo.) N. K. R. Z. L. C, p. O.
- P. Canad. Inst.*—Proceedings of the Canadian Institute. New Series (Toronto, 8vo.) N. R. L. (C) p.
- P. Chester Soc.*—Proceedings of the Chester Society of Natural Science and Literature. (Chester, 8vo.) N. L.
- P. Colorado Soc.*—Proceedings of the Colorado Scientific Society. (Denver, 8vo.) N.
- P. Cotteswold Club*—Proceedings of the Cotteswold Naturalists' Field Club. (Gloucester, 8vo.) N. R. C.
- P. Croydon Club*—Proceedings and Transactions of the Croydon Microscopical and Natural History Club. (Croydon, 8vo.) N.
- P. Davenport Ac.*—Proceedings of the Davenport Academy of Natural Sciences. (Davenport, 8vo.) Nz. Z.
- P. Dorset Club*—Proceedings of the Dorset natural history and antiquarian Field Club. (Dorchester, 8vo.) N. Z. L.
- P. Dublin Soc.*—The Scientific Proceedings of the Royal Dublin Society. New series. (Dublin, 8vo.) N. K. R. Z. L. C, p. O.
- P. Ealing Soc.*—[Vide *Rep. Ealing Soc.*]
- P. East Scotland Soc.*—Proceedings of the East of Scotland Union of Naturalists' Societies. (Perth, 8vo.) N.
- § *Pennsylv. Dep. Agric. Bull. Zool.*—Pennsylvania State department of Agriculture. The monthly Bulletin of the division of Zoology. (Harrisburg, 8vo.) Z. (C) z.
- § *Pennsylv. Dep. Agric. zool. Quart.*—Pennsylvania Department of Agriculture. The zoological Quarterly. (Harrisburg, 8vo.) Z. (C) z.
- P. ent. Soc. London*—The Proceedings of the entomological Society of London. [Published with *Tr. ent. Soc. Lond.*] (London, 8vo.) Nz. R. Z. L. C, p. O.
- P. ent. Soc. Washington*—Proceedings of the entomological Society of Washington. (Washington, 8vo.) Nz. Z.

Pflüger's Archiv—[Vide *Arch. ges. Physiol.*]

P. Folkestone Soc.—Proceedings of the Folkestone natural history Society. (Folkestone, 8vo.) N.

P. Geol. Ass.—Proceedings of the Geologists' Association. (London, 8vo.) Ng. K. R. Z. (C) p, g. O.

§ *P. Geol. Soc. London*—Abstracts of the Proceedings of the Geological Society of London. [Partly reissued with *Quart. J. Geol. Soc.*] (London, 8vo.) Ng. L.

P. Hampsh. Club—Papers and Proceedings of the Hampshire Field Club. (Southampton, 8vo.) N. C.

Phil. Trans.—Philosophical Transactions of the Royal Society of London. Series B. (London, 4to.) N. K. R. Z. L. C, p, b. O.

P. Holmesdale Club—Proceedings of the Holmesdale natural history Club. (London, 8vo.) N.

P. Indiana Ac.—Proceedings of the Indiana Academy of Science. (Brookville, 8vo.) N. Z.

P. Inst. Trinidad—Proceedings of the Victoria Institute of Trinidad. (Port-of-Spain, 8vo.) N.

P. Iowa Ac.—Proceedings of the Iowa Academy of Sciences. (Des Moines, 8vo.) N.

P. Irish Ac.—Proceedings of the Royal Irish Academy. Third series. Section B, biological, geological and chemical science. (Dublin, 8vo.) N. K. R. Z. L. C, p. O.

P. Linn. Soc. London—Proceedings of the Linnean Society of London. (London, 8vo.) Nz. K. R. Z. L. C, p. O.

P. Linn. Soc. N. S. Wales—Proceedings of the Linnean Society of New South Wales. Second series. (Sydney, 8vo.) N. R. Z. L. C, b, p. O.

P. Liverp. biol. Soc.—Proceedings and Transactions of the Liverpool biological Society. (Liverpool, 8vo.) N. K. R. Z. (C) b.

P. Liverp. Club—Proceedings of the Liverpool Naturalists' Field Club. (Liverpool, 8vo.) N.

P. Liverp. geol. Soc.—Proceedings of the Liverpool geological Society. (Liverpool, 8vo.) Ng. R. C.

P. Liverp. lit. Soc.—Proceedings of the literary and philosophical Society of Liverpool. (London & Liverpool, 8vo.) N. K. Z. L.

P. London Amateur Soc.—Proceedings of the London Amateur Scientific Society. Metropolitan Association and Society of Amateur Geologists. (London, 8vo.) N. K. C.

P. Malac. Soc. London—Proceedings of the Malacological Society of London. (London, 8vo.) N. K. Z. C.

P. Manchester Soc.—[Included in *Mem. Manchester Soc.*, q.v.]

P. Nat. Hist. Soc. Glasgow—[Vide *Tr. Soc. Glasgow.*]

P. New England Zool. Club—Proceedings of the New England Zoological Club. (Boston, Mass., 8vo.) Nz.

P. Newport Soc.—Proceedings of the Newport natural history Society. (Newport, 8vo.) N.

- P. Nova Scotian Inst.*—Proceedings and Transactions of the Nova-Scotian Institute of Science. Second series. (Halifax, 8vo.) N. R. L. C, p.
- P. N. Zealand Inst.*—[Vide *Tr. N. Zealand Inst.*]
- Polnisches Arch.* [Vide *Arch. polon.*]
- § *Pop. Sci. Month.*—The Popular Science Monthly. (New York, 8vo.) (C) y.
- Potfuz. Termes. Kozl.*—Pótfüzetek a Természettudományi Közlönyhöz
Kiadja a K. M. Természettudományi Társulat. [Supplement to *Termes. Közl.*] (Budapest, 8vo.) N.
- Pozson. Orvos*—[Vide *Verh. Ver. Presburg.*]
- P. Perthsh. Soc.*—[Vide *Tr. Perthsh. Soc.*]
- P. Phil. Soc. Glasgow*—Proceedings of the Philosophical Society of Glasgow. (Glasgow, 8vo.) N. K. R. L. C, p.
- P. Phys. Soc. Edinb.*—Proceedings of the Royal Physical Society of Edinburgh. (Edinburgh, 8vo.) N. K. R. Z. L. C, p. O.
- P. Portland Soc.*—Proceedings of the Portland Society of Natural History. (Portland, 8vo.) N.
- Preisschr. Ges. Leipzig*—Preisschriften gekrönt und herausgegeben von der fürstlich Jablonowski'schen Gesellschaft zu Leipzig. (Leipzig, 8vo.) N. R. C.
- § *P. Rhodesia Ass.*—Proceedings of the Rhodesia Scientific Association. (Bulawayo, 8vo.) N. R. Z.
- P. R. Inst. Brit.*—Notices of the Proceedings at the Meetings of the Members of the Royal Institution of Great Britain, with abstracts of the discourses delivered at the evening meetings. (London, 8vo.) N. K. R. Z. L. C, p. O.
- P. Rochester Acad.*—Proceedings of the Rochester Academy of Science. (Rochester, N.Y.) N. R. Z. (C) p.
- Progr. Norske Fred. Univ.*—Det Kgl. Norske Frederiks Universitet. Universitet's Program. (Christiania, 8vo.) (C) p.
- § *Protok. Ges. Jurjew* [or *Dorpat*].—[See *SB. Ges. Jurjew.*]
- Protok. Obshch. Varshav.*—Trudui Varshavskagho Obshchestva, estestvoispuitatelei. Protokolui otdyeleniya biologhiï. [Called also] Travaux de la Société des naturalistes de Varsovie. Comptes-rendus de la Section biologique. (Varsovie, 8vo.) N. Z.
- Protok. Kazan. Univ.*—Protokolui zasyedaniï obshchestva estestvoispuitatelei pri imperatorskom Kazanskom Universitetye. (Kazan, 8vo.) N.
- Protok. St. Peterb. Obshch.*—Protokolui zasyedaniï imperatorskagho S.-Peterburghskagho Obshchestva estestvoispuitatelei. [Called also] Comptes-rendus des Séances de la Société impériale des Naturalistes de St. Pétersbourg [and forms one section of *Trav. Soc. St. Petersb. q.v.*] (St. Petersburg, 8vo.) N.
- P. R. Soc. Canada*—[Vide *Tr. R. Soc. Canada.*]
- P. R. Soc. Edinb.*—Proceedings of the Royal Society of Edinburgh. (Edinburgh, 8vo.) N. K. R. Z. L. C, p. O.
- P. R. Soc. London*—Proceedings of the Royal Society of London. Series B. (London, 8vo.) N. K. R. Z. L. C, p. O.

- Pr. verb. malac. Belgique*—Procès-verbaux des séances de la Société royale malacologique de Belgique. [Reappears later, with a different number to the volume, as *Bull. Soc. malac. Belgique*, q.v.] (Bruxelles, 8vo.) Nz. K. R. Z. L.
- Pr. verb. Soc. Belge Geol.*—[Vide *Bull. Soc. Belge Geol.*]
- Pr. verb. Soc. Linn. Bordeaux*—Procès-verbaux de la Société Linnéenne de Bordeaux. [Called also *Extraits des comptes rendus des Séances de la Soc. Linn. Bordeaux.*] (Bordeaux, 8vo.) N. Z. C.
- Pr. verb. Soc. Sci. Bordeaux*—Procès-verbaux des séances de la Société des Sciences physiques et naturelles de Bordeaux. (Bordeaux, 8vo.) N. R. L. (C) p.
- Pr. verb. Soc. Toscana*—Atti della Società Toscana di Scienze Naturali residente in Pisa. Processi verbali. [Vide *Atti Soc. Tosc.*] (Pisa, 8vo.) N.
- P. Scott. Micr. Soc.*—Proceedings of the Scottish Microscopical Society. (Edinburgh, 8vo.) Z. (C) p.
- P. Soc. Montreal*—[Vide *Canad. Rec.*]
- P. Soc. Queensland*—Proceedings of the Royal Society of Queensland. (Brisbane, 8vo.) N. R. Z. (C) p.
- P. Soc. Tasmania*—Papers and Proceedings of the Royal Society of Tasmania. (Hobart, 8vo.) N. K. R. Z. L.
- P. Soc. Victoria*—Proceedings of the Royal Society of Victoria. New series. (Melbourne, 8vo.) N. K. R. Z. L. C, b, p. O.
- P. Soc. Washington*—Proceedings of the Biological Society of Washington. (Washington, 8vo.) N. Z. O.
- P. Somersetsh. Soc.*—Somersetshire archæological and natural history Society. Proceedings. New series. (Taunton, 8vo.) N. C.
- P. South London Soc.*—Proceedings of the South London entomological and Natural history Society. (London, 8vo.) N. Z. L. C.
- P. Suffolk Inst.*—Proceedings of the Suffolk Institute of Archaeology and Natural History. (Ipswich, 8vo.) N. C.
- Psyche*—Psyche, a Journal of Entomology. Published by the Cambridge Entomological Club. (Cambridge, U.S., 4to.) Nz. Z.
- § *P. Tokyo Mus.*—Proceedings of the department of Natural History Tokyo Imperial Museum. (Tokyo, 4to.) Z. (C) z.
- Publ. Adamachi Ac. Romana*—Academia Româna. Publicațiunile fondului Vasilie Adamachi. (Bucuresci, 8vo.) N.
- § *Publ. Carnegie Inst.*—Carnegie Institute of Washington publications. (Washington, 4to and 8vo.) R. (C) p. O.
- Publ. Carnegie Mus.*—Publications of the Carnegie Museum. [Consists of *Annals and Memoirs*, qq. v.]
- Publ. Inst. Luxembourg*—Publications de l'Institut grand-ducal de Luxembourg. Section des Sciences Naturelles et Mathématiques. (Luxembourg, 8vo.) N. R.
- Publ. internat. expl. Mer*—Conseil permanent pour l'exploration de la Mer. Publications de circonstance. (Copenhagen, 8vo.) Nz. R. Z. (C) b. O.
- Publ. Iowa Geol. Surv.*—Publications of the Iowa Geological Survey. (Des Moines, 4to.) C.

- P. Univ. Durham Soc.*—Proceedings of the University of Durham Philosophical Society. (Newcastle-upon-Tyne, 8vo.) C, p.
- P. U. S. Mus.*—Proceedings of the United States National Museum. (Washington, 8vo.) N. K. R. L. Z. C, b, p. O.
- P. Warwicksh. Club*—Proceedings of the Warwickshire Naturalists' and Archæologists' Field Club. (Warwick, 8vo.) N. R. L.
- P. Washington Ac.*—Proceedings of the Washington Academy of Sciences. (Washington, 8vo.) N. R. Z. L. (C) p.
- P. Yorksh. geol. Soc.*—Proceedings of the Yorkshire geological and polytechnic Society. (Halifax, 8vo.) Ng. C, p. O.
- P. Zool. Soc. London* [or *P. Z. S.*]—Proceedings of the Scientific Meetings of the Zoological Society of London. (London, 8vo.) Nz. K. R. Z. L. C, p. O.
- Quart. J. Geol. Soc.*—The Quarterly Journal of the Geological Society. (London, 8vo.) Ng. K. R. Z. L. C, p, g. O.
- Quart. J. Micr. Sci.*—The Quarterly Journal of Microscopical Science. (London 8vo.) N. K. R. Z. L. C, b, p. O.
- Queensland Agric. J.*—Queensland Agricultural Journal. (Brisbane, 8vo.) Nz.
- Rabot. Lab. Warsaw*—Rabotui iz Laboratorii zoologicheskagho Kabineta imperatorskagho Varshavskagho Universiteta. (Varshava, 8vo.)
- Rad Jugoslav. Ak.*—Rad Jugoslavske akademije znanosti i umjetnosti. [Transactions of the South Slav Academy of Art and Science.] (Zagreb, 8vo.) N.
- Rapp. internat. expl. Mer*—Conseil permanent international pour l'exploration de la Mer. Rapports et procès-verbaux des réunions. (Copenhagen, 4to.) Nz. R. Z. (C) b. O.
- Rass. geol. Italia*—Rassegna delle Scienze geologiche in Italia. (Roma, 8vo.) Ng. R.
- Rec. Albany Mus.*—Records of the Albany Museum. (Grahamstown, 8vo.) N. R. Z. L. (C) p. O.
- Rec. Austral. Mus.*—Records of the Australian Museum. (Sydney, 8vo.) N. K. R. Z. L. C.
- Rec. Egypt. School Med.*—Ministry of public instruction. Records of the Egyptian Government School of Medicine. (Cairo, 4to.) (C) p.
- Rec. Geol. Survey N. S. Wales*—Records of the Geological Survey of New South Wales. (Sydney, 8vo.) Ng. R. L. C.
- Redia*—"Redia" Giornale di Entomologia. (Portici, 8vo.) Nz. Z. C, b. O.
- Rend. Acc. Bologna*—Rendiconto delle seesioni della R. Accademia delle scienze dell' istituto de Bologna. Nuova serie. (Bologna, 8vo.) N. R. C.
- Rend. Acc. Lincei*—Atti della Reale Accademia dei Lincei. Rendiconti. (Roma, 4to.) N. K. R. Z. L. C, p. O.
- Rend. Acc. Napoli*—Rendiconto dell' Accademia delle Scienze fisiche e matematiche. (Sezione della Società reale di Napoli.) Serie 3^a. (Napoli, 4to.) N. R. L. C, p. O.

- Rend. Ist. Lombardo*—Reale istituto Lombardo delle Scienze e Lettere. Rendiconti. (Milano, 8vo.) N. R. C, p.
- Rep. Agric. exp. Stat. California*—University of California publications. Report of work of the Agricultural experiment station of the University of California. (Sacramento, 8vo.) (C) p.
- Rep. Amer. Mus.*—The American Museum of Natural History. Annual Report. (New York, 8vo.) N. K. Z. (C) p.
- § *Rep. Ashmolean Soc.*—Ashmolean Natural History Society of Oxfordshire. Report. (Oxford, 8vo.) N. O.
- Rep. Australas. Ass.*—Report of the Australasian Association for the Advancement of Science. (Sydney, 8vo.) N. K. R. L. C, p. O.
- Rep. Barrow Club*—Barrow Naturalists' Field Club and Literary and Scientific Association. Annual Report and Proceedings. (Barrow-in-Furness, 8vo.) N. C.
- Rep. Belfast Club*—Annual Report and Proceedings of the Belfast Naturalists' Field Club. (Belfast, 8vo.) N. L.
- Rep. Belfast Soc.*—Report and Proceedings of the Belfast natural history and philosophical Society. (Belfast, 8vo.) N. Z. L. (C) p.
- Rep. Brighton Soc.*—Brighton and Sussex Natural History and Philosophical Society. Abstract of papers read before the Society, together with the Annual Report. (Brighton, 8vo.) N. R.
- Rep. Brit. Ass.*—Report of the British Association for the Advancement of Science. (London, 8vo.) N. K. R. Z. L. C, p. O.
- Rep. Canad. Inst.*—Annual Report of the Canadian Institute, being an appendix to the report of the Minister of Education, Ontario. (Toronto, 8vo.) N. R. L. (C) p.
- Rep. Cardiff Soc.*—Cardiff Naturalists' Society. Report and Transactions. (Cardiff, 8vo.) N. R. C.
- Rep. Cheltenham Coll. Soc.*—Cheltenham College Natural History Society. Report. (Cheltenham, 8vo.) N.
- Rep. Chester Soc.*—Chester Society of Natural Science and Literature. Annual Report. (Chester, 8vo.) N. L.
- Rep. Cornell Stat.*—Report of the Cornell University Experiment Station.
- Rep. Cornwall Soc.*—Royal Cornwall Polytechnic Society. Annual Report. (Falmouth, 8vo.) N. K. R. L. C.
- Rep. Dep. Agric. Brisbane*—Annual Report of the department of Agriculture. [Consists chiefly of *Bull. Dep. Agric. Brisbane*, q.v.] (Brisbane, 8vo.) Nz. O.
- Rep. Devon. Ass.*—Report and Transactions of the Devonshire Association for the advancement of Science. (Plymouth, 8vo.) N. K. R. L. C. O.
- Rep. Ealing Soc.*—Report and Proceedings of the Ealing Natural Science and Microscopical Society. (Ealing, 8vo.) N. L. C.
- Rep. ent. Soc. Ontario*—Annual Report of the entomological Society of Ontario. (Toronto, 8vo.) Nz. Z. L. C. O.
- Rep. Epsom Soc.*—Epsom College Natural History Society. Report. (London, 8vo.) N.

- Rep. Felsted Soc.*—Report of the Felsted School scientific Society. (Chelmsford, 8vo.) N. L.
- Rep. Fish. Board Scotland*—Annual Report of the Fishery Board for Scotland. (Edinburgh, 8vo.) Nz. K. Z. C, b.
- Rep. geol. Comm. C. G. H.*—Cape of Good Hope. Department of Agriculture. Annual Report of the Geological Commission. (Cape Town, 8vo.) Ng. K.
- Rep. geol. N. Zealand*—Colonial Museum and Geological Survey of New Zealand. Reports of Geological Explorations. (Wellington, 8vo.) Ng. R.
- Rep. geol. Surv. Canada*—Geological Survey of Canada. Annual Report. (Ottawa, 8vo.) Ng. K. R. Z. L. C, p.
- Rep. geol. Surv. India*—General Report of the work carried on by the geological Survey of India. (Calcutta, 8vo.) Ng. R. Z. L. C, p. O.
- Rep. geol. Surv. Iowa*—Iowa Geological Survey. Annual Report. (Des Moines, 8vo.) Ng. K. (C) p.
- Rep. geol. Surv. Michigan*—[Vide *Geol. Surv. Michigan*.]
- Rep. geol. Surv. Natal*—Natal Surveyor-General's Department. First report of the geological Survey of Natal and Zululand. (Pietermaritzburg, 8vo.) Ng.
- Rep. geol. Surv. New Jersey*—Geological Survey of New Jersey. Annual Report of the State geologist. (Trenton, 8vo.) Ng. K.
- Rep. geol. Surv. Texas*—Annual Report of the Geological Survey of Texas. (Austin, 8vo.) Ng.
- Rep. Guernsey Soc.*—Guernsey Society of Natural Science and Local Research. Report and Transactions. (Guernsey, 8vo.) N.
- Rep. Indiana Geol.*—Indiana, Department of Geology and Natural Resources. Annual Report. (Indianapolis, 8vo.) Ng.
- Rep. Ins. Illinois*—Report of the State Entomologist on the Noxious and Beneficial Insects of the State of Illinois. (Springfield, 8vo.) Nz.
- Rep. Iowa Ac.*—[Vide *P. Iowa Ac.*]
- Rep. Liverp. Ass.*—Liverpool Science Students' Association. Annual Report and Proceedings. (Liverpool, 8vo.) N.
- Rep. Manchester Micr. Soc.*—[Vide *Tr. Manchester Micr. Soc.*]
- Rep. Marlbor. Soc.*—Report of the Marlborough College natural history Society. (Marlborough, 8vo.) N. L.
- § *Rep. Michigan Ac.*—Annual Report of the Michigan Academy of Science. (Lansing, 8vo.) (C) p.
- Rep. Mus. Harvard*—Annual report of the Curator of the Museum of Comparative Zoölogy at Harvard College to the President and Fellows of Harvard College. (Cambridge, Mass., 8vo.) Nz. R. Z. L. (C) p. O.
- Rep. Mus. Milwaukee*—Annual Report of the Board of Trustees of the Public Museum of the City of Milwaukee. (Milwaukee, 8vo.) N. K. O.
- Rep. New York Zool. Soc.*—Annual Report of the New York Zoological Society chartered in 1895. (New York, 8vo.) Nz. Z

- Rep. North Staffordsh. Club*—North Staffordshire Naturalists' Field Club and Archæological Society. Annual Report and Transactions. (Newcastle-under-Lyme, 8vo.) N.
- Rep. N. York Mus.*—University of the State of New York. New York State Museum. Annual Report of the Regents. (Albany, 8vo.) N. K. R. L.
- Rep. Ohio Ac.*—Annual report of the Ohio State Academy of Science. (Columbus, 8vo.) N.
- Rep. Penzance Soc.*—Penzance natural history and antiquarian Society. Report and Transactions. (Plymouth, 8vo.) N. L. C.
- Rep. Plymouth Inst.*—Annual Reports and Transactions of the Plymouth Institution and Devon and Cornwall natural history Society. (Plymouth, 8vo.) N. R. Z. L.
- Rep. Reading Soc.*—Reading literary and scientific Society Report and Proceedings. (Reading, 8vo.) N.
- Rep. Rugby Soc.*—Report of the Rugby School natural history Society. (Rugby, 8vo.) N. K. L. (C) p.
- Rep. S. Afric. Ass.*—Report of the S. African Association for the advancement of Science. (Cape Town, 8vo.) N. R. Z. L. (C) p.
- Rep. Secr. Agric.*—Report of the Secretary of Agriculture. (Washington, 8vo.)
- Rep. S. E. Union Soc.*—Report and Transactions of the South Eastern Union of Scientific Societies. (London, 8vo.) N. C.
- Rep. S. London Club*—Annual Report of the South London Microscopical and Natural History Club. (?place of publication, 8vo.) N.
- Rep. Smithsonian. Inst.*—Annual Report of the Board of Regents of the Smithsonian Institution. (Washington, 8vo.) [Videque *Rep. U. S. Mus.*] N. K. R. Z. L. C, b, p. O.
- Rep. Southport Soc.*—The...Report of the Southport Society of Natural Science. (Southport, 8vo.) N.
- Rep. State Rev. Niagara*—Annual report of the Commissioners of the State reservation at Niagara. (Albany, 8vo.) N.
- Rep. Surv. Minnesota*—The Geological and Natural History Survey of Minnesota. Annual Report. (Minneapolis, 4to.) Ng. Z. C. O.
- Rep. U. S. Dep. Agric. Animal Ind.*—U. S. Department of Agriculture. Annual Report of the Bureau of Animal industry. (Washington, 8vo.) Nz. (C) p.
- Rep. U. S. Fish. Comm.*—United States Commission of Fish and Fisheries. Report of the Commissioner. (Washington, 8vo.) Nz. K. R. Z. (C) b. O.
- Rep. U. S. Geol. Surv.*—Annual Report of the United States Geological Survey to the Secretary of the Interior. (Washington, 8vo.) Ng. K. R. Z. L. C, p. O.
- Rep. U. S. Mus.*—Annual Report of the Board of Regents of the Smithsonian Institution. Report of the U. S. National Museum. (Washington, 8vo.) N. K. R. Z. L. C, p. O.
- Rep. Wellington Soc.*—Annual Report of the Wellington College Natural Science Society. (Wellington, 8vo.) N. K.

- Rep. Wincanton Cl.*—Annual Report, Wincanton Field Club. (Wincanton, 8vo.) N.
- Rep. Yorksh. Soc.*—Annual Report of the Council of the Yorkshire Philosophical Society. (York, 8vo.) N. K. R. Z. C.
- Rep. Yorksh. Union*—[Included in *Tr. Yorksh. Union.*]
- Rev. biol. Nord. France*—Revue biologique du Nord de la France. (Lille, 8vo.) N. K. Z. L. (C) b. O.
- Rev. Ent. franc.*—Revue d'Entomologie publiée par la Société française d'Entomologie. (Caen, 8vo.) Nz. Z.
- Rev. gen. Sci.*—Revue générale des Sciences pures et appliquées. (Paris, 8vo.) R. K. (C) p.
- Revist. Argent.*—Revista Argentina de Historia Natural. (Buenos Aires, 8vo.) N. R. Z.
- Revist. chilena*—Revista Chilena de Historia natural. Órgano del Museo de Valparaíso. [Boletín del Museo de Valparaíso is issued with this, but with a separate pagination.] (Valparaíso, 8vo.) N. Z.
- Revist. Col. ital.*—Revista Coleopterologica italiana.
- Revist. Jard. Buenos Ayres*—Revista del Jardín Zoológico de Buenos Ayres. (Buenos Ayres, 8vo.) N.
- Revist. Mus. La Plata*—Revista del Museo de La Plata. (La Plata, 8vo.) N. R. O.
- Revist. Mus. Paulista*—Revista do Musai Paulista publicada por H. von Ihering. (S. Paulo, 8vo.) N. Z.
- Revist. Soc. Ribeiro*—Revista de Sciencias naturaes e sociaes, orgão dos Trabalhos da Sociedade Carlos Ribeiro. (Porto, 8vo.) L.
- Revist. Univ. Venezuela*—Revista científica de la Universidad Central de Venezuela. (Caracas, 4to.) N. L.
- Rev. Mus. Pays-bas*—Muséum d'histoire naturelle des Pays-bas. Revue méthodique et critique des collections déposées dans cet établissement. (Leide, 8vo.) Nz. Z. O.
- Rev. paleozool.*—Revue critique de Paléozoologie. (Paris, 8vo.) Ng.
- Rev. Quest. Sci.*—Revue des Questions scientifiques. Publiée par la Société scientifique de Bruxelles. Troisième série. (Bruxelles, 8vo.) N.
- Rev. Russe Ent.*—Revue Russe d'Entomologie [called also] Russkoe entomologicheskoe Obozryenie. (Jaroslawl, 8vo.) Nz. Z. C.
- Rev. Sci. Bourbonnais*—Revue scientifique du Bourbonnais et du centre de la France. (Moulins, 8vo.) N. Z.
- Rev. Scient.*—Revue Scientifique. [Revue rose.] (Paris, 4to.) N. K. R. Z. C. O.
- Rev. Sci. nat. appl.*—Revue des sciences naturelles appliquées. Bulletin bimensuel de la Société nationale d'acclimatation de France. (Paris, 8vo.) Z.
- Rev. Sci. Nat. Ouest*—Revue des Sciences Naturelles de l'Ouest. (Paris, 8vo.) N.
- Rev. Sci. St. Petersb.*—Revue des Sciences naturelles. Publiée par la Société des Naturalistes à St. Pétersbourg. [Vide *Vyest. est. St. Peterb.*]

- Rev. Suisse Zool.*—Revue Suisse de Zoologie et Annales du Musée d'Histoire Naturelle de Genève, &c. (Genève, 8vo.) Nz. Z. L. C, b. O.
- Ric. Labor. anat. Roma*—Ricerche fatte nel laboratorio di anatomia normale della R. Università di Roma. (Roma, 4to.)
- Riv. Biol. gen.*—Rivista de Biologia generale. (Torino, 8vo.) N.
- Riv. Col. ital.*—Rivista coleotterologica italiana. (Camerino, 8vo.) Nz.
- Riv. ital. Pal.*—Rivista italiana di Paleontologia. (Bologna, 8vo.) Ng.
- Riv. ital. Sci. Nat.*—Rivista italiana di Scienze naturali. (Siena, 8vo.) N.
- Riv. Patol. Veg.*—Rivista di Patologia vegetale. (Firenze, 8vo.) Nb. L. C.
- Riv. Sci. biol.*—Rivista di Scienze biologiche. (Como, 8vo.) N.
- Rochester Natural.*—The Rochester Naturalist: a quarterly Record of the Rochester Naturalists' Club. (Rochester, 8vo.) N.
- Rov. Lapok*—Rovartani Lapok. (Budapest, 8vo.) Nz. Z.
- Rospr. Ak. Krakow*—Rozprawy i Sprawozdania z posiedzeń wydziału matematyczno-przyrodniczego Akademii Umiejętności. (Kraków, 8vo.) N.
- Rozp. Ceske Ak. Praze*—Rozprawy České Akademie Císaře Františka Josefa provědy slovesnost a umění. Třída II. (Praze, 8vo.) N. C, p.
- Rozpr. Ceske Nauk.*—[= *Abh. Bohm. Ges.*, q.v.]
- Russkaya gheologhicheskaya biblioteka*—[Vide *Bibl. geol. Russ.*]
- Russkoe ent. Obozr.*—[Vide *Rev. Russe Ent.*]
- Samm. geol. Mus. Leiden*—Sammlungen des geologischen Reichs-Museums in Leiden. Neue Folge. (Leiden, fol.) Ng. O.
- SB. Ak. Berlin*—Sitzungsberichte der königlich-preussischen Akademie der Wissenschaften zu Berlin. [Vide *Mt. Ak. Berlin.*] (Berlin, 8vo.) N. K. R. Z. L. C, p. O.
- SB. Ak. Munchen*—Sitzungsberichte der mathematisch-physikalischen Classe der k. b. Akademie der Wissenschaften zu München. (München, 8vo.) N. K. R. Z. L. (C) p.
- SB. Ak. Wien*—Sitzungsberichte der mathematisch-naturwissenschaftlichen Classe der kaiserlichen Akademie der Wissenschaften. Abtheilungen I und III. (Wien, 8vo.) N. K. R. Z. L. (Abt. I.) C, g, y. O.
- SB. Bohmisch. Ges.*—Sitzungsberichte der k. Böhmisches Gesellschaft der Wissenschaften. [Called also] *Vestník Královské České Společnosti Nauk.* (Prag, 8vo.) N. K. R. L. C, p.
- SB. Ges. Isis*—Sitzungsberichte und Abhandlungen der naturwissenschaftlichen Gesellschaft "Isis." (Dresden, 8vo.) N. K. Z. C.
- SB. Ges. Jurjew or Dorpat*—Sitzungsberichte der Naturforscher-Gesellschaft bei der Universität Jurjew. (Dorpat, 8vo.) N. Z.
- SB. Ges. Königsb.*—Sitzungsberichte [part of *Schr. Ges. Königsb.*, q.v.]. (Königsberg, 4to.)
- SB. Ges. Leipzig*—Sitzungsberichte der naturforschenden Gesellschaft zu Leipzig. (Leipzig, 8vo.) N. K. Z. C.

- SB. Ges. Marburg*—Sitzungsberichte der Gesellschaft zur Beförderung der gesammten Naturwissenschaften zu Marburg. (Marburg, 8vo.) N. Z.
- SB. Ges. Munchen*—Sitzungsberichte der Gesellschaft für Morphologie und Physiologie in München. (München, 8vo.) N. L. C.
- SB. Ges. naturf. Berlin*—Sitzungsberichte der Gesellschaft naturforschender Freunde zu Berlin. (Berlin, 8vo.) N. Z. (C) p. O.
- § *SB. Ges. Rostock*—Sitzungsberichte der naturforschenden Gesellschaft zu Rostock. Anhang zum Arch. Ver. Mecklenburg [q. v.]
- SB. Ges. Wien*—[Vide *Verh. Ges. Wien*.]
- SB. Ges. Wurzburg*—Sitzungsberichte der physikalisch-medicinischen Gesellschaft zu Würzburg. (Würzburg, 8vo.) N. K. R. Z. L. C, p. O.
- SB. niederrhein. Ges.*—Sitzungsberichte der niederrheinischen Gesellschaft für Natur- und Heilkunde. (Bonn, 8vo.) N. Z. L. C. O.
- SB. Soc. Erlangen*—Sitzungsberichte der physikalisch-medicinischen Societät zu Erlangen. (München, 8vo.) N. R. (C) p.
- SB. Ver. Karlsruhe*—[Vide *Verh. Ver. Karlsruhe*.]
- SB. Ver. Lotos*—Sitzungsberichte des deutschen naturwissenschaftlich-medicinischen Vereines für Böhmen "Lotos" in Prag. (Prag, 8vo.) N.
- Schr. Ges. Danzig*—Schriften der naturforschenden Gesellschaft in Danzig. Neue Folge. (Danzig, 8vo.) N. K. R. Z. C, p. O.
- Schr. Ges. Königsb.*—Schriften der physikalisch-ökonomischen Gesellschaft zu Königsberg in Preussen. [Consists of Abhandlungen and Sitzungsberichte.] (Königsberg, 4to.) N. K. R. L. C, p.
- Schr. Ges. Marburg*—Schriften der Gesellschaft zur Beförderung der gesammten Naturwissenschaften zu Marburg. (Marburg, 8vo.) N. K. R. O.
- Schr. Ver. Harzes*—Schriften des naturwissenschaftlichen Vereins des Harzes in Wernigerode. (Wernigerode, 8vo.) N.
- Schr. Ver. Schleswig-Holst.*—Schriften des naturwissenschaftlichen Vereins für Schleswig-Holstein. (Kiel, 8vo.) N. R. C.
- Science*—Science: a weekly journal. New series. (New York, 4to.) N. K. Z. L. C, b.
- Sci. Mem. India*—Scientific Memoirs by Officers of the Medical and Sanitary departments of the government of India. (Calcutta, 4to.) N. Z. R. L.
- Sci. P. R. Dublin Soc.*—[Vide *P. Dublin Soc.*]
- S.-East. Natural.*—The South-eastern Naturalist. (Canterbury, 8vo.) N. C.
- Skrift. Vid. Christiania*—Skrifter udgivne af Videnskabselskabet i Christiania. (Kristiania, 8vo.) N. R. (C) p.
- Smithson. Collect.*—Smithsonian Miscellaneous Collections. (Washington, 8vo.) N. K. R. Z. L. C, b, p.
- Smithson. Collect. quart.*—Smithsonian miscellaneous collections. Quarterly issue. (Washington, 8vo.) N. K. R. Z. L. (C) p.
- Smithson. Contr.*—Smithsonian Contributions to Knowledge. (Washington, 4to.) N. K. R. Z. L. C, p.

- Smithson. Rep.*—[Vide *Rep. Smithson. Inst.*]
- Soc. ent.*—Societas entomologica. Organ für den internationalen Entomologen-Verein. (Zurich, 4to.) Nz. Z.
- Soc. Pyrenees-or.*—Société agricole, scientifique et littéraire, des Pyrénées-orientales. (Perpignan, 8vo.) N.
- Special Bull. U. S. Mus.*—Smithsonian Institution. United States National Museum. Special Bulletin. (Washington, 4to.) N. K. L. (C) p. O.
- Spolia Zeylan.*—Spolia Zeylanica. Issued by the Colombo Museum Ceylon. (Colombo, 8vo.) N. Nz. R. Z. (C) b.
- Spom. Srpska Ak.*—Srpska Kral'evska Akademije. Spomenik. (Beograd = Belgrade, 4to.) N. R.
- Sprawozd. Kom. Krajo.*—Akademija umiejtnosci w Krakowie. Sprawozdanie Komisji fizyograficznej, oraz materyjaly fizyografii Krajowej. (Kraków, 8vo.) N. Z.
- Stavanger Mus. Aarsb.*—Stavanger Museum. Aarsberetning. (Stavanger, 8vo.) N. K. R. L.
- Stettin Ent. Zeit.*—[Vide *Ent. Zeit. Stettin.*]
- Stud. Colorado Coll.*—Colorado College Studies. Papers read before the Colorado College Scientific Society. (Colorado Springs, 8vo.) N. (C) p.
- Stud. Johns Hopkins Univ.*—Johns Hopkins University, Baltimore. Studies from the Biological Laboratory. (Baltimore, 8vo.) Nz. K. R. C, b, p, y. O.
- Stud. Lab. Dublin Soc.*—Studies of the Marine Laboratory of the Royal Dublin Society. [Reprints from Tr. Dublin Soc.] (Dublin, 4to.) Nz. Z. L.
- Stud. Lab. Nebraska*—Studies from the Zoological Laboratory. The University of Nebraska. (Lincoln, Nebraska, 8vo.) (C) p.
- Stud. Owens Coll.*—Studies in Biology from the Biological Department of the Owens College. (Manchester, 8vo.) N. Z. (C) p. O.
- § *Stud. Sassari*—Studi Sassaresi publicati per Cura di alcuni Professori della Università di Sassari. (Sassari, 8vo.) R. (C) p.
- Stud. Univ. Colorado*—The University of Colorado Studies. (Boulder, 8vo.) (C) p.
- Stud. Univ. Nebraska*—University Studies, published by the University of Nebraska. (Lincoln, Nebraska, 8vo.) R. C, p.
- Stud. Univ. Toronto*—University of Toronto Studies. Biological Series, Physiological Series [and others]. (Toronto, 8vo.) N. R. Z. (C) p.
- Svenska Ak. Handl.*—Kongliga Svenska Vetenskaps-Akademiens Handlingar. Ny Följd. (Stockholm, 4to.) N. K. R. Z. L. C, p.
- Sveriges geol. Unders. Afh.*—Sveriges geologiska Undersökning. Afhandlingar och uppsatser. (Stockholm, 4to.) Ng. R.
- Tabl. zool.*—Tablettes zoologiques publiées sous la direction de Aimé Schneider. (Poitiers, 8vo.) Nz. Z. (C) b. O.
- Tagbl. Ges. Deutsch. Naturf.*—Tagblatt der Versammlung der Gesellschaft deutscher Naturforscher und Aerzte. (Halle, &c., 4to.) N. C. O.

- Termes. Kozl. Magyar Tars.*—Természettudományi Közlöny
kiadja a K. Magyar Természettudományi Társulat. [Natural Science
Journal . . . Published by the R. Magyar Natural Science Society.]
(Budapest, 8vo.) N.
- Thompson Yates Lab. Rep.*—The Thompson Yates Laboratories Report.
(Liverpool, 4to.) R. C, p. O.
- Tijdschr. Ent.*—Tijdschrift voor Entomologie, uitgeven door de Neder-
landsch entomologische Vereeniging. ('s Gravenhage, 8vo.) Nz. Z.
L. C.
- Tijdschr. Indische Volkenk.*—Tijdschrift voor Indische Taal-, Land- en
Volkenkunde. (Batavia and The Hague, 8vo.) N. R. C, p.
- Tijdschr. Nederland. Dierk. Ver.*—Tijdschrift der Nederlandsche Dier-
kundige Vereeniging. (Leiden, 8vo.) Nz. L. (C) p. O.
- Timehri.* [Vide *J. agric. Soc. Guiana.*] Journal of the Royal Agricultural
and Commercial Society of British Guiana. (Demerara, 8vo.) N.
R. L.
- Tr. Ac. St. Louis*—The Transactions of the Academy of Science of St.
Louis. (St. Louis, 8vo.) N. K. R.
- Tr. Albany Inst.*—Transactions of the Albany Institute. (Albany, U.S.,
8vo.) N. R.
- Tr. Amer. ent. Soc.*—Transactions of the American entomological Society.
(Philadelphia, 8vo.) Nz. Z. L. C.
- Tr. Amer. micr. Soc.*—Transactions of the American microscopical Society.
(Buffalo, 8vo.) N.
- Tr. Amer. phil. Soc.*—Transactions of the American philosophical Society.
(Philadelphia, 8vo.) N. R. Z. L. C, p. O.
- Tr. Asiatic Soc. Japan*—Transactions of the Asiatic Society of Japan.
(Yokohama, 8vo.) N. R. Z. C. O.
- Tr. Ass. Meriden*—Proceedings and Transactions of the Scientific Associa-
tion, Meriden, Conn. (Meriden, 8vo.) R.
- Trav. geol. St. Petersb.*—Travaux de la section géologique du cabinet de sa
Majesté. (Ministère de la maison de l'Empereur) [called also Trudui
geologicheskoi chastī Kabineta imperatorskagho velichestva]. (St.
Petersburg, 8vo.) Ng. R.
- Trav. Inst. Lille*—Travaux et Mémoires des facultés de Lille. (Lille, 8vo.)
R. L. (C) p.
- Trav. Inst. Montpellier*—Travaux de l'Institut de Zoologie de l'Université
de Montpellier. Deuxième série. (Montpellier, 8vo.) Z.
- Trav. Inst. Solvay*—Travaux de laboratoire. Publiés par P. Heger.
(Bruxelles, 8vo.) R.
- Trav. Lab. Arcachon*—Université de Bordeaux. Société scientifique et
station zoologique d'Arcachon. Travaux des Laboratoires. (Paris,
8vo.) N. Z.
- Trav. Lab. geol. Grenoble*—Travaux du laboratoire de géologie de la
faculté des sciences de l'Université de Grenoble. (Grenoble, 8vo.)
Ng.
- Trav. Lab. histol. France*—École pratique des Hautes Études. Labora-
toire d'histologie du Collège de France. Travaux de l'année. (Paris,
8vo.) N. R. Z. C. O.

- Trav. Lab. Soie*—Travaux du laboratoire d'études de la Soie. (Lyon, 8vo.)
- Trav. Soc. St. Petersb.*—[Includes two Zoological sections, viz., *Trudui St. Peterb. Obsch.*, and *Protok. St. Peterb. Obsch.*, qq.v.]
- Trav. Soc. Univ. Kharkov.*—[Vide *Trudui Kharkov. Univ.*]
- Trav. Soc. Varsovie*—Travaux de la Société des Naturalistes de Varsovie. Comptes-rendus de la section biologique. [Vide *Protok. Obsch. Varshav.* and *Trudui Obsch. Varshav.*]
- Trav. Stat. Zool. Wimereux*—Travaux de la Station zoologique de Wimereux. (Paris, 4to.) Nz. K. O.
- Trav. Univ. Rennes*—Travaux scientifiques de l'Université de Rennes. [Reprinted from *Bull. Soc. sci. med. Ouest France.*] (Rennes, 8vo.) N. R. Z.
- Tr. Burton Soc.*—Transactions of the Burton-on-Trent Natural History and Archæological Society. (London, 8vo.) N. C.
- Tr. Canad. Inst.*—Transactions of the Canadian Institute. (Toronto, 8vo.) N. R. L. (C) p.
- Tr. City London Soc.*—Transactions of the City of London entomological and natural history Society. (London, 8vo.) N. C.
- Tr. Connect. Ac.*—Transactions of the Connecticut Academy of Arts and Sciences. (New Haven, 8vo.) N. K. R. Z. L. (C) p. O.
- Tr. Croydon Club*—[Vide *P. Croydon Club.*]
- Tr. Cumberland Ass.*—Transactions of the Cumberland Association for the Advancement of Literature and Science. (Carlisle, 8vo.) N. L. C.
- Tr. Dublin Soc.*—The Scientific Transactions of the Royal Dublin Society. (Dublin, 4to.) N. K. R. Z. L. (C) p. O.
- Tr. Dumfries Soc.*—The Transactions and Journal of Proceedings of the Dumfriesshire and Galloway natural history and antiquarian Society. (Dumfries, 8vo.) N. L.
- Tr. Eastbourne Soc.*—Transactions of the Eastbourne natural history Society. (Eastbourne, 8vo.) N. K. R.
- Tr. Edinb. Field Soc.*—Transactions of the Edinburgh Field Naturalists' and Microscopical Society. (Edinburgh, 8vo.) N.
- Tr. Edinb. geol. Soc.*—Transactions of the Edinburgh geological Society. (Edinburgh, 8vo.) Ng. R. C.
- Tr. E. Kent Soc.*—Transactions of the East Kent natural history Society. New series. (Canterbury, 8vo.) N. C. O.
- Trencsen term. Evkon.*—[Vide *Jahresh. Ver. Trencsen.*]
- Tr. ent. Soc. London*—The Transactions of the entomological Society of London. [Includes *Proceedings.*] (London, 8vo.) Nz. R. Z. L. C, p. O.
- Tr. geol. Soc. Austral.*—Transactions of the geological Society of Australasia. (Melbourne, 4to.) Ng. R.
- Tr. geol. Soc. Cornwall*—Transactions of the Royal geological Society of Cornwall. (Penzance, 8vo.) Ng. R. C. O.
- Tr. geol. Soc. Glasgow*—Transactions of the geological Society of Glasgow. (Glasgow, 8vo.) Ng. C, p.
- Tr. geol. Soc. S. Africa*—Transactions of the geological Society of South Africa. (Johannesburg, 8vo.) Ng.

- Tr. Guernsey Soc.*—[Vide *Rep. Guernsey Soc.*]
- Tr. Hertfordsh. Soc.*—Transactions of the Hertfordshire natural history Society and Field Club. (London, 8vo.) N. R. Z. L. C.
- Tr. Hull Club*—Transactions of the Hull Scientific and Field Naturalists' Club. (Hull, 8vo.) N.
- Tr. Hull. geol. Soc.*—Transactions of the Hull geological Society. (Hull, 8vo.) Ng.
- Tr. Inverness Soc.*—Transactions of the Inverness Scientific Society and Field Club. (Inverness, 8vo.) N.
- Tr. Irish Ac.*—The Transactions of the Royal Irish Academy. Section B. (Dublin, 4to.) N. K. R. Z. L. C, p. O.
- Tr. Kansas Ac.*—Transactions of the Kansas Academy of Science. (Topeka, 8vo.) N. R. L. (C) p.
- Tr. Leeds Club*—Transactions of the Leeds Naturalists' Club. (Leeds, 8vo.) N.
- Tr. Leeds Geol. Ass.*—Transactions of the Leeds Geological Association. (Leeds, 8vo.) Ng.
- Tr. Leicester Soc.*—Transactions of the Leicester Literary and Philosophical Society. New quarterly series. (Leicester, 8vo.) N. K. L.
- Tr. Lincoln Un.*—The Transactions of the Lincolnshire Naturalists' Union. (Louth, 8vo.)
- Tr. Linn. Soc. London*—The Transactions of the Linnean Society of London. Second series. Zoology. (London, 4to.) Nz. K. R. Z. L. C, b, p. O.
- Tr. Liverp. biol. Soc.*—[Vide *P. Liverp. biol. Soc.*]
- Tr. Manchester Geol. Soc.*—Transactions of the Manchester Geological and Mining Society. (Manchester, 8vo.) Ng. R. C, p, g. O.
- Tr. Manchester Micr. Soc.*—Manchester Microscopical Society. Transactions and Annual Report. (Manchester, 8vo.) N. R.
- Tr. Maryland Ac.*—Transactions of the Maryland Academy of Sciences. (Baltimore, 8vo.) N.
- Tr. Norfolk Soc.*—Transactions of the Norfolk and Norwich Naturalists' Society. (Norwich, 8vo.) N. Z. L. C.
- Tr. Northern Ass.*—Transactions of the Northern Association of Literary and Scientific Societies. (Inverness, &c., 8vo.) N.
- Tr. Nottingham Soc.*—Nottingham Naturalists' Society. Transactions and Annual Report. (Nottingham, 12mo.) N. L.
- Tr. N. York Ac.*—Transactions of the New York Academy of Sciences. (New York, 8vo.) N. K. R. Z. L. (C) p.
- Tr. N. Zealand Inst.*—Transactions and Proceedings of the New Zealand Institute. (Wellington, 8vo.) N. K. R. Z. L. C, p. O.
- Tromsø Mus. Aarsh.*—Tromsø Museums Aarshefter. (Tromsø, 8vo.) N. R. Z.
- Tr. Ottawa Club*—[Vide *Ottawa Natural.*]
- Tr. Ottawa Soc.*—Transactions of the Ottawa Literary and Scientific Society. (Ottawa, 8vo.) (C) p.

- Tr. Oxford Club*.—Transactions of the Oxford University Junior Scientific Club. (Oxford, 8vo.) N. O.
- Tr. Perthsh. Soc.*.—Transactions and Proceedings of the Perthshire Society of Natural Science. (Perth, 8vo.) N.
- Tr. Rochdale Soc.*.—Transactions of the Rochdale Literary and Scientific Society. (Rochdale, 8vo.) N.
- Tr. R. Soc. Canada*.—Proceedings and Transactions of the Royal Society of Canada (second series). (Ottawa, 4to.) N. K. R. Z. L. C, p. O.
- Tr. R. Soc. Edinb.*.—Transactions of the Royal Society of Edinburgh. (Edinburgh, 4to.) N. K. R. Z. L. C, b, p. O.
- Tr. R. Soc. S. Austral.*.—Transactions of the Royal Society of South Australia. (Adelaide, 8vo.) N. R. Z. L. (C) p.
- Tr. S. African Soc.*.—Transactions of the S. African Philosophical Society. (Cape Town, 8vo.) N. K. R. Z. L. C, p. O.
- Tr. Scottish N. H. Soc.*.—Transactions of the Scottish Natural History Society. (Edinburgh, 8vo.) N. Z.
- Tr. Shropsh. Soc.*.—Transactions of the Shropshire Archæological and Natural History Society. (Shrewsbury, 8vo.) N.
- Tr. Soc. Glasgow*.—Transactions of the Natural History Society of Glasgow (including the proceedings of the Society). New series. (Glasgow, 8vo.) N. Z. L. C. O.
- § *Tr. Soc. Northumb.*.—Transactions of the Natural history Society of Northumberland, Durham, and Newcastle-upon-Tyne. New series. (London, 8vo.) N. K. Z. L. C, p. O.
- Tr. Soc. Victoria*.—Transactions of the Royal Society of Victoria. (Melbourne, 4to.) N. K. R. Z. L. C, p. O.
- Tr. Stirling Soc.*.—Stirling Natural History and Archæological Society Transactions. (Stirling, 8vo.) N.
- Tr. Texas Ac.*.—Transactions of the Texas Academy of Science. (Austin, 8vo.) N. (C) p.
- Trudui geol. Kab.*.—[Vide *Trav. geol. St. Petersb.*]
- Trudui geol. Kom.*.—Trudui geologicheskagho Komiteta. [Called also] Mémoires du comité géologique. (St. Pétersbourg, 4to.) Ng. K. R.
- Trudui Kazan. Univ.*.—Trudui obshchestva estestvoîspuitatelei pri imperatorskom Kazanskom Unîversitetye. (Kazan, 8vo.) N. (C) p.
- Trudui Kharkov. Univ.*.—Trudui obshchestva ispuitatelei prirodoi pri imperatorskom Kharkovskom Unîversitetye. [Called also] *Trav. Soc. Univ. Kharkov.* (Kharkov, 8vo.) (C) p.
- Trudui Obshch. Varshav.*.—Trudui obshchestva estestvoîspuitatelei pri imperatorskom Varshavskom Unîversitetye. [Called also] *Travaux de la Société des Naturalistes de Varsovie.* (Warsaw, 8vo.) N.
- Trudui Russkagh. est. Obshch. St. Peterb.*.—Trudui Russkagho entomologhicheskagho obshchestva v St. Peterburg [= *Horæ Soc. ent. Ross.*, q. v.].
- Trudui St. Peterb. Obshch.*.—Trudui S.-Peterburghskagho obshchestva estestvoîspuitatelei. Otdyelenie Zoologii i Fisiologii. [Called also] *Travaux de la Société des Naturalistes de St. Pétersbourg. Section de Zoologie et de Physiologie.* (St. Petersburg, 8vo.) N.

Trudui Yaroslav. obshch.—[Vide *Mem. Soc. Jaroslav.*]

Tr. Wagner Inst.—Transactions of the Wagner Free Institute of Science of Philadelphia. (Philadelphia, 8vo.) N. K. R. (C) p. O.

Tr. Weardale Club—Weardale Naturalists' Field Club. Transactions. (Bishop Auckland, 8vo.) N.

Tr. Wisconsin Ac.—Transactions of the Wisconsin Academy of Sciences, Arts, and Letters. (Madison, 8vo.) N. R. (C) p. O.

Tr. Woolhope Club—Transactions of the Woolhope Naturalists' Field Club. (Hereford, 8vo.) N. L. C.

Tr. Yorksh. Union—The Transactions of the Yorkshire Naturalists' Union. (Leeds, 8vo.) N. Z. C.

Tr. Zool. Soc. London—Transactions of the Zoological Society of London. (London, 4to.) Nz. K. R. Z. L. C, p. O.

Tufts Coll. Stud.—Tufts College Studies. (Tufts Coll., Mass., 8vo.) Nz. R. Z. (C) b, p.

Univ. Calif. publ. Zool.—University of California publications. Zoology. [Also Geology and Physiology.] [Also publishes *Rep. Agric. exp. Stat.* and *Bull. Agric. exp. Stat.* qq. v.] (Berkeley, 8vo.) R. (C) p.

Univ. Chicago Publ.—The University of Chicago founded by John D. Rockefeller. The decennial publications. (Chicago, 4to.) N.

§ *Univ. Chron. California*—The University Chronicle, published by the University of California. (Berkeley, 8vo.) R. (C) p.

Verh. Ak. Amsterdam—Verhandelingen der koninklijke Akademie van Wetenschappen. Tweede Sectie. (Amsterdam, 4to.) N. K. R. Z. L. C, p.

Verh. Anat. Ges.—Verhandlungen der anatomischen Gesellschaft [published with *Anat. Anz.*, q.v.]. Nz. K. Z. (C) b. O.

Verh. Berlin. Ges. Anthropol.—Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte [published with *Zeitschr. Ethnol.*]. (Berlin, 8vo.)

Verh. Congr. Zool.—Verhandlungen des V. internationalen Zoologen-Congresses zu Berlin. (8vo.) [Title and place of publication change.] Nz. K. (C) b. O.

Verh. Deutsch. zool. Ges.—Verhandlungen der deutschen zoologischen Gesellschaft. (Leipzig, 8vo.) Nz. K. Z. C, b. O.

Verh. geol. Reichsanst.—Verhandlungen der kaiserlich-königlichen geologischen Reichsanstalt. (Wien, 8vo.) Ng. R. L. C, p. O.

Verh. Ges. Basel—Verhandlungen der naturforschenden Gesellschaft in Basel. (Basel, 8vo.) N. K. R. Z. L. C, p. O.

Verh. Ges. deutsch. Naturf.—Verhandlungen der Gesellschaft deutscher Naturforscher und Ärzte. Erster Theil, Die allgemeinen Sitzungen; Zweiter Theil, Abtheilungs-Sitzungen. (Leipzig, 8vo.) N. C. O.

Verh. Ges. Wien—Verhandlungen der k.-k. zoologisch-botanischen Gesellschaft in Wien. (Wien, 8vo.) N. K. R. Z. L. C, p. O.

- Verh. Ges. Würzburg*—Verhandlungen der physikalisch medicinischen Gesellschaft zu Würzburg. (Würzburg, 8vo.) N. K. R. L. Z. C, p. O.
- Verh. k. Leop.-Carol. Ak.*—[Vide *Acta Ac. German.*]
- Verh. schweiz. Ges.*—[Vide *Act. Soc. Helvet.*]
- Verh. Siebenb. Ver.*—Verhandlungen und Mittheilungen des Siebenbürgischen Vereins für Naturwissenschaften. (Hermannstadt, 8vo.) N. K. R.
- Verh. Ver. Brunn*—Verhandlungen des naturforschenden Vereines in Brünn. (Brünn, 8vo.) N. R. Z. L.
- Verh. Ver. Hamburg naturw.*—Verhandlungen des naturwissenschaftlichen Vereins in Hamburg. (Hamburg, 8vo.) N. R. Z. L. (C) b.
- Verh. Ver. Hamburg Unterh.*—Verhandlungen des Vereins für naturwissenschaftliche Unterhaltung zu Hamburg. (Hamburg, 8vo.) N. Z. L.
- Verh. Ver. Heidelb.*—Verhandlungen des naturhistorisch-medicinischen Vereins zu Heidelberg. Neue Folge. (Heidelberg, 8vo.) N. R. L. C, p.
- Verh. Ver. Karlsruhe*—Verhandlungen des naturwissenschaftlichen Vereins in Karlsruhe. [Consists of Sitzungsberichte and Abhandlungen.] (Karlsruhe, 8vo.) N.
- Verh. Ver. Presburg*—Verhandlungen des Vereins für Natur- und Heilkunde zu Presburg. [Called also] A Pozsonyi Orvos-Természettudományi, Egyesület Közleményei. (Presburg, 8vo.) N. R.
- Verh. Ver. Rheinland*—Verhandlungen des naturhistorischen Vereins der preussischen Rheinlande, Westfalens und des Reg.-Bezirks Osnabrück. (Bonn, 8vo.) N. K. Z. L. C. O.
- Verh. Ver. Santiago*—Verhandlungen des Deutschen wissenschaftlichen Vereins zu Santiago (Chile). (Santiago, 8vo.) N. R. L. (C) p.
- Verh. Ver. Stockholm*—[Vide *Biol. Foren. Forh.*]
- Veroffent. Inst. Meereskunde*—Veröffentlichungen des Instituts für Meereskunde und des Geographischen Instituts an der Universität Berlin. 8vo, Berlin. N. K. Z.
- Versl. Ak. Amsterdam*—Verslagen en Mededeelingen der k. Akademie van Wetenschappen. Afdeeling Natuurskunde. Derde Reeks. (Amsterdam, 8vo.) N. K. R. Z. L. C, p.
- Vestník Ceske Ak.*—Věstník české akademie Císaře Františka Josefa pro vědy, slovesnost a umění. (Praze, 8vo.) N.
- Vestník Ceske. Nauk.*—[Vide *SB. Bohmisch. Ges.*]
- Vestník. Klub. Prostějove*—Věstník Klubu přírodovědeckého v Prostějově. (Prostějově, 8vo.) N.
- Victorian Natural.*—The Victorian Naturalist: the Journal and Magazine of the Field Naturalists' Club of Victoria. (Melbourne, 8vo.) N. Z. C. O.
- Vid. Medd.*—Videnskabelige Meddelelser fra den naturhistoriske Forening i Kjøbenhavn. (Copenhagen, 8vo.) N. R. Z. C.
- Vierteljahrschr. Ges. Zurich*—Vierteljahrschrift der naturforschenden Gesellschaft in Zürich. (Zürich, 8vo.) N. K. R. Z. L. C, b, p.

- Vyest. est. S. Peterb.*—*Vyestnik estestvoznaniya* Īzdanie S. Peterburghskagho obshchestva estestvoispuitatelei. [Called also] *Revue des Sciences* publiée par la Société des Naturalistes à St. Pétersbourg. [St. Petersburg, 8vo.] N.
- W. Amer. Scient.*—The West American Scientist. (Los Angeles, &c., 8vo.) N.
- West Ind. Bull.*—West Indian Bulletin, the journal of the Imperial Agricultural Department for the West Indies. (Barbados, 8vo.) Nz. K. Z. (C) p.
- Wien. ent. Zeit.*—Wiener entomologische Zeitung. (Wien, 8vo.) Nz. Z. L. C.
- Wiltshire Mag.*—The Wiltshire Archæological and Natural History Magazine. (Devizes, 8vo.) N. C.
- Wiss. Meeresuntersuch.*—Wissenschaftliche Meeresuntersuchungen herausgegeben von der Kommission zur wissenschaftlichen Untersuchung der deutschen Meere in Kiel und der biologischen Anstalt auf Helgoland. Neue Folge. (Kiel and Leipzig, 4to.) Nz. K. R. Z. L. C. O.
- Wiss. Mitt. Bosnien*—Wissenschaftliche Mittheilungen aus Bosnien und der Hercegovina. Herausgegeben vom Bosnisch-Hercegovinischen Landesmuseum in Sarajevo. (Vienna, 8vo.) N. K. Z. O.
- W. Virginia Geol. Surv.*—West Virginia Geological Survey. (Morgantown, 8vo.) Ng.
- Yearb. U. S. Dep. Agric.*—Yearbook of the United States department of Agriculture. (Washington, 8vo.) N. R. Z. L. (C) b, p. O.
- Yn Lioar Mannínagh.*—[Vide *J. Isle Man Soc.*]
- Zapiski imp. ak. nauk.*—[Vide *Mem. Ac. St. Petersb.*]
- Zapiski Kiev. Obshch.*—*Zapiskī* Kievskagho Obshchestva estestvoispuitatelei. [Called also] *Mémoires de la Société des Naturalistes de Kiew.* (Kiew, 8vo.) N. R. (C) p.
- Zapiski Kharkov. Univ.*—[Vide *Ann. Univ. Kharkow.*]
- Zapiski Novoross. Obshch.*—*Zapiskī* Novorossiskagho Obshchestva estestvoispuitatelei [called also *Mémoires de la Société des Naturalistes de la Nouvelle-Russie.*] (Odessa, 8vo.) N. R. (C) p.
- Zeitschr. allg. Physiol.*—*Zeitschrift für allgemeine Physiologie* herausgegeben von Max Verworn. (Jena, 8vo.) K. (C) b, y. O.
- Zeitschr. ang. Mikr.*—*Zeitschrift für angewandte Mikroskopie* herausgegeben von G. Marpmann. (Leipzig, 8vo.) N.
- Zeitschr. Biol.*—*Zeitschrift für Biologie.* (München und Leipzig, 8vo.) K. R. C, y. O.
- Zeitschr. Deutsch. geol. Ges.*—*Zeitschrift der deutschen geologischen Gesellschaft.* (Berlin, 8vo.) Ng. K. C. O.
- Zeitschr. Ent. Breslau*—*Zeitschrift für Entomologie*, herausgegeben vom Verein für Schlesische Insektenkunde zu Breslau. (Breslau, 8vo.) Nz. Z. O.

- Zeitschr. Ethnol.*—Zeitschrift für Ethnologie. Organ der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte. (Berlin, 8vo.) K. C. O.
- Zeitschr. Ferd. Tirol*—Zeitschrift des Ferdinandeums für Tirol und Vorarlberg. (Innsbruck, 8vo.) N. R.
- Zeitschr. Hym. Dipt.*—Zeitschrift für systematische Hymenopterologie und Dipterologie. (Teschendorf, 8vo.) Nz. Z. C.
- Zeitschr. Morphol.*—Zeitschrift für Morphologie und Anthropologie. (Stuttgart, 8vo.) N. K. R. C. O.
- Zeitschr. Naturw.*—Zeitschrift für Naturwissenschaften. Im Auftrage des naturwissenschaftlichen Vereins für Sachsen und Thüringen. (Leipzig, 8vo.) N. K. R. Z. C. O.
- Zeitschr. Ool.*—Zeitschrift für Oologie. Organ für Wissenschaft und Liebhaberei. (Berlin, 8vo.) Z.
- Zeitschr. Ornith.*—Zeitschrift für Ornithologie und praktische Geflügelsucht, Organ des Verbandes der ornithologischen Vereine Pommerns. (Stettin, 8vo.) Nz. Z.
- Zeitschr. Sinnesorgane*—Zeitschrift für Psychologie und Physiologie der Sinnesorgane. (Hamburg und Leipzig, 8vo.) R. C, y. O.
- Zeitschr. wiss. Mikr.*—Zeitschrift für wissenschaftliche Mikroskopie und für mikroskopische Technik. (Braunschweig, 8vo.) N. K. R. C, y. O.
- Zeitschr. wiss. Zool.*—Zeitschrift für wissenschaftliche Zoologie. (Leipzig, 8vo.) Nz. K. R. Z. L. C, p. O.
- Zool. Ann.*—Zoologische Annalen. (Wurzburg, 8vo.) Nz. Z. O.
- Zool. Anz.*—Zoologischer Anzeiger, zugleich Organ der deutschen zoologischen Gesellschaft [with this is published *Bibliographia zoologica.*] (Leipzig, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Anz. Bibl.*—Bibliographia Zoologica (diario "Zoologischer Anzeiger" adnexa). (Leipzig, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Beitr.*—Zoologische Beiträge. (Breslau, 8vo.) Nz. K. Z. L. C, b. O.
- Zool. Centrbl.*—Zoologisches Centralblatt. (Leipzig, 8vo.) Nz. K. Z. (C) b. O.
- Zool. Garten*—Der Zoologische Garten. (Frankfurt-a.-M., 8vo.) Nz. Z. (C) p. O.
- Zool. Jahrb. Anat.*—Zoologische Jahrbücher. Abtheilung für Anatomie und Ontogenie der Thiere. (Jena, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Jahrb. Syst.*—Zoologische Jahrbücher. Abtheilung für Systematik, Geographie und Biologie der Thiere. (Jena, 8vo.) Nz. K. R. Z. L. C, b. O.
- Zool. Jahresber.*—Zoologischer Jahresbericht, herausgegeben von der zoologischen Station zu Neapel. (Berlin, 8vo.) N. K. R. Z. L. C, b. O.
- Zool. Mag. Tokyo*—The Zoological Magazine: organ of the Zoological Society of Tokyo. (Tokyo, 8vo.) Nz. Z.

- Zoologica*—Zoologica—Abhandlungen aus dem Gesamtgebiete der Zoologie.
Herausgegeben von Dr Carl Chun [formerly *Bibl. Zool.*]. (Stuttgart,
4to.) Nz. K. Z. L. C, b. O.
- Zoologist*—The Zoologist: a Monthly Journal of Natural History. (London,
8vo.) Nz. K. Z. L. C. O.
- Zool. Rec.*—The Zoological Record. (London, 8vo.) N. Nz. K. R.
Z. L. C, b, p. O.
- Zool. Res.*—Collectio brevium dissertationum novarumque investigationum
ad universas zoologicas doctrinas spectantium. (Roma, 8vo.)
- Zool. Vortr.*—Zoologische Vorträge herausgegeben von William Marshall.
(Leipzig, 8vo.) Nz. Z.
- Zool. Zentrbl.*—[Vide *Zool. Centrbl.*]

An asterisk prefixed to a quotation signifies that the Recorder has not
seen the journal or work referred to.

THE ZOOLOGICAL RECORD

FOR 1904.

I. GENERAL SUBJECTS.*

BY

D. SHARP.

CONTENTS.

| Titles | Page | | Page |
|-------------------------------|------|---|------|
| | 3 | IV. PHYSIOLOGICAL :— | |
| Subject-Index | | a. General | 65 |
| I. TEXT-BOOKS, GENERAL | | b. Particular functions . . | 66 |
| WORKS, EVOLUTION, | | c. Colour and Pigment . . | 66 |
| ESSAYS :— | | d. Nervous and Sensory, Psychology | 66 |
| a. Works on Zoology, Gene- | | V. PROTOPLASM AND CELL :— | |
| ral text-books | 56 | a. General | 67 |
| b. Philosophical | 56 | b. Protoplasm | 67 |
| c. Evolution | 57 | c. Cell, structure & func- | |
| d. Variation | 58 | tion | 67 |
| e. Adaptation, convergence, | | d. Nucleus, Nucleolus, Cen- | |
| environment | 58 | trosome, etc. | 68 |
| f. Selection, Protection . . | 59 | VI. OVUM AND SPERMATO- | |
| g. Ethology | 59 | ZOON :— | |
| h. Phylogeny, Organogeny . | 59 | a. General | 68 |
| i. Isolated questions . . . | 59 | b. Ovum, oogenesis | 68 |
| k. Historical, biographical . | 60 | c. Spermatozoon, sperma- | |
| l. Pedagogic and Popular . | 61 | togenesis | 69 |
| m. Nomenclature | 61 | d. Maturation | 69 |
| n. Taxonomy | 61 | e. Fertilisation | 69 |
| o. Museums, Methods, Eco- | | VII. DEVELOPMENT, EMBRYO- | |
| nomics | 61 | LOGY, PARTHENOGENE- | |
| p. Bibliography, Records . | 62 | SIS :— | |
| II. GEOGRAPHICAL :— | | a. General | 69 |
| a. General, Distribution . . | 62 | b. Particular species, stages | |
| b. Expeditions | 62 | and organs | 71 |
| c. Travels | 63 | c. Experimental | 72 |
| d. Faunas. Special Regions . | 63 | VIII. REPRODUCTION, SEX, HE- | |
| e. Plankton | 64 | REDITY, REGENERA- | |
| III. MORPHOLOGICAL :— | | TION :— | |
| a. General | 64 | a. General | 73 |
| b. Histological | 65 | b. Sex | 73 |
| c. Teratology | 65 | c. Heredity | 74 |
| | | d. Regeneration, Grafting . | 75 |

* It will be understood that papers recorded here may also be found under the various classes, II—XVIII. They are included here because of their bearing on general questions, which, if not obvious, will be made apparent in the Subject-Index.

INTRODUCTION.

NEARLY 1000 works are included in this Record.

Two works of the most general character appeared in 1904. The second edition of WEISMANN'S work on evolution (927) as well as its translation by Prof. and Mrs THOMSON (928) we can merely mention; its chief theme being that characters, taken as the sign of evolution, must be born not acquired. There can be no doubt that, however open to criticism the system of this most talented Zoologist may be, it is of much value as tending to expose the term heredity to the critical consideration it so much requires.

WASMANN'S general work (919) is practically a new one though styled a second edition. From a philosophical point of view the work of the Revd. Father might be perhaps severely criticised, but his views so far as they go are frankly stated, and the work zoologically will be found very good, and easily intelligible.

There are several learned works on the zoology of the ancients, BURCKHARDT (155-158), STRUNZ (864). At the opposite extreme we find the memoirs of SPENGEL (851), ZIEGLER (971), KORSCHOLT (482) who utter words of caution as to the confusion created by those who consider they are correcting zoological words and taxonomical expressions by changing their orthography. It certainly seems undesirable that we should have current, Kephelopoda, Cephalopoda, Zephalopoda.

The emission of rays by living bodies is attracting some attention, CHARPENTIER (180); as is also the effect of radium and other rays, on organisation, SCHAPER (792), WILLCOCK (945) etc.

Much attention continues to be given to the subject of unconscious movement. BOHN (97) after elaborate experiments concludes that the periodic movements of *Convoluta* are to be ascribed to inherited memory. Apparently this differs from the old terms instinct and habit, inasmuch as it is associated with protoplasm. JENNINGS' work (446) gives the results of observations that have extended over a number of years. He considers that the reactions of the lowest organisms to stimuli are not entirely of the kind called tropisms, but are essentially of the same nature as the method of trial and error, and exhibit therefore the rudiments of intelligence. FOREL'S (294) discussion of animal psychology is remarkably concise and lucid, and deserves the attention of all who do not entirely neglect this branch of knowledge.

The first volume of the treatise on histology by PRENANT, BOUIN & MAILLARD (738) deals with cytology, and appears to be an important work: it is said to contain much new matter.

The relations of mitosis and amitosis are discussed by H. L. OSBORN (686); and CHILD urges (184) that a greater importance attaches to amitosis than is usually conceded.

The "individuality" of chromosomes has been discussed and criticised by both HÄCKER (358) & PETRUNKEWITSCH (719). HÄCKER is inclined to favour the term autonomy rather than individuality. But in discussing autonomy he makes the difficulties connected with the term tolerably evident. He says that sperm and germ cells do not mix but only conjugate, but we do not quite gather what sort of a process conjugation without mixing is believed to be. He puts in tabular form the chromosome morphology in the heredity of cross-breeds of three forms of Arthropods. PETRUNKEWITSCH (719), who also criticises Boveri expects—and with great reason—valuable results from an inquiry into the cytology of parthenogenesis.

Works on development are very numerous. YATSU (957) has experimented as to the existence of "definite specification" in the regions of the egg, and finds that it is initiated by the dissolution of the germinal vesicle. MARCHAL's paper on germinogony (586) deals with one of Nature's experiments of a most remarkable character, and having the widest bearings. The subject is evidently destined to become of much importance. It is treated by the author in an excellent manner. The memoir we have already alluded to of PETRUNKEWITSCH on artificial parthenogenesis, besides dealing with the cytological aspects, discusses briefly the relation of the phenomena with natural parthenogenesis. E. B. WILSON (949) informs us that in both Annelids and Molluscs development is to be regarded as a mosaic-work of self-differentiating cells; specific conditions being dependent on specific forms of protoplasm.

Sexual dimorphism and ornament has been discussed by LAMEERE (497). He traces it to equivalence of energy in the early condition of the two sexes, concomitant with inequal physiological division of labour. Many of his examples, as well as his treatment of apparently exceptional cases, are full of interest and ingenuity.

In addition to discussing the matter in his larger paper, PAUL MARCHAL has a shorter one on the determination of sex (587) in connection with polyembryony. MONTGOMERY (640) sets forth the superiority of the female sex.

Memoirs on heredity are extremely numerous. We owe to HÄCKER (358, 360) a clear exposition of the Mendel work, and a discussion of it in connection with recent cytology. CHILD (186) as the result of regeneration experiments concludes that heredity is a physiological not a morphological question. The brief note of PAUL ABRIC (5) will no doubt receive the attention it deserves. In it he complains—and probably not altogether without reason—of the metaphysical nature of the considerations that have been previously advanced. Is it certain that the "parasitic complex" he postulates (in this as well as in other of his notes) is altogether free from the taint he complains of? We may hope that it will become quite clear to us in what way the new "parasitic complex" differs from the old "environment."

The study of regeneration has also been very extensive. MORGAN (651) discusses the phenomena and suggests new terms for use in the subject. SCHULTZ (814) instructs us as to the general view we should take of the subject; and HOLMES (414) has a chapter on the factors in the regulation of form.

I. TITLES.*

1. ABDERHALDEN, E. Neuere Versuche über künstliche Parthenogenesis und Bastardirung. Arch. Rassen i, pp. 656–663.
2. *——. Der Arten-Begriff und die Arten-Konstanz auf biologisch-chemischer Grundlage. Nat. Rundsch. xix, pp. 557–560. [From Zool. Anz. Bibl. xi, p. 72.]
3. ABEL, O. Über das Aussterben der Arten. C.R. Congr. geol. internat. ix, pp. 739–748.
4. ABRIC, P. A propos du problème de la pigmentation. C.R. Soc. Biol. lvii, pp. 229–231.

* An asterisk prefixed to a quotation indicates throughout the volume that the Recorder has not seen the Journal or Work referred to.

5. [ABRIC, P.] Sur la question de l'hérédité chez les Métazoaires. T. c. pp. 231, 232.
6. —. L'automatisme des mouvements ciliaires. T. c. pp. 266, 267, and correction p. 608.
7. —. Sur la variation. T. c. pp. 268, 269.
8. —. Sur la sexualité et détermination du sexe. T. c. pp. 269, 270.
9. —. A propos de la fécondation spermatozoïdale et chimique et de la parthénogenèse. T. c. pp. 271, 272.
10. ACHELIS, T. Die Ethik in ihrem Verhältnis zur Deszendenztheorie. Arch. Rassen i, pp. 420-427.
11. ALLEN, F. J. The origin of life. [Letter.] Nature lxxi, p. 54.
12. ALLEN, B. M. The embryonic development of the Ovary and Testis of the Mammals. Amer. J. Anat. iii, pp. 89-146, 7 pls., 5 figg.
13. ALLEN, G. M. The heredity of coat color in mice. P. Amer. Ac. xl, pp. 59-163.
— [See also CASTLE & ALLEN (174).]
14. ANCEL, P. & BOUIN, P. L'apparition des caractères sexuels secondaires est sous la dépendance de la glande interstitielle du testicule. C.R. Ac. Sci. cxxxviii, pp. 168-170.
15. —. L'infantilisme et la glande interstitielle du testicule. T. c. pp. 231, 232.
16. — & —. La glande interstitielle du testicule. Examen critique des essais de vérification expérimentale de son rôle sur l'organisme. C.R. Soc. Biol. lvi, pp. 83, 84.
17. — & —. Sur la glande interstitielle du testicule des Mammifères. (Réponse à M. Gustave Loisel.) T. c. pp. 95-97, cf. also t. c. pp. 97-100.
— [See also BOUIN & ANCEL (119-123).]
- ANDERSON, H. K. [See LANGLEY & ANDERSON (500, 501).]
18. *ANDRÉ, E. A Naturalist in the Guianas. London, 1904, 310 pp. Review, Nature lxi, p. 513.
19. ANDREWS, E. Crayfish spermatozoa. Anat. Anz. xxv, pp. 456-463.
20. ANNANDALE, N. Contributions to the terrestrial Zoology of the Faroes. Part I. P. Phys. Soc. Edinb. 1902-04, pp. 153-160.
Mollusca and Arthropoda. Aptera by G. H. CARPENTER. *Coccidæ* by R. NEWSTEAD.
21. ANTHONY, M. The evolution of the human foot. Rep. Smithson. Inst. 1903, pp. 519-535.
Translation from Rev. Scient. 1903.
22. ANTHONY, R. L'acquisition de la forme arrondie chez les Mollusques acéphales dimyaires fixés en position pleurothétique. (Note préliminaire.) Arch. zool. exp. Notes 1904, pp. clxxiii-clxxxvii.
23. ARIOLA, V. Le ipotesi nella partenogenesi sperimentale e la fecondazione normale. Atti Soc. Ligustica xiv, pp. 149-159.
24. —. La merogonia e l'ufficio del centrosoma nella fecondazione merogonica. Op. cit. xv, pp. 40-50.

25. *[ARIOLO, V.] Simbiosi e parassitismo nel regno animale. Genova, 1904, 8vo, 29 pp.
26. —. Rigenerazione naturale eteromorfica dell' oftalmopodite in *Palinurus vulgaris*. Arch. Entwicklmech. xviii, pp. 248-252, pl. xiv.
Review by VON WAGNER, Zool. Zentrbl. 1904, p. 830.
27. BABÈS, V. Sur certaines anomalies congénitales de la tête, déterminant une transformation symétrique des quatre extrémités (acrométagenèse). C.R. Ac. Sci. cxxxviii, pp. 175-178.
28. BACKMUND, K. Entwicklung der Haare und Schweissdrüsen der Katze. Anat. Hefte. Arb. xxvi, pp. 315-383, pls. 11-14.
BAETJER, F. H. [See BARDEEN & BAETJER (39) and GILMAN & BAETJER (324).]
29. BAEYER, H. VON. Ueber die physiologische Wirkung der Becquerelstrahlen. Zeitschr. allg. Physiol. iv, pp. 79-86.
30. BAGE, FREDA. Notes on phosphorescence in plants and animals. Victorian Natural. xxi, pp. 93-104.
31. *BALBIANI, E.-G. Sur les conditions de sexualité chez les Pucerons. Intermed. Biologistes i, pp. 170-174.
Abstract by SCHRÖDER, Allg. Zeitschr. Ent. ix, p. 115.
32. BALLOWITZ, E. Über hyperdaktyle Familien und die Vererbung der Vielfingerigkeit des Menschen. Arch. Rassen i, pp. 346-365.
33. —. Über die Spermien des Flussneunauges (*Petromyzon fluviatilis* L.) und ihre merkwürdige Kopfborste. Arch. mikr. Anat. lxv, pp. 96-120, pl. vii.
34. BANCROFT, F. W. Note on the galvanotropic reactions of the Medusa *Polyorchis penicillata* A. Agassiz. J. exp. Zool. i, pp. 289-292.
35. BARATONO, A. Lo "psicodiasma" di M. Panizza in rapporto con la Biologia generale. Atti Soc. Ligustica xiv, pp. 181-195.
36. BARBIERI, C. Ricerche sullo sviluppo del midollo spinale negli Anfibi. Arch. zool. ital. ii, pp. 79-106.
37. *BARD, L. La vie est une forme spécifique de l'énergie universelle. Rev. méd. Suisse rom. xxiv, pp. 608-612. [From Zool. Anz. Bibl. xi, p. 66.]
38. BARDEEN, C. R. Numerical vertebral variation in the human adult and embryo. Anat. Anz. xxv, pp. 497-519.
39. — & BAETJER, F. H. The inhibitive action of the Roentgen rays on regeneration in Planarians. J. exp. Zool. i, pp. 191-195.
40. BARDLEBEN, K. VON. Skelet, ausser Kopf (einschliesslich Gelenke und Gelenkmechanik). Anat. Hefte. Ergebn. xiii, pp. 95-164.
Summary of 70 works of 1903; bibliographic list, pp. 95-98.
41. —. Einige Vorschläge zur Nomenklatur. [Anatomical.] Anat. Anz. xxiv, pp. 301-304.
42. BARFURTH, D. Regeneration und Involution. Anat. Hefte. Ergebn. xiii, pp. 368-487.
Summary of recent work mostly 1903; bibliographic list of 133 works, pp. 368-374.
43. BARRATT, J. O. W. Die Reaktion des Protoplasmas in ihrem Verhältnis zur Chemotaxis. Zeitschr. allg. Physiol. iv, pp. 87-104, 1 pl.

44. BARRETT-HAMILTON, G. E. H. A physiological theory to explain the winter-whitening of birds and mammals in snowy countries, and the most striking points in the distribution of white in Vertebrates generally. Rep. Brit. Ass. 1903, pp. 698, 699.
45. BARRINGTON, AMY, LEE, ALICE & PEARSON, K. On inheritance of coat-colour in the greyhound. Biometrika iii, pp. 245-298.
46. BASHFORD, E. F. & MURRAY, J. A. The significance of the zoological distribution, the nature of the mitoses, and the transmissibility of Cancer. P. R. Soc. London lxxiii, pp. 66-76.
47. — & —. The significance of the Zoological distribution, the nature of the mitoses, and the transmissibility of cancer. Brit. Med. J. 1904, i, pp. 269-271, 6 figg.
48. *BASTIAN, H. C. Studies in Heterogenesis. London, 1904, 8vo, ix + 354 pp., 19 pls., 815 figg.
Review by H. DE VARIGNY, Rev. Scient. (5) i, pp. 590-592.
49. —. On the origin of flagellate Monads of fungus-germs from minute masses of Zooglæa. Nature lxxi, pp. 77-81.
BASTIEN, L. [See HENRY & BASTIEN (391).]
50. BATAILLON, E. La segmentation parthénogénésique des œufs immatures dans l'eau ordinaire. C.R. Soc. Biol. lvi, pp. 749-751.
51. —. Nouveaux essais de Parthénogénèse expérimentale chez les Vertébrés inférieurs (*Rana fusca* et *Petromyzon planeri*). Arch. Entwickmech. xviii, pp. 1-56, pls. i-iv, 12 figg.
52. —. Les agents dits "spécifiques" en Tératogénèse et en Parthénogénèse expérimentales. T. c. pp. 178-183, 306.
Abstract by MAAS, Zool. Zentrbl. 1905, p. 66.
53. BATESON, W. Address. Nature lxx, pp. 406-413. Also Rep. Brit. Ass. 1904, pp. 574-589. Summary by L. Plate. Arch. Rassen i, pp. 908, 909.
54. —. Heredity and evolution. Pop. Sci. Monthly lxv, pp. 522-531.
55. BATHER, F. A. Museums Association. Address by the President. Museums J. iii, pp. 71-94, 110-132, 36 pls.
56. BAUMGARTNER, W. J. Some new evidences for the individuality of the Chromosomes. Biol. Bull. viii, pp. 1-23, 3 pls.
57. *BAYER, H. Befruchtung und Geschlechtsbildung. Strassburg, 1904, 39 pp.
Abstract by FICK, Zool. Zentrbl. 1904, p. 779.
58. BEARD, J. Heredity and the cause of variation. Biol. Centrbl. xxiv, pp. 366-370.
59. —. Heredity as viewed from the biological aspect. Lancet 1904, ii, pp. 535, 536.
60. —. Heredity. T. c. pp. 640, 641.
61. —. Heredity in its biological and psychiatric aspects. Brit. Med. J. 1904, ii, pp. 963-965.
62. *—. The determination of sex in animal development. Jena, 1903, 8vo, 60 pp., 3 figg.
Review by H. DE VARIGNY, Rev. Scient. (5) i, p. 813.

63. BECCARI, O. Wanderings in the great forests of Borneo. Travels and researches of a Naturalist in Sarawak. Translated by E. H. Giglioli and revised and edited by F. H. H. Guillemard. London, 1904, 424 pp., illustrations.
Review, *Nature* lxxi, pp. 203-205.
[BEECHER, CHARLES EMERSON. Obituary. See JACKSON (433).]
64. [BELGICA.] Expédition antarctique belge. Four parts of Zoology published in 1904.
65. BELL, A. G. The multi-nippled sheep of Beinn Bhreagh. *Science* xix, pp. 767, 768.
BELL, R. G. [See KELLOGG & BELL (464).]
66. BELLINI, R. L' influenza dei mezzi come causa di variazioni e di dispersione nei molluschi. *Boll. Soc. Napoli* xviii, pp. 145-165.
67. BÉNARD, C. Projet d'expédition océanographique double à travers le bassin polaire arctique. *Bull. Mus. Monaco* No. 2, 30 pp.
68. BENSLEY, B. A. On the evolution of the Australian *Marsupialia*, with remarks on the relationships of the Marsupials in general. *Tr. Linn. Soc. London* ix, pt. 3, 1903, pp. 83-217, pls. v-vii.
69. BERG, W. Weitere Beiträge zur Theorie der histologischen Fixation. (Versuche an nucleinsaurem Protamin.) *Arch. mikr. Anat.* lxxv, pp. 298-357, pl. xx.
70. BERGEN, F. VON. Zur Kenntnis gewisser Strukturbilder ("Netzapparate," "Saftkanälchen," "Trophospongien") im Protoplasma verschiedener Zellenarten. *Arch. mikr. Anat.* lxxiv, pp. 498-574, pls. xxix-xxxix.
71. *BERT, P. & PELLANDA, C. La nomenclature anatomique et ses origines. Explication des termes anciens employés de nos jours. Paris 1904, vi+100 pp.
72. BERTELLI, D. Sullo sviluppo del diaframma, dei sacchi aeriferi e della cavità pleuro-peritoneale nel *Gallo domestico*. Nota preventiva. *Monit. Zool. ital.* xv, pp. 284-287.
73. BERTHELOT, —. Notice historique sur Henri Milne Edwards, Membre de l'Académie des sciences. *Mem. Ac. France* xlvii, pp. i-xxxvii.
74. —. Notice sur la vie et les travaux de M. Brown-Séquard. *T. c.* pp. ccxxi-cclviii.
75. BETHE, A. Ist die lebende menschliche Fingerspitze mehr befähigt Reibungselektrizität hervorzurufen, als tote Materialien geeigneter Beschaffenheit? *Centrbl. Physiol.* xviii, pp. 761-764.
76. —. Die historische Entwicklung der Ganglienzellhypothese. *Ergebn. Physiol. Biophys.* iii, pp. 195-213.
77. BIEDERMANN, W. Die Schillerfarben bei Insekten und Vögeln. *Festchr. Haeckel [Denkschr. Ges. Jena xi]* pp. 215-300.
78. BIFFEN, R. H. Experiments with Wheat and Barley Hybrids illustrating Mendel's Laws of Heredity. *J. Agric. Soc. Engl.* 1904, pp. 337-345.
79. BIGELOW, M. A. and others. College-entrance option in Zoology. Report of a Committee appointed by the American Society of Zoologists. *Science* xx, pp. 850-852.
——. [See also LLOYD & BIGELOW (535).]

80. BILLARD, A. Contribution à l'étude des *Hydroïdes* (multiplication, régénération, greffes, variations). Ann. Sci. nat. xx, pp. 1-251, pls. i-vi.
81. *BILLON, L. Recherches des causes déterminant la sexe (thèse). Paris 1904, 8vo, 119 pp. [from Zool. Anz. Bibl. ix, p. 282].
82. *BIZZARRINI, G. Zoologia descrittiva concenni comparativi. 2 vols. Livorno 1904.
Review Riv. ital. Sci. Nat. xxiv, pp. 83, 84.
83. BLANCHARD, R. Notices biographiques. xvi François-Vincent Raspail. Arch. parasit. viii, pp. 5-87, 1 pl. and portrait.
84. —. Zoologie et médecine. Op. cit. ix, pp. 129-144.
85. BLASCHKE, F. Über die tiergeographische Bedeutung eines antarktischen Kontinents. Verh. Ges. Wien liv, pp. 144-155.
Abstract Zool. Zentrbl. 1905, p. 165.
86. BLES, E. J. Notes on the development of *Phyllomedusa hypochrondrialis* (Daud.). Rep. Brit. Ass. 1904, pp. 605, 606.
87. BLOCH, B. Die geschichtlichen Grundlagen der Embryologie bis auf Harvey. Acta Ac. German. lxxxii, No. 3, 120 pp.
88. —. Die Grundzüge der älteren Embryologie bis Harvey. Zool. Ann. i, pp. 51-73.
89. BLUNTSCHLI, H. Beobachtungen am Ovarialei der Monascidie *Cynthia microcosmus*. Morphol. Jahrb. xxxii, pp. 391-450, pls. ix, x.
90. BOENNINGHAUS, G. Das Ohr des Zahnwales, zugleich ein Beitrag zur Theorie der Schalleitung. Eine biologische Studie. Zool. Jahrb. Anat. xix, pp. 189-360, pls. xii, xiii.
91. BÖHL, U. Beiträge zur Entwicklungsgeschichte der Leibeshöhle und der Genitalanlage bei den *Salmoniden*. Morphol. Jahrb. xxxii, pp. 505-586, pl. xiii.
92. *BÖHM, A. Taschenbuch der mikroskopischen Technik. Mit Beitrag (Rekonstruktionsmethoden von G. Born). 5 durchgesehene und vermehrte Auflage. München 1904.
Notice Anat. Anz. xxv, p. 622.
93. BOHN, G. Coopération, hiérarchisation, intégration des sensations chez les Artiozoaires. C.R. Ac. Sci. cxxxviii, pp. 112-114.
Abstract of this and (95) by SIMROTH, Zool. Zentrbl. 1905, pp. 66-68.
94. —. Oscillations des animaux littoraux synchrones de la marée. Op. cit. cxxxix, pp. 646-648.
95. —. L'anhydrobiose et les tropismes. T. c. pp. 809-811.
96. —. Théorie nouvelle du phototropisme. T. c. pp. 890, 891.
97. —. Les *Convoluta roscoffensis* et la théories des causes actuelles. Bull. Mus. Paris ix, pp. 352-364.
98. —. A propos d'un mémoire récente sur les *Convoluta*. T. c. pp. 397-399.
99. —. Influence de l'inanition sur les métamorphoses. C.R. Soc. Biol. lvi, pp. 661-663.
100. —. Influence de la position de l'animal dans l'espace sur ses tropismes. Op. cit. lvii, pp. 351-353.
101. —. L'anhydrobiose et les tropismes. T. c. pp. 365-367.
102. —. Faits biologiques isolés et faits réunis par une fonction continue. T. c. pp. 426-428.

103. [BOHN, G.] Influence de l'insolation des œufs d'Amphibiens sur l'évolution de l'embryon. T. c. pp. 663, 664.
104. —. De la lumière, de l'aliment et de la chlorophylle, comme facteurs modificateurs du développement des Amphibiens. C.R. Ac. Sci. cxxxviii, pp. 1244, 1245.
105. —. Influence des variations de l'éclairement sur les premiers stades larvaires des Amphibiens. C.R. Soc. Biol. lvii, pp. 767, 768.
106. —. Sur une symbiose déterminant une pœcilogonie. T. c. pp. 768, 769.
107. —. Intervention des influences passées dans les mouvements actuels d'un animal. T. c. pp. 789, 790.
108. —. Intervention des influences passées dans la résistance à l'inanition d'un animal. T. c. pp. 791, 792.
109. —. Influence du milieu extérieur sur l'œuf. Rev. gen. Sci. xv, pp. 240-250.
Cf. VIGUIER, t. c. pp. 475, 476.
110. BOISSOUDY, J. DE. Les hypothèses cinétiques et la loi de l'évolution. Rev. gen. Sci. xv, pp. 815-823.
111. BONHOTE, J. L. On coloration in mammals and birds. Abstract, J. Linn. Soc. London xxix, pp. 185-187.
112. BONNEVIE, K. Zur Kenntnis der Spermiogenese bei den *Gastropoden*. (*Enteroxenos östergreni*.) Biol. Centrbl. xxiv, pp. 267-274 and 306-310.
113. BONNIER, P. La question de l'orientation lointaine. Rev. Scient. (5) ii, pp. 837-839.
114. BORING, ALICE M. Closure of longitudinally split Tubularian stems. Biol. Bull. vii, pp. 154-159.
115. BORJA Y GOYENECHÉ, J. DE. La evolución es un hecho en Zoología? Mem. Ac. Barcel. v, No. 2, 18 pp.
116. BÖSENBERG, H. Zur Spermatogenese bei den *Arachnoiden*. Zool. Anz. xxvii, pp. 116-.
117. BOTEZAT, E. Untersuchungen über die Hyperplasie an Rehgeweihen mit Berücksichtigung der übrigen Cerviden. Arch. Entwicklmech. xviii, pp. 593-607, pl. xxxvi.
118. BOUIN, P. Recherches sur la figure achromatique de la cytodièrese et sur le centrosome. Arch. zool. exp. Notes 1904, pp. lxxiii-lxxxviii. Abstract by GOLDSCHMIDT, Zool. Zentrbl. 1904, p. 541.
119. — & ANCEL, P. Recherches sur la signification physiologique de la glande interstitielle du Testicule des Mammifères. I. Rôle de la glande interstitielle chez les individus adultes. J. Physiol. Path. vi, pp. 1012-1022, pl. viii. II. Rôle de la glande interstitielle chez l'embryon, les sujets jeunes et âgés, ses variations fonctionnelles. T. c. pp. 1039-1050, pl. ix.
120. — & —. La glande interstitielle a seule dans le testicule, une action générale sur l'organisme. Démonstration expérimentale. C.R. Ac. Sci. cxxxviii, pp. 110-112.
121. — & —. Recherches sur la structure et la signification de la glande interstitielle dans le testicule normal et ectopique du Cheval. (Note préliminaire.) Arch. zool. exp. Notes 1904, pp. cxli-cliv.

122. [BOUIN, P. & ANCEL, P.] Sur la ligature des canaux déferents chez les animaux jeunes. C.R. Soc. Biol. lvii, pp. 84-86. [Secondary sexual characters.]
123. — & —. Sur le déterminisme des caractères sexuels secondaires et de l'instinct sexuel. T. c. pp. 335-337.
— [See also PRENANT, BOUIN & MAILLARD (738) and ANCEL & BOUIN (14-17).]
124. BOUNHIOL, J.-P. Des conditions physiques de la respiration aquatique marine. C.R. Ass. franc. xxxii, 2, pp. 815-820.
125. BOUVIER, E. L. Sur le genre *Ortmannia* Rathb. et les mutations de certains *Atyidés*. C.R. Ac. Sci. cxxxviii, pp. 446-449.
126. —. Les œufs des *Onychophores*. Arch. Mus. Paris (4) vi, pp. 1-50.
127. BOVERI, TH. Noch ein Wort über Seeigel bastarde. Arch. Entwickmech. xvii, pp. 521-525.
Abstract by MAAS, Zool. Zentrbl. 1905, p. 73.
128. —. Ueber die phylogenetische Bedeutung der Sehorgane des *Amphioxus*. Zool. Jahrb. Suppl. vii, pp. 409-428.
129. BOVERI, T. Ergebnisse über die Konstitution der chromatischen Substanz des Zellkerns. Zool. Rec. 1903, Gen. Sub. (79). [Review Arch. Entwickmech. xviii, pp. 611-613, by LEVY. Also abstract by FICK, Zool. Zentrbl. 1904, pp. 97-99.]
130. — & STEVENS, N. M. Über die Entwicklung dispermer *Ascaris*-Eier. Zool. Anz. xxvii, pp. 406-417.
131. BRACHET, A. Recherches expérimentales sur l'œuf de *Rana fusca*. Arch. Biol. xxi, pp. 103-160, pl. iv.
132. *— . La signification morphologique et physiologique de la segmentation de l'œuf fécondé. Ann. Soc. Méd. Liège xxxix, pp. 319-339. [From Zool. Anz. Bibl. x, p. 225.]
— [See also SWAEN & BRACHET (867).]
133. BRANCA, A. Cellules interstitielles et spermatogénèse. C.R. Soc. Biol. lvi, p. 350.
134. —. Transformation de la spermatide en spermatozoïde, chez l'axolotl. T. c. 704-706.
135. —. Les premiers stades de la formation du spermatozoïde chez l'axolotl. Arch. zool. exp. Notes 1904, pp. cv-cxii.
136. BRANNER, J. C. A bibliography of the geology, mineralogy and palæontology of Brazil. Arch. Mus. Rio Jan. xii, pp. 197-309.
137. BRASIL, L. Contribution à la connaissance de l'appareil digestif des Annélides polychètes. L'épithélium intestinal de la Pectinaire. Arch. Zool. exp. xxxii, pp. 91-255, pls. iv-viii.
138. BRAUER, A. Beiträge zur Kenntniss der Entwicklung und Anatomie der *Gymniophonen*. iv. Die Entwicklung der beiden Trigeminus-Ganglien. Zool. Jahrb. Suppl. vii, pp. 381-408.
139. BRAUN, M. Geschichte der beschreibenden Naturwissenschaften und der Medizin als Vorlesungsfach auf den Universitäten mit deutscher Unterrichtssprache. Zool. Ann. i, pp. 74-81.

140. BRAUS, H. Tatsächliches aus der Entwicklung des Extremitätenskelettes bei den niedersten Formen. Zugleich ein Beitrag zur Entwicklungsgeschichte des Skelettes der Pinnæ und der Visceralbögen. Festschr. Hæckel [Denk. Ges. Jena xi], pp. 377-436, pls. xiii, xiv.
141. BRAZZA, F. DI & PIRENNE, P. La vie dans les cristaux. Rev. Scient. (5) i, pp. 518-523.
BREEMEN, P. J. [See REDEKE & BREEMEN (752).]
142. BREHM, V & ZEDERBAUER, E. Beiträge zur Plankton Untersuchung Alpiner Seen. Verh. Ges. Wien liv, pp. 48-58. II Teil t. c. pp. 635-643.
Abstract by ZSCHOKKE, Zool. Zentrbl. 1904, p. 168.
143. *BREITENBACH, W. Ernst Hæckel, ein Bild seines Lebens und seiner Arbeit: portrait, caligraphy. Odenkirk 1904, 107 pp.
144. BRESSLAU, E. Beiträge zur Entwicklungsgeschichte der *Turbellarien*. I. Die Entwicklung der Rhabdocölen und Alloiocölen. Zeitschr. wiss. Zool. lxxvi, pp. 213-332, pls. xiv-xx.
Abstract by author, Zool. Zentrbl. 1904, pp. 354-362.
145. BROMAN, I. Die Entwicklungsgeschichte der Bursa omentalis und ähnliche Rezessbildungen bei den Wirbeltieren. Wiesbaden, 1904, 8vo, x+611 pp., 650 figg., xx plates.
Notice, Anat. Anz. xxv, p. 320.
146. BRONN, H. G. Klassen und Ordnungen des Thierreiches. [See ECHINODERMA, HAMANN; PISCES, LÖNNBERG; TUNICATA, SEELIGER (27); MOLLUSCA, SIMROTH (86); MYRIAPODA, VERHOEFF.]
147. BROWNE, F. B. A bionomical investigation of the Norfolk Broads. Tr. Norfolk Soc. vii, pp. 661-673.
[BROWN-SÉQUARD, C. E. Biography vide BERTHELOT (74).]
148. BRUCE, W. S. The "Scotia" closing plankton net. P. Phys. Soc. Edinb. xv, p. 141, cuts.
149. BRUES, C. T. The internal factors of regeneration in *Alpheus*. Biol. Bull. vi, pp. 319, 320.
150. BRUNELLI, G. Ricerche sull' ovario degli insetti sociali. Rend. Acc. Lincei xiii, 1, pp. 285 & 350-356.
151. BÜHLER, A. Alter und Tod. Eine Theorie der Befruchtung. Biol. Centrbl. xxiv, pp. 65-79, 81-91, and 113-120.
152. BUJOR, P. Nouvelle contribution à l'étude de la faune des Lacs salés de Roumanie. Ann. Univ. Jassy iii, pp. 1-3.
Contains list of species of Protozoa, Arthropoda, Insecta.
153. BULLOT, G. Artificial Parthenogenesis and regular segmentation in an Annelid (*Ophelia*). Arch. Entwicklmech. xviii, pp. 161-170, 13 figg.
154. —. Artificial Parthenogenesis and regular segmentation in an Annelid (*Ophelia*). Univ. Calif. publ. Phys. i, pp. 165-174, 13 figg.
155. BURCKHARDT, R. Das koische Tiersystem, eine Vorstufe der zoologischen Systematik des Aristoteles. Verh. Ges. Basel xv, pp. 377-414.
156. —. Das erste Buch der aristotelischen Tiergeschichte. Zool. Ann. i, pp. 1-28.

157. [BURCKHARDT, R.] Die Biologie der Griechen. Ber. Senckenberg. Ges. 1904, pp. 3-26.
158. *——. Über antike Biologie. Aarau, 1904, 19 pp. (from Jahresh. Ver. schweiz. Gymnasiallehrer xxxiv).
159. BUTTEL-REEPEN, H. V. Über den gegenwärtigen Stand der Kenntnisse von den geschlechtsbestimmenden Ursachen bei der Honigbiene (*Apis mellifica* L.) ein Beitrag zur Lehre von der geschlechtlichen Präformation. Verh. Deutsch. zool. Ges. 1904, pp. 48-77.
Followed by a discussion in which Dr BRESSLAU and others took part.
160. *——. Die Parthenogenesis bei der Honigbiene. Natur & Schule i, pp. 230-239.
Abstract, SCHRÖDER, Allg. Zeitschr. Ent. ix, p. 112.
161. BYRNES, ESTHER F. Regeneration of the Anterior Limbs in the Tadpoles of Frogs. Arch. Entwicklmech. xviii, pp. 171-177, pl. x, 8 figg.
162. ——. On the skeleton of regenerated anterior limbs in the Frog. Biol. Bull. vii, pp. 166-169, 4 figg.
163. CALKINS, G. N. Studies on the life-history of *Protozoa*. iv. Death of the A series. J. exp. Zool. i, pp. 423-461, 3 pls.
164. ——. Evidences of a sexual-cycle in the life-history of *Amæba proteus*. Arch. Protistenk. v, pp. 1-16, pls. i-iii.
165. CALVET, L. La distribution géographique des Bryozoaires marins et la théorie de la bipolarité. C.R. Ac. Sci. cxxxviii, pp. 384-387.
166. CAMERANO, L. Osservazioni intorno all' applicazione del metodo somatometrico. Boll. Mus. Torino xix, No. 461, 4 pp.
167. ——. Ricerche intorno alla variazione del *Phyllodactylus europæus* Gené. T. c. No. 471, 28 pp.
168. CAMERON, J. On the origin of the epiphysis cerebri as a bilateral structure in the chick. P. R. Soc. Edinb. xxv, pp. 160-167.
169. ——. On the origin of the epiphysis cerebri as a bilateral structure in the chick. P. Scott. Micr. Soc. iv, pp. 11-17.
170. CARLGREN, O. Studien über Regenerations- und Regulationserscheinungen. I. Über die Korrelationen zwischen der Regeneration und der Symmetrie bei den Actiniarien. Svenska Ak. Handl. xxxvii, No. 8, 105 pp, xi pls.
171. *CARRACIDO, JOSÉ R. Tratado de Quimica biologica. Madrid 1903, 8vo, 725 pp.
Review by H. PIÉRON, Rev. Scient. (5) i, pp. 527-529.
172. CASTEEL, D. B. The cell-lineage and early development of *Fiona marina*, a Nudibranch mollusk. P. Ac. Philad. lvi, pp. 325-404, pls. xxi-xxxv.
173. CASTLE, W. E. Sex determination in bees and ants. Science xix, pp. 389-392.
Cf. WHEELER (936).
174. — & ALLEN, G. M. Mendel's law and the heredity of albinism. Mark. Anniv. Vol. pp. 379-398.
175. CAULLÉRY, M. & MESNIL, F. Revue annuelle de Zoologie. Rev. gen. Sci. xv, pp. 594-610.

176. [CAULLÉRY, M. & MESNIL, F.] Le vi^e Congrès international de Zoologie (Berne, 14-19 août 1904). T. c. pp. 895-898.
177. CAVALIÉ, M. Les chromoblastes du tégument externe dorsal de *Torpedo galvani*. C.R. Soc. Biol. lvi, p. 46.
178. CARAZZI, D. Ricerche embriologica e citologica sull' uovo di *Myzostoma glabrum* Leuckart. Monit. Zool. ital. xv, pp. 62-78, 87-100, pl. iv.
179. CESNOLA, A. P. DI. Preliminary note on the protective value of colour in *Mantis religiosa*. Biometrika iii, pp. 58, 59. [Orthoptera.]
180. CHARPENTIER, A. Moyens d'observation et caractères divers des radiations d'origine physiologique. C.R. Soc. Biol. lvi, pp. 69-72.
See also various other articles on the subject in the same volume.
181. CHARRIN, — & LE PLAY, —. Insuffisance de développement d'origine toxique (origine intestinale). C.R. Ac. Sci. cxxxviii, pp. 717-720.
182. CHATIN, J. Sur le cartilage étoilé ou ramifié. C.R. Ac. Sci. cxxxix, pp. 445-447.
183. —. Sur la morphographie comparée de la cellule cartilagineuse. T. c. pp. 489-491.
184. CHILD, C. M. Amitosis in *Moniezia*. Anat. Anz. xxv, pp. 545-558.
185. —. Form-regulation in *Cerianthus*. III. The initiation of Regeneration. Biol. Bull. vi, pp. 55-74, 31 figg. IV. The rôle of water-pressure in Regeneration. T. c. pp. 266-286, 7 figg. V. The rôle of water-pressure in Regeneration: Further experiments. Op. cit. vii, pp. 127-153, 17 figg. VI. Certain special cases of Regulation and their relation to internal pressure. T. c. pp. 193-214, 15 figg. VII. Tentacle-reduction and other experiments. T. c. pp. 263-279, 8 figg.
186. —. Studies on regulation. IV. Some experimental modifications of form-regulation in *Leptoplana*. J. exp. Zool. i, pp. 95-133.
187. —. Studies on regulation. V. The relation between the central nervous system and regeneration in *Leptoplana*: posterior regeneration. T. c. pp. 463-512.
188. —. Studies on regulation. VI. The relation between the central nervous system and regulation in *Leptoplana*; anterior and lateral regeneration. T. c. pp. 513-557.
189. —. Form-regulation in *Cœlentera* and *Turbellaria*. Smithson. Collect. quart. i, pp. 134-143.
190. CHUN, C. Wissenschaftliche Ergebnisse der deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia" 1898-1899. [See AVES, REICHENOW (503); TUNICATA, MICHAELSEN (20); CRUSTACEA, DOFLEIN (53), JURICH (97), THIELE (219); CœLEENTERATA, MARENZELLER (152A).]
191. CLARKE, J. M. The indigene and alien faunas of the New York Devonian. Rep. N. York Mus. lv, pp. 664-672.
[CLAUS. Lehrbuch 7th ed. See GROBBEN (343).]
192. CLAVET, J. M. Reacción de degeneración. Bol. Soc. Aragon. Ci. nat. ii, pp. 122-127.
193. CLEMENTS, F. E. Greek and Latin in biological nomenclature. Stud. Univ. Nebraska iii, pp. 1-85.

194. CLEVE, P. T. Report on Plankton collected by Mr Thorild Wulff during a voyage to and from Bombay. Arkiv Zool. i, pp. 329-381, pls. 16-19.
195. COE, W. R. The anatomy and development of the terrestrial Nemertean (*Geonemertes agricola*) of Bermuda. P. Boston Soc. xxxi, pp. 531-570, pls. xxiii-xxv.
196. COHN, F. Bemerkungen zur Histologie und Drüsenfunktion des Corpus luteum. Eine Erwiderung an Dr W. Lubosch. Anat. Anz. xxv, pp. 69-72.
197. COLLINS, F. C. Spire variation in *Pyramidula alternata*. Amer. Natural. xxxviii, pp. 661-668.
198. COLTON, B. P. Zoology : descriptive and practical. London, 1904, 2 parts ; part i, x+375 pp., part ii, xvii+204 pp.
Review, Nature lxx, p. 28.
199. CONKLIN, E. G. The organization and orientation of the Ascidian egg. Biol. Bull. vi, p. 322.
200. —. Experiments on the origin of the cleavage Centrosomes. T. c. pp. 221-226, 12 figg.
201. —. Organ-forming germ regions in the eggs of Ascidians and snails. Amer. Natural. xxxviii, p. 501.
202. COOK, O. F. The vegetative vigor of hybrids and mutations. P. Soc. Washington xix, pp. 83-90. [Botanical.]
203. —. Evolution not the origin of species. Pop. Sci. Monthly lxiv, pp. 445-456.
204. —. Professor Metcalf's evolution catechism. [Letter.] Science xix, pp. 312-314.
205. —. Natural selection in kinetic evolution. Science xix, pp. 549, 550.
206. COPEMAN, S. M. & PARSONS, F. G. Observations on the sex of mice. Preliminary paper. P. R. Soc. London lxxiii, pp. 32-48.
207. CORCELLE, J. Modifications récentes de la faune des Alpes. Rev. Scient. (5) ii, pp. 70-73.
208. CORNISH, C. J. Sir William Henry Flower.....a personal memoir. London, 1904, 8vo, vii+274 pp. Portrait.
Review by R. L., Nature lxx, p. 97 ; by LUCAS, Science xx, p. 342.
209. CORRENS, C. Experimentelle Untersuchungen über die Entstehung der Arten auf botanischen Gebiet. Arch. Rassen i, pp. 27-52.
210. *COUPIN, H. L'amour chez les bêtes. Paris, 1904, 18mo, 326 pp.
211. COUTAGNE, G. De la sélection des petites différences que présentent les caractères à variations continues. C.R. Ac. Sci. cxxxviii, pp. 54-56.
212. —. De la corrélation des caractères susceptibles de sélection naturelle. T. c. pp. 232-234.
213. —. De la sélection des caractères polytaxiques dans le cas des croisements mendéliens. T. c. pp. 298-300.
214. —. Des caractères polytaxiques chez les espèces à l'état sauvage. T. c. pp. 1521-1523.

215. CRAMPTON, C. B. Anabolism and specialisation. P. Phys. Soc. Edinb. xv, pp. 195-213.
216. CRAMPTON, H. E. Experimental and statistical studies upon *Lepidoptera*. I. Variation and elimination in *Philosamia cynthia*. Biometrika iii, pp. 113-130.
217. —. Variation and selection in Saturniid Lepidoptera. *Philosamia cynthia*. Biol. Bull. vi, pp. 310, 311.
218. CUÉNOT, L. Les recherches expérimentales sur l'hérédité mendélienne. Rev. gen. Sci. xv, pp. 303-310, 2 figg.
219. —. L'hérédité de la pigmentation chez les souris. (3^{me} note.) Arch. zool. exp. Notes 1904, pp. xlv-lvi.
220. DAHL, F. Deszendenztheorie und Schule. Arch. Rassen i, pp. 428, 429.
Cf. PLATE (727).
221. DAIBER, MARIE. Beiträge zur Kenntnis der Ovarien von *Bacillus rossii* Fabr. nebst einigen biologischen Bemerkungen. Jena. Zeitschr. xxxix, pp. 177-202, pls. iii, iv. [*Phasmidae*.]
222. DAMANY, P. La cavité cotyloïde. Évolution ontogénique comparée de sa profondeur chez l'homme et les animaux. J. Anat. Physiol. xl, pp. 387-413, 17 text-figg.
223. DAMAYE, H. L'hérédité collatérale. Sa valeur et son importance en pathologie. Rev. Scient. (5) i, pp. 745-748, 781-787.
224. DARBISHIRE, A. D. On the result of crossing Japanese Waltzing with Albino mice. Rep. Brit. Ass. 1904, pp. 591, 592.
225. —. On the result of crossing Japanese Waltzing with Albino mice. Biometrika iii, pp. 1-51.
226. —. On the bearing of Mendelian principles of heredity on current theories of the origin of species. Mem. Manchester Soc. xlviii, No. 24, 19 pp.
227. DASTRE, A. A new theory of the origin of species. Rep. Smithson. Inst. 1903, pp. 507-517.
About De Vries. Translated from Rev. des deux Mondes 1903.
228. DAVENPORT, C. B. Wonder horses and Mendelism. Science xix, pp. 151-153.
229. —. Color inheritance in mice. T. c. pp. 110-114.
230. —. Animal morphology in its relation to other sciences. Op. cit. xx, pp. 697.
231. *—, Statistical methods with special reference to biological variation. 2nd. ed. New York, 1904, viii + 223 pp. [From Zool. Anz. Bibl. xi, p. 63.]
232. — & HUBBARD, MARIAN E. Studies in the evolution of *Pecten*. IV. Ray variability in *Pecten varius*. J. exp. Zool. i, pp. 607-616.
DAVIS, B. M. [See RITTER & DAVIS (773).]
233. DAVIS, J. R. A. The natural history of animals. The animal life of the world in its various aspects and relations. Half-vols. vi-viii. London, 1904.

234. DEAN, BASHFORD. A visit to the Japanese Zoological Station at Misaki. *Pop. Sci. Month.* lxxv, pp. 195-204. [Portrait of K. Mitsu-kuri.]
235. —. Evolution in a determinate line as illustrated by the egg-cases of chimæroid fishes. *Biol. Bull.* vii, pp. 105-112.
Abstract, *Amer. Natural.* xxxviii, p. 486.
236. —. L'œuf de *Chimæra collicii* et l'adaptation de sa capsule. *C.R. Soc. Biol.* lviii, p. 14.
237. —. A reference to the origin of species in an early letter (1796) signed by both LAMARCK & GEOFFROY. *Science* xix, pp. 798-800.
238. DEFLANDRE, Mlle. C. La fonction adipogénique du foie dans la série animale. *J. Anat. Physiol.* xl, pp. 73-112, 305-336, 17 text-figg.
239. DELAGE, Y. Élevage des larves parthénogénétiques d'*Asterias glacialis*. *Arch. Zool. exp.* xxxii, pp. 27-42.
240. —. La parthénogenèse par l'acide carbonique obtenue chez les œufs après l'émission des globules polaires. *T. c.* pp. 43-46.
241. — & HÉROUARD. *Traité de Zoologie concrète. Tome III. Les Échinodermes.* Paris [dated 1903], 8vo, x+495 pp.
242. DELAMARE, G. [Abstract of thesis.] The question of hereditary transmission of acquired morbid conditions from parent to offspring. *Lancet* 1904, i, p. 1070.
243. DESCHAMPS, J. Étude analytique du phénomène de la vie oscillante. *C.R. Ac. Sci.** cxxxviii, pp. 235-237.
244. D'EVANT, T. Rudimentare Amnionbildungen der Selachier. Beiträge zur Phylogenie und Entwicklungsmechanik des Amnion. *Anat. Anz.* xxiv, pp. 490-492.
Abstract, *Zool. Zentrbl.* 1904, p. 699.
245. DE VRIES, H. The evidence of evolution. *Science* xx, pp. 395-401.
246. —. The evidence of evolution. [Address.] *Rec. Chicago Univ.* pp. 202.
— [See also MOLL (629).]
247. DEWAR, D. Sexual colour-dimorphism in birds. *J. Bombay Soc.* xvi, pp. 27-36.
Cf. YOUNG (960) & LISTON (534).
248. DIAMARE, V. Sullo sviluppo e morfologia delle capsule soprarrenali. Nota riassuntiva. *Boll. Soc. Napoli* xvii, pp. 55-61.
249. DICKEL, O. Entwicklungsgeschichtliche Studien am Bienenei. *Zeitschr. wiss. Zool.* lxxvii, pp. 481-527, pls. xix, xx.
250. DIEULAFÉ, L. Les fosses nasales des Vertébrés (Morphologie et Embryologie). *J. Anat. Physiol.* xl, pp. 268-298, 414-444, 19 text-figg.
251. DIMON, ABIGAIL C. The regeneration of a heteromorphic tail in *Allobophora fetida*. *J. exp. Zool.* i, pp. 349-351.
— [See also MORGAN & DIMON (655).]
252. DOHRN, A. Studien zur Urgeschichte des Wirbelthierkörpers. 23. Die Mandibularhöhle der Selachier. *Mt. Stat. Neapel* xvii, pp. 1-294, pls. i-xvi.

253. DONCASTER, L. On the early development of the unfertilised egg in the saw-fly, *Nematus ribesii*. P. Cambridge Soc. xii, pp. 474-476.
254. *DRIESCH, H. Naturbegriffe und Natururteile. Leipzig, 1904.
 DRUMMOND, J. [See HUTTON & DRUMMOND (430).]
255. DUBOIS, R. A propos des rayons N d'origine physiologique. C.R. Soc. Biol. lvi, pp. 149, 150.
256. —. Lumière animale et lumière minérale. T. c. pp. 442-444 & 621.
257. —. A propose d'une note de M. Georges Bohn sur l'anhydrobiose et les tropismes. Op. cit. lvii, pp. 564-566.
258. DUBOSCQ, O. Changement de génération et changement d'hôte chez *Trypanosoma* et *Spirochæte*, d'après Fritz Schaudinn. Arch. zool. exp. Notes 1904, pp. clv, etc.
 — [See also LÉGER & DUBOSCQ (515).]
259. DUBUISSON, H. Contribution à l'étude de la résorption du vitellus pendant le développement embryonnaire. C.R. Ac. Sci. cxxxix, pp. 684-686.
260. —. Sur la résorption du vitellus dans le développement des vipères. C.R. Soc. Biol. lvii, pp. 286-288.
261. —. Résorption du vitellus dans le développement du poulet. T. c. pp. 322, 323.
262. —. Sur la résorption du vitellus dans le développement des vipères (2^e communication). T. c. pp. 437, 438.
263. —. Dégénérescence des ovules. T. c. pp. 554, 555. [*Coleoptera*.]
264. *DUCCESCHI, V. Evoluzione morfologica ed evoluzione chimica. Attualità scient. No. 4. Bologna, 114 pp. [From Zool. Anz. Bibl. x, p. 45.]
265. DUCKWORTH, W. L. H. Morphology and Anthropology. A handbook for students. Cambridge, 1904, 8vo, xxviii + 564 pp., 333 illustrations. Noticed Anat. Anz. xxv, p. 623.
266. DUNCKER, G. Symmetrie und Asymmetrie bei bilateralen Thieren. Arch. Entwicklmech. xvii, pp. 533-682.
267. DYAR, H. G. & CAUDELL, A. N. The types of genera. J. N. York Ent. Soc. xii, pp. 120-122.
268. DYÉ, L. Les parasites des *Culicides*. Arch. parasit. ix, pp. 5-77. [*Diptera*.]
 EDMUNDS, A. [See MOTT & others (662).]
 [EDWARDS, H. MILNE. Biography, see BERTHELOT (73).]
269. EHRENFELS, C. VON. Zur Frage des Selektionswertes kleiner Variationen. Arch. Rassen i, pp. 190-194.
 PLATE, t. c. pp. 195-197 replies to this, and the discussion continues;
 EHRENFELS, t. c. pp. 339-342, and HOFFMANN q. v.
270. EIGENMANN, C. H. The eyes of the blind Vertebrates of North America. v. The history of the eye of the blind fish *Amblyopsis* from its appearance to its disintegration in old age. Mark Anniv. Vol. pp. 167-204, pls. xii-xv.
271. *EMERY, C. Compendio di Zoologia. 2^a ed. Bologna, 1904.
 Review by author, Monit. Zool. ital. xv, pp. 78, 79.

272. ENTZ, G. Az állatok színe és a mimicry. Termes. Kozl. Magyar Tars. xxxvi, pp. 201–206, 257–276, 417–441, 465–485, and Pt. II, Allatt. Kozl. Magyar Tars. 1904, pp. 189, 190.
273. *ERRERA, L. Une leçon élémentaire sur le Darwinisme. Second edition. Bruxelles, 1903, 8vo, 85 pp., 22 figg.
Review by H. PIÉRON, Rev. Scient. (5) i, pp. 370, 371.
274. ETHERIDGE, R. JUNR. A monograph of the Cretaceous Invertebrate fauna of New South Wales. Mem. Geol. Surv. N. S. Wales, Pal. xi (1902) 96 pp., xi pls.
275. EYCLESHYMER, A. C. Bilateral symmetry in the egg of *Necturus*. Anat. Anz. xxv, pp. 230–240.
276. —. The cytoplasmic and nuclear changes in the striated muscle cell of *Necturus*. Amer. J. Anat. iii, pp. 285–310, 4 pls.
FARKAS, K. [See TANGL & FARKAS (868).]
277. FARMER, J. B. Observations on the nature of cancerous growths. Nature lxi, pp. 319–321.
278. —. On nuclear divisions in malignant tumours. Biol. Centrbl. xxiv, p. 318.
Relates to HANSEMAN, t. c. p. 189.
279. FAURÉ, E. Sur la structure du protoplasma chez les *Vorticellidæ*. C.R. Soc. Biol. lvi, pp. 764–766.
280. FAUSSEK, V. Viviparität und Parasitismus. Zool. Anz. xxvii, pp. 761–767.
281. FAURE, J. W. Sur les fossiles crétacés dans le district de Slaviansk-serbsk du gouvernement d'Ekatherinoslaw. Trudui Kharkov. Univ. xxxviii, Part 2, pp. 89–174, 4 pls. 1903. [In Russian.]
Mentions Coel. Verm. Moll. etc.; not included in Zool. Rec. 1903.
282. FELIX, W. Entwicklungsgeschichte des Exkretionssystems von der Rückertschen Arbeit (1888) bis in den Beginn des Jahres 1904. Anat. Hefte Ergebn. xiii, pp. 592–707.
Account of recent work; includes phylogeny.
283. FERGUSON, MARGARET C. Contributions to the knowledge of the life history of *Pinus*, with special reference to sporogenesis, the development of the gametophytes and fertilisation. P. Washington Ac. vi, pp. 1–202, pls. i–xxiv.
Included though botanical because important as regards maturation and fertilisation.
284. FERRET, P. & WEBER, A. Anomalies de l'aire vasculaire de l'embryon de poulet obtenues expérimentalement. Arch. zool. exp. Notes 1904, pp. lvii–lix.
285. — & —. Influence de la pique des enveloppes secondaires de l'œuf de poule sur l'orientation de l'embryon. T. c. pp. lx–lxiii.
286. — & —. Nouveau procédé tératogénique applicable aux œufs d'oiseaux. C.R. Soc. Biol. lvi, pp. 78, 79.
287. — & —. Recherches sur l'influence tératogénique de la lésion des enveloppes secondaires dans l'œuf de poule. T. c. pp. 79–81.
[FICKERT, K. R. D. Obituary, see VON LINDEN (529).]
288. FIELD, H. H. Literatur. Bibliographica zoologica. Zool. Anz. Bibl. ix, 1904, 512 pp.

289. FILATOW, P. Zur Entwicklungsgeschichte des Exkretionssystems der Amphibien. *Anat. Anz.* xxv, pp. 33-47.
[FILHOL, H. Biography, see PETTIT (722).]
290. FISCHER, ALFRED. Transplantation, Regeneration und Involution. *Jahresber. Anat. Entwickl. N. F.* ix, pp. 73-104.
291. FISCHER, EUGEN. Variation, Heredität, Bastardierung, Descendenzlehre. *Jahresber. Anat. Entwickl. N. F.* ix, pp. 36-63.
292. FLEISCHMANN, A. Das Kopfskelett der Amnioten. Morphogenetische Studien. (I. Fortsetzung.) III. Das Cribrum der Säugetiere. IV. Historisch-kritische Betrachtungen. *Morphol. Jahrb.* xxxii, pp. 451-504, pls. xi, xii.
293. FOÀ, ANNA & GRASSI, B. Ricerche sulla riproduzione dei Flagellati. I. Processo di divisione delle Joenie e forme affini. Nota preliminare. *Rend. Acc. Lincei* xiii, 2, pp. 241-253. II. Processo di divisione delle Triconinfe. *T. c.* pp. 618-625.
294. FOREL, A. Ants and some other insects. An inquiry into the psychic powers of these animals with an appendix on the peculiarities of their olfactory sense. Translated from the German by Prof. William Morton Wheeler. *Religion of Science Library* No. 56. Chicago, 1904, 8vo, 49 pp. [*Hymenoptera.*]
- 294A. —. Über Polymorphismus und Variation bei den Ameisen. *Zool. Jahrb. Suppl.* vii, pp. 571-576.
Summary by L. PLATE, *Arch. Rassen* i, pp. 450-453.
295. FOREL, F. A. Le Léman. Monographie Limnologique. Tome iii, *Livr.* ii, pp. 409-715. Lausanne, 1904, 8vo.
This work is now complete.
296. FORSTER, A. Einiges über die Beziehungen Vesal's zu Leonardo da Vinci und zu Marc' Antonio della Torre. *Arch. Anat.* 1904, pp. 372-384.
297. FRANCÉ, R. Az "életerö" elmélete. *Termes. Kozl. Magyar Tars.* xxxvi, pp. 97-124.
298. * —. Die Weiterentwicklung des Darwinismus. Eine Wertung der neuen Tatsachen und Anschauungen. (Gemeinverständliche Darwinistische Vorträge und Abh., Heft 12). Odenkirchen, 136 pp. [from *Zool. Anz. Bibl.* x, p. 107].
299. FREDERICQ, L. La faune et la flore glaciaires de la Baraque-Michel (point culminant de l'Ardenne). *Bull. Ac. Belgique* 1904, pp. 1263-1326.
300. —. Revue générale sur la physiologie du système nerveux. *Annee Psychol.* x, pp. 236-259.
301. *FRIEDMANN, H. Die Konvergenz der Organismen. Eine empirische begründete Theorie als Ersatz für die Abstammungslehre. Berlin, 1904, 8vo, 242 pp. [From *Zool. Anz. Bibl.* x, p. 45.]
302. FUEHNER, H. Pharmakologische Studien an Seeigeleiern. *Arch. exp. Pathol.* lii, pp. 69-82.
303. *FÜHNER, HERM. Über die Einwirkung verschiedener Alkohole auf die Entwicklung der Seeigel. Summary by ABDERHALDEN. *Arch. Rassen* i, pp. 755 & 756.
304. FUJITA, T. On the formation of the germinal layers in *Gastropoda*. *J. Coll. Tokyo* xx, 1, 42 pp., 3 plates.
Abstract *Zool. Zentrbl.* 1904, p. 200.

305. FÜRBRINGER, M. Zur Frage der Abstammung der Säugetiere. Festchr. Hæckel. [Denk. Ges. Jena xi], pp. 571-604.
306. G., H. F. Carl Gegenbaur. Obit. R. Soc. London i, pp. 309-312.
307. *GALLARDO, A. Interpretación dinamica de la división celular. Univ. Nac. Buenos Aires 1902, 101 pp.
308. GAMBLE, F. W. & KEEBLE, F. W. Colour-physiology of the higher *Crustacea*. Rep. Brit. Ass. 1904, pp. 299, 300.
309. GANONG, W. F. The cardinal principles of ecology. Science xix, pp. 493-498.
Adaptation. Phytological, but of general application.
310. GARDINER, J. S. The Fauna and Geography of the Maldives and Laccadive Archipelagoes. Vol. II, pt. 3. See CRUSTACEA, STEBBING (207), BORRADAILE (18); COELENTERATA, GARDINER (68).
311. —. Notes and observations on the distribution of the larvæ of marine animals. Ann. Nat. Hist. xiv, pp. 403-410.
312. —. The origin of Coral reefs as shown by the Maldives. Amer. J. Sci. xvi, pp. 203-213.
313. GAUPP, E. A. Ecker's und R. Wiedersheim's Anatomie des Frosches. Dritte Abth. Zweite Aufl. Braunschweig, 1904, 8vo, xii+961 pp.
314. GAZERT, H. Die deutsche Südpolar-expedition, ihre Aufgaben, Arbeiten und Erfolge. Verh. Ges. deutsch. Naturf. lxxvi, i, pp. 40-53.
[GEGENBAUR, C. Biography. See GORKA (338), G. (306).]
GENDRE, E. [See PÉREZ & GENDRE (715).]
315. *GERARD, J. The old riddle and the newest answer. London 1904.
Review by PYCRAFT, Ann. Nat. Hist. xiv, p. 306: also review, Nature xxx, p. 504.
316. GEROULD, J. H. The development of *Phascolosoma*. Arch. zool. exp. Notes 1904, pp. xvii-xxviii.
317. —. Studies on the embryology of *Sipunculidæ*. 1. The embryonal envelope and its homologue. Mark. Anniv. Vol. pp. 437-452, pl. xxxii.
318. GESTRO, R. Leonardo Fea ed i suoi viaggi. Ann. Mus. Genova xli, pp. 95-152 [portrait: bibliography: list of discoveries].
319. GIARD, A. Controverses transformistes. Paris, 1904, 8vo, viii+179 pp.
A selection from previously published memoirs. Review, Nature lxx, p. 123.
320. —. Comment la castration agit-elle sur les caractères sexuels secondaires? C.R. Soc. Biol. lvi, pp. 4-7.
- 320A. —. Tonogamie; la chose et le mot. T. c. pp. 479-482.
321. —. Sur la parthénogenèse artificielle par dessèchement physique. T. c. pp. 594-596.
322. *GIARDINA, A. Sull' esistenza di una zona plasmatica perinucleare nel oocite. Publ. Lab. Zool. Palermo 1904.
323. GILL, T. [Vernacular names of animals.] Amer. Natural. xxxviii, pp. 241, 242.
Relates to a work published in 1798 by NEMNICH. Cf. also EASTMAN, t. c. p. 689.

324. GILMAN, P. K. & BAETJER, F. H. Some effects of the Röntgen rays on the development of Embryos. *Amer. J. Physiol.* x, pp. 222-224.
325. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. *Trav. Lab. Arcachon* vii, pp. 87-161.
326. GLASER, O. C. Autotomy, regeneration and natural selection. *Science* xx, pp. 149-153.
327. —. Excretory activities in the nuclei of Gastropod embryos. *Amer. Natural.* xxxviii, p. 516.
328. GODLEWSKI, E., Jun. Zur Kenntnis der Regulationsvorgänge bei *Tubularia mesembryanthemum*. *Arch. Entwicklmech.* xviii, pp. 111-160, pls. viii, ix, 7 figg.
329. GODMAN, F. D. *Biologia Centrali-Americana*. Parts clxxxi-clxxxv. See AVES, GODMAN; ARACHNIDA, F. O. PICKARD CAMBRIDGE; INSECTA, BLANDFORD, BRUNER, CHAMPION, FOWLER.
330. GOETTE, A. Über den Ursprung der Lungen. *Zool. Jahrb. Anat.* xxi, pp. 141-159.
331. GOLDSCHMIDT, R. Der Chromidialapparat lebhaft funktionierender Gewebezellen. *Biol. Centrbl.* xxiv, pp. 241-251.
332. —. Der Chromidialapparat lebhaft funktionierender Gewebezellen. (Histologische Untersuchungen an *Nematoden*. II.) *Zool. Jahrb. Anat.* xxi, pp. 41-140, pls. iii-viii.
333. —. Eine Sammlung von Referaten über neuere allgemein biologische Arbeiten. *Allg. Zeitschr. Ent.* ix, pp. 271-276.
334. GOLDSTEIN, K. Kritische und experimentelle Beiträge zur Frage nach dem Einfluss des Zentralnervensystems auf die embryonale Entwicklung und die Regeneration. *Arch. Entwicklmech.* xviii, pp. 57-110, pls. v-vii, 2 figg.
335. —. Die Abhängigkeit der Muskulatur vom Zentralnervensystem während der Embryonalzeit. Eine Erwiderung an Herrn Professor Neumann. *T. c.* pp. 584-592.
Cf. NEUMANN (671).
336. GORDON. Our country's animals and how to know them. A guide to the Mammals, Reptiles and Amphibians of Great Britain. viii + 152 pp.
Review, *Nature* lxx, p. 393.
337. GÖRICH, W. Zur Kenntnis der Spermatogenese bei den Poriferen und Cölenteraten nebst Bemerkungen über die Oogenese der ersteren. *Zeitschr. wiss. Zool.* lxxvi, pp. 522-542, pl. xxi.
338. GORKA, S. Gegenbaur Károly emlékezete. *Potfuz. Termes. Kozl.* xxxvi, pp. 1-11, portrait.
GRAHAM-SMITH, G. S. [See NUTTALL (678).]
GRASSI, B. [See FOÀ & GRASSI (293).]
339. *GRATACAP, L. P. The Museum. Reprint from *J. applied Microscopy* v & vi.
Review, *Science* xx, p. 501.
340. GREELEY, A. W. Experiments on the physical structure of the protoplasm of *Paramæcium* and its relation to the reactions of the organism to thermal, chemical and electrical stimuli. *Biol. Bull.* vii, pp. 3-32.

341. GREEN, J. F. Protective colouring. Tr. West Kent Soc. 1903/1904, pp. 35-45.
342. GRÉGOIRE, V. & WYGAERTS, A. La reconstitution du noyau et la formation des chromosomes dans les cinèses somatiques. *Cellule* xxi, pp. 1-76, pls. i, ii.
343. GROBBEN, K. Lehrbuch der Zoologie begründet von C. Claus, neu-bearbeitet. [7th Ed.] Erste Häfte, 480 pp., 507 figg. Marburg, 1904, 8vo.
344. GROBER, J. Die Bedeutung der Ahnentafel für die biologische Erblchkeitsforschung. *Arch. Rassen* i, pp. 644-681, 3 figg.
345. GROOT, J. G. DE. Ein neuer Kitt zum Schliessen von Gefässen mit Alkoholpräparaten, auch für den Versand. *Zool. Anz.* xxviii, pp. 406, 407.
346. GROSS, J. Die Spermatogenese von *Syromastes marginatus* L. *Zool. Jahrb. Anat.* xx, pp. 439-498, pls. xxxi, xxxii. [*Hemiptera.*]
Abstract by GOLDSCHMIDT, *Zool. Zentrbl.* 1905, pp. 35-37.
347. ——. Ein Beitrag zur Spermatogenese der *Hemipteren*. *Verh. Deutsch. zool. Ges.* 1904, pp. 180-190.
348. GRUVEL, A. De quelques phénomènes d'ovogenèse chez les Cirrhi-pèdes. *C.R. Ac. Sci.* cxxxix, pp. 148-150.
349. GUENTHER, K. Keimfleck und Synapsis. Studien an der Samen-reifung von *Hydra viridis*. *Zool. Jahrb. Suppl.* vii, pp. 139-160, pl. xi.
350. *——. Der Darwinismus und die Probleme des Lebens. Zugleich eine Einführung in das einheimische Tierleben. Freiburg-i.-Br. 1904, 460, pp.
Review by PLATE, *Arch. Rassen* i, p. 907.
351. GULICK, J. T. Divergence under the same environment as seen in the Hawaiian snails. *Amer. Natural.* xxxviii, pp. 494-496.
352. GURWITSCH, A. Morphologie und Biologie der Zelle. Jena, 1904, 8vo, xix + 437 pp.
Review by J. B. F., *Nature* lxxi, p. 174; *Notice, Anat. Anz.* xxv, p. 416.
353. ——. Zelle und Zellteilung. *Jahresber. Anat. Entwickl. N. F.* ix, pp. 37-68.
354. *GUYER, M. F. Spermatogenesis of normal and of hybrid pigeons. Chicago [? 1904], 61 pp., 2 pls.
Abstract by C. B. D., *Amer. Natural.* xxxviii, pp. 227, 228.
355. H., G. B. St. George Mivart. *Obit. R. Soc. London* i, pp. 95-100.
356. H., S. F. Henri de Lacaze-Duthiers. *Obit. R. Soc. London* i, pp. 146-150.
357. H., S. J. George James Allman. *Obit. R. Soc. London* i, pp. 25-27.
358. HÄCKER, V. Bastardirung und Geschlechtszellenbildung. *Zool. Jahrb. Suppl.* vii, pp. 161-256, pl. xii.
1. Die Ergebnisse der experimentelle Bastardforschung. 2. Die Geschlechtszellenbildung bei normalen und hybriden Formen. 3. Beziehungen zwischen den Ergebnissen der Bastardforschung und den cytologischen Beobachtungen.
359. ——. Heterotypische Teilung, Reduktion und andre zelltheoretische Begriffe. *Zool. Anz.* xxviii, pp. 38-42.
Relates to MONTGOMERY (638), *Zool. Anz.* xxvii.

360. [HÄCKER, V.] Über die neueren Ergebnisse der Bastardlehre und ihre Bedeutung für die praktische Tierzucht. Arch. Rassen i, pp. 321-338. Abstract by FICK, Zool. Zentrbl. 1904, p. 779.
361. —. Über die in malignen Neubildungen auftretenden heterotypischen Teilungsbilder. Einige Bemerkungen zur Ätiologie der Geschwülste. Biol. Centrbl. xxiv, pp. 786-797.
362. HAECKEL, E. Die Lebenswunder. Gemeinverständliche Studien über biologische Philosophie. Ergänzungsband zu dem Buche über die Welträthsel. Stuttgart, 1904, 8vo, xii+567 pp. Notice, Anat. Anz. xxv, p. 607.
363. [HAECKEL, E. Festschrift zum siebenzigsten Geburtstage von Ernst Haeckel herausgegeben von seinen Schülern und Freunden. Jena, 1904. Forms Vol. xi of Denk. Ges. Jena.]
[HAECKEL, ERNST. See LOISEL, G. (556).]
364. HALL, R. W. The development of the mesonephros and the Müllerian ducts in *Amphibia*. Bull. Mus. Harvard xlv, pp. 29-126, viii pls.
365. HALLER, B. Über den allgemeinen Bauplan des Tracheaten Syncerebrums. Arch. mikr. Anat. lxv, pp. 181-279, pls. xii-xvii.
366. * —. Lehrbuch der vergleichenden Anatomie. Jena, 1904, viii + 914 pp.
Review, Nature lxx, p. 621.
HALLIBURTON, W. D. [See MOTT & others (662).]
367. HAMANN, O. Literatur 1903, 1904 [Anatomical]. Anat. Anz. xxiv, suppl. pp. 1-96, and xxv, pp. 1-128.
368. *HAMBURGER, FRANZ. Arteigenheit und Assimilation. Leipzig und Wien, 1903, 73 S.
Review by EMIL ABDERHALDEN, Arch. Rassen i, pp. 607-609.
369. HAMY, E. T. Le commerce des animaux exotiques à Marseille à la fin du xvi^e siècle. Bull. Mus. Paris ix, pp. 316-318.
370. HARGITT, C. W. The early development of *Pennaria tiarella* McCr. Arch. Entwickmech. xviii, pp. 453-488, pls. xxiv-xxviii.
371. —. Regeneration in *Rhizostoma pulmo*. J. exp. Zool. i, pp. 73-94.
372. —. Regeneration in *Scyphomedusæ*. Amer. Natural. xxxviii, pp. 517-519.
373. —. Some unsolved problems of organic adaptation. Science xix, pp. 132-145.
374. —. Some unsolved problems of organic adaptation. [Abridgment of address at Amer. Ass.] Nature lxix, pp. 404, 405.
375. HARMER, S. F. Museums Association Address by the President. Museums J. iv, pp. 3-22.
376. HARPER, E. H. Notes on regulation in *Stylaria lacustris*. Biol. Bull. pp. 173-190.
377. —. The fertilization and early development of the Pigeon's Egg. Amer. J. Anat. iii, pp. 349-386, 4 pls., 6 diagrams.
378. HARRIS, D. F. Affectability and functional inertia as the two properties of protoplasm. P. Scott. Micr. Soc. iv, pp. 18-28.

379. HARRISON, R. G. An experimental study of the relation of the nervous system to the developing musculature in the embryo of the Frog. *Amer. J. Anat.* iii, pp. 197-200, 18 text-figg.
380. HARTMANN, C. Variability in the number of teeth on the claws of adult spiders, showing their unreliability for systematic description. *Biol. Bull.* vi, pp. 191-197.
381. HARTMANN, M. Die Fortpflanzungsweisen der Organismen, Neubenennung und Einteilung derselben, erläutert an Protozoen, Volvocineen und Dicyemiden. *Biol. Centrbl.* xxiv, pp. 18-61.
Abstract, *Zool. Zentrbl.* xi, p. 273.
382. HARTOG, M. Some problems of reproduction. II. *Quart. J. Micr. Sci.* xlvii, pp. 583-608.
A. Multiple fission and embryonic enzymes. B. An essay on fertilisation. C. The rôle of the sperm.
383. —. Note on Embryonic Ferments. *J. Physiol.* xxxi, p. xlvii.
384. —. On the elucidation of cellular fields of force by magnetic models. *Rep. Brit. Ass.* 1904, pp. 610, 611.
385. —. Des chaînes de force et d'un nouveau modèle magnétique des mitoses cellulaires. *C.R. Ac. Sci.* cxxxviii, pp. 1523-1525.
386. HARVIE-BROWN, J. A. & MACPHERSON, H. A. A Vertebrate fauna of the North-west Highlands and Skye. London, 1904, 8vo, civ+378 pp., 18 pls., map.
Includes biographies of some Scottish Naturalists.
387. HELGUERO, F. DE. Sui massimi delle curve dimorfiche. *Biometrika* iii, pp. 84-98.
388. HENNEGUY, F. *Revue de Cytologie.* *Annee Psychol.* x, pp. 211-227, 7 text-figg.
389. —. Les Insectes. Morphologie—Reproduction—Embryogénie. Paris, 1904, 8vo, xviii+804 pp., 4 pls., 622 illustt.
390. HENRI, V. & LARGUIER DES BANCELS. Application des méthodes, Physico-Chimiques à l'étude de différents phénomènes de Biologie générale. *J. Physiol. Path.* vi, pp. 261-272.
391. HENRY, C. & BASTIEN, L. Sur la croissance de l'homme et sur la croissance des êtres vivants en général. *C.R. Ac. Sci.* cxxxix, pp. 811-814.
392. HENSEN, V. Ergebnisse der in dem Atlantischen Ocean von Mitte Juli bis Anfang November 1889 ausgeführten Plankton-Expedition der Humboldt-Stiftung. See PROTOZOA, IMMERMAN *Aulacanthiden* (148), POPOFSKY *Acanthometra* (270).—Also includes *Schizophyceen* by N. WILLE.
393. HERBST, C. Über die künstliche Hervorrufung von Dottermembranen an unbefruchteten Seeigeleiern. Zweite Mittheilung. Die Hervorrufung von Dottermembranen durch Silberspuren. *Mt. Stat. Neapel* xvi, pp. 445-457.
394. —. Über die zur Entwicklung der Seeigellarven nothwendigen anorganischen Stoffe, ihre Rolle und ihre Vertretbarkeit. III Theil. Die Rolle der nothwendigen anorganischen Stoffe. *Arch. Entwicklmech.* xvii, pp. 306-520, pls. xiv-xvii.
395. —. Vorläufige Übersicht über die Rolle der zur Entwicklung der Seeigellarven nothwendigen anorganischen Stoffe. *Verh. Ver. Heidelb.* vii, pp. 367-394.

396. HERDMAN, W. A. & others. Report to the Government of Ceylon on the Pearl oyster fisheries of the Gulf of Manaar. With supplementary reports upon the Marine biology of Ceylon, by other Naturalists. London, two vols. 4to: Vol. I, 1903, vii+307 pp., xx pls.: Vol. II, 1904, vii+300 pp., viii pls.

The separate memoirs are dealt with in the Records of special Subjects.

397. HERMANN, L. & others. Jahresbericht über die Fortschritte der Physiologie. XII. Bericht über das Jahr 1903. Stuttgart, 1905, 8vo, vi+334 pp. Titles and abstracts.
398. HERTEL, E. Ueber Beeinflussung des Organismus durch Licht, speziell durch die chemisch wirksamen Strahlen. Vergleichend-physiologische Untersuchungen. Zeitschr. allg. Physiol. iv, pp. 1-43, 1 pl., 1 text-fig.
399. HERTWIG, O. Handbuch der vergleichenden und experimentellen Entwicklungslehre der Wirbeltiere. Lieff. 18-20. [Parts of Vol. III.]
400. —. Über Beziehungen des thierischen Eies zu dem aus ihm sich entwickelnden Embryo. SB. Ak. Berlin 1904, pp. 647-652.
401. —. Weitere Versuche über den Einfluss der Zentrifugalkraft auf die Entwicklung tierischer Eier. Arch. mikr. Anat. lxiii, pp. 643-657, pl. xxx.
402. *—. Ernst Haeckel; zum 70. Geburtstag. Deutsch. med. Wochenschr. xxx, pp. 286, 287, portrait. [From Zool. Anz. Bibl. ix, p. 285.]
403. HERTWIG, R. Ueber eine Methode, Froscheier am Beginn ihrer Entwicklung im Raume so zu orientiren, dass sich die Richtung ihrer Teilebenen und ihr Kopf- und Schwanzende bestimmen lässt. Festchr. Haeckel, pp. 17-30, pl. iii.
404. —. Ueber physiologische Degeneration bei *Actinosphaerium eichhorni*. Nebst Bemerkungen zur Ätiologie der Geschwülste. Festschr. Haeckel [Denk. Ges. Jena xi], pp. 301-354, pls. ix-xii.
405. HERZOG, R. O. Chemisches Geschehen im Organismus. Zeitschr. allg. Physiol. iv, pp. 163-200.
406. HESCHELER, K. Palaeontologie und Zoologie. Vierteljahrschr. Ges. Zurich xlix, pp. 1-16.
407. HICKSON, S. J. Variations. Tr. Manchester Micr. Soc. 1903, pp. 25-34.
409. *HILL, M. D. & WEBB, W. M. Eton nature-study and observational lessons. London, 1904, 2 vols.
410. HILTON, W. A. Segmentation of the ovum of *Desmognathus fusca*. Amer. Natural. xxxviii, pp. 498-500.
411. HIRSCHLER, J. Weitere Regenerationsstudien an *Lepidopteren*-puppen. (Regeneration des vorderen Körperendes.) Anat. Anz. xxv, pp. 417-435.
- [His, WILHELM. Biography. See KOLLMANN (478).]
412. HOFFMANN, W. VON. Zur Frage des Selektionswertes kleiner Variationen. Arch. Rassen i, pp. 343-346.
- Cf. EHRENFELS & PLATE (269).
413. *HOLLANDER, F. D'. Recherches sur l'oogénèse et sur la structure et la signification du noyau vitellin de Balbiani chez les oiseaux. Ann. Soc. méd. Gand. lxxxii, pp. 158-161. [From Zool. Anz. Bibl. x, p. 224.]

414. HOLMES, S. J. The problem of form regulation. *Arch. Entwick-mech.* xvii, pp. 265-305, 3 figg.
415. HOLMGREN, EMIL. Beiträge zur Morphologie der Zelle. II. Verschiedene Zellarten. *Anat. Hefte. Arb.* xxv, pp. 97-208, pls. 4-17, 18 text-figg.
416. HOLMGREN, N. Zur Morphologie des Insektenkopfes. I. Zum metameren Aufbau des Kopfes der *Chironomus*larve. *Zeitschr. wiss. Zool.* lxxvi, pp. 439-477, pls. xxvii, xxviii.
417. HOOKHAM, G. The origin of life. [Letters.] *Nature* lxxi, p. 9 and p. 101.
418. HOWORTH, H. H. The uncertainties of science. *Tr. South. Eastern Soc.* 1903, pp. 1-21.
HUBBARD, MARIAN E. [See DAVENPORT & HUBBARD (232).]
419. HUBRECHT, A. A. W. Hugo de Vries's theory of mutations. *Pop. Sci. Monthly* lxy, pp. 205-223.
420. —. On the relationship of various invertebrate Phyla. *P. Ac. Amsterdam* 1904, pp. 839-846.
421. —. Die Abstammung der *Anneliden* und *Chordaten* und die Stellung der Ctenophoren und Plathelminthen im System. *Jena. Zeitschr.* xxxix, pp. 151-176.
422. —. The trophoblast. A rejoinder. *Anat. Anz.* xxv, pp. 106-110.
423. —. The trophoblast : a rejoinder. *Science* xx, pp. 367-370.
424. HUNTER, S. J. On the morphology of artificial parthenogenesis in the Sea-urchin, *Arbacia*. [Abstract.] *Science* xix, pp. 213, 214.
425. HUNTER, W. Some reactions of *Mnemiopsis leydyi* (A. Ag.). *Biol. Bull.* vi, p. 324.
426. HURST, C. C. Mendel's discoveries in heredity. *Tr. Leicester Soc.* viii, pp. 121-134.
427. —. Experiments on heredity in rabbits. *Rep. Brit. Ass.* 1904, p. 592.
428. HUTTON, F. W. Index faunæ Novæ Zealandiæ. London, 1904, 8vo, viii + 372 pp.
Introduction ; historical ; dissertation on the region : pp. 1-23.
Review, *Nature* lxx, p. 78.
429. —. Hering's theory of heredity and its consequences. *Nature* lxix, pp. 366-369.
430. — & DRUMMOND, J. The animals of New Zealand : an account of the Colony's air-breathing Vertebrates. Christchurch and London, 1904, xiv + 381 pp. illustrated.
Review, *Nature* lxxi, p. 198.
431. HYDE, I. H. Differences in electrical potential in developing eggs. *Amer. J. Physiol.* xii, pp. 241-275.
432. IWANOW, P. Ueber die Regeneration der Segmente bei den *Polychæten*. *Protok. St. Peterb. Obshch.* xxxv, 1904, pp. 254-261 [in Russian] and summary in German, pp. 307-309.
433. JACKSON, R. T. Charles Emerson Beecher [with portrait and bibliographic list]. *Amer. Natural.* xxxviii, pp. 407-426.
434. JACOBI, A. Die Bedeutung der Farben im Tierreiche. *Gemeinverst. Darwinist. Vortr., Breitenbach, Heft.* xiii, 56 pp.

435. [JACOBI, A.] Tiergeographie. Leipzig. Sammlung Göschen, 1904, 152 pp., 2 maps.
436. JÄGERSKIÖLD, L. A. Results of the Swedish Zoological expedition to Egypt and the White Nile, 1901, under the direction of L. A. Jägerskiöld. Part I, Upsala, 1904.
Includes many short papers which are dealt with in our special Records.
437. JAMMES, L. Zoologie pratique basée sur la dissection des animaux les plus répandus. Paris, 1904, 8vo, iii+565 pp.
438. JANKOWSKI, J. Beitrag zur Entstehung des Corpus luteum der Säugetiere. Arch. mikr. Anat. lxiv, pp. 361-388, pl. xxiii.
439. JANOŠÍK, J. Über die Entwicklung der Vorniere und des Vornierenganges bei Säugern. Arch. mikr. Anat. lxiv, pp. 214-234, pls. xiii, xiv.
440. —. Ovývoji předledviny (pronephros) a vývodu Wolffova u ssavců. Rozpr. Ceske Ak. ii, xiii, No. 9, 16 pp., 2 pls.
441. JANSSENS, F. A. Das chromatische Element während der Entwicklung des Ovocyts des Triton. Anat. Anz. xxiv, pp. 648-651.
442. JENKINSON, J. W. The effect of solutions of salt and other substances on the development of the frog. Rep. Brit. Ass. 1903, pp. 693, 694.
443. —. The influence of salt and other solutions on the development of the frog. Op. cit. 1904, pp. 288-291.
444. —. On the fertilisation of the egg of the Axolotl. T. c. p. 600.
445. —. Observations on the maturation and fertilisation of the egg of the Axolotl. Quart. J. Micr. Sci. xlviii, pp. 407-482, pls. xxix-xxxiii.
446. JENNINGS, H. S. Contributions to the study of the behavior of lower organisms. Publ. Carnegie Inst. No. 16, 8vo, 256 pp.
Review by YERKES, Science xx, pp. 750-753.
447. —. Asymmetry in certain lower organisms, and its biological significance. Mark Anniv. Vol. pp. 315-337.
448. —. Physical imitations of the activities of *Amæba*. Amer. Natural. xxxviii, pp. 625-642.
449. JOLLY, J. Influence de la température sur la durée des phases de la division indirecte. C.R. Ac. Sci. pp. 387-389.
450. JOUBIN, L. L'enseignement de la Malacologie au Muséum (Leçon d'ouverture du cours de Malacologie). [Historical.] Rev. gen. Sci. xv, pp. 174-182.
451. JULIN, C. Recherches sur la phylogenèse des Tuniciers. Développement de l'appareil branchial. Zeitschr. wiss. Zool. lxxvi, pp. 544-611.
Abstract by SEELIGER, Zool. Zentrbl. 1905, pp. 209-214.
452. KALLIUS, E. Sehorgan. Anat. Hefte. Ergebn. xiii, pp. 233-367.
Summary of recent work: bibliographic list pp. 233-241.
453. KANEKO, J. Künstliche Erzeugung von margines falciformes und arcus tendinei. Arch. Entwicklmech. xviii, pp. 317-376, pls. xix-xxi, 13 figg.
454. *KAPTEYN, J. C. Skew frequency curves in biology and statistics. Groningen, 1903.
Review, Science xix, pp. 575, 576, by ENGBERG.

455. KATHARINER, L. Ueber die Entwicklung von *Gyrodactylus elegans* v. Nrdm. Zool. Jahrb. Suppl. vii, pp. 519-550, pls. xxvi-xxviii.
Abstract by BRAUN, Zool. Zentrbl. 1905, pp. 18, 19.
456. —. Schwerkraftwirkung oder Selbstdifferenzierung. Arch. Entwicklmech. xviii, pp. 404-414, 1 fig.
457. *KEARTON, R. Wild Nature's Ways. London, 1903, 8vo, 296 pp., 200 illustrations.
Review, Rev. Scient. (5) i, p. 175.
458. KELLER, C. Ueber die Herkunft der Tierwelt des Kantons Tessin. Verh. schweiz. Ges. lxxxvi, pp. 89-101.
459. *——. Naturgeschichte der Haustiere. Berlin, 1904, 8vo, 304 pp. [From Zool. Anz. Bibl. xi, p. 73.]
460. KELLOGG, V. L. Restorative regeneration in nature of the starfish *Linckia diplax* (Müller & Troschel). J. exp. Zool. i, pp. 353-356.
461. —. Regeneration in larval legs of silkworms. T. c. pp. 593-599.
462. —. Influence of the primary reproductive organs on the secondary sexual characters. T. c. pp. 601-605.
463. —. Amitosis in the egg follicle cells of insects. Science xix, pp. 392, 393.
464. — & BELL, R. G. Notes on insect bionomics. J. exp. Zool. i, pp. 357-367.
465. — & —. Studies of variation in Insects. P. Washington Ac. vi, pp. 203-332, figg. 1-81.
466. KEMNA, A. La taille des animaux. Bull. Soc. zool. malac. Belgique 1904, pp. li-lxxxi.
467. —. L'origine de la corde dorsale. T. c. pp. lxxxv-clvii.
468. —. Les structures cérébrales dorsales chez les Vertébrés inférieurs. T. c. pp. clxvi-cc.
469. KERR, J. GRAHAM. Note on the developmental material of *Polypterus* obtained by the late Mr J. S. Budgett. Rep. Brit. Ass. 1904, pp. 604, 605.
470. KERSTEN, H. Biologie und Philosophie. Einige Bemerkungen zu Reinke's "Einleitung in die theoretische Biologie." Zeitschr. Naturw. lxxvi, pp. 417-430.
471. KIDD, W. The relation between muscular activity and beauty of form in animals. Tr. W. Kent Soc. 1903-1904, pp. 46-57.
472. KING, H. D. Notes on regeneration in *Tubularia crocea*. Biol. Bull. vi, pp. 287-306, 7 figg.
473. KJELBERG, K. Beiträge zur Entwicklungsgeschichte des Kiefergelenks. Morphol. Jahrb. xxxii, pp. 159-188.
474. KLOCKE, E. Tiergeographische Studien über Hokkaido. Annot. zool. Japon. v, pp. 57-112, pl. iv.
475. KNUDSEN, M. Plankton [of Northern Seas]. Bull. internat. expl. Mer 1904/1905, D, pp. 1-103.
476. *KOENIG, E. Die Entstehung des Lebens auf der Erde. Berlin 1904, viii+334 pp.
Noticed, Zool. Zentrbl. 1905, p. 68.

477. KÖLLIKER, A. Die Entwicklung und Bedeutung des Glaskörpers. Zeitschr. wiss. Zool. lxxvi, pp. 1-25, pls. i-iv.
478. KOLLMANN, J. Wilhelm His. [With portrait and bibliographic list.] Verh. Ges. Basel xv, pp. 434-464.
479. KÖNIG, W. The problem of biology from the psychiatric aspect. Lancet 1904, ii, p. 536.
480. ——. The problem of heredity from the psychiatric aspect. Brit. Med. J. 1904, ii, pp. 965-972.
481. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au Lac Baïkal pendant l'été de 1902. Arch. Zool. exp. xxxii, pp. 1-26, pl. 1.
482. KORSCHULT, E. Zur Orthographie der Tiernamen und zoologischen Fachausdrücke. Zool. Anz. xxvii, p. 185.
483. ——. Ueber Doppelbildungen bei Lumbriciden. Zool. Jahrb. Suppl. vii, pp. 257-300, pls. xiii, xiv.
484. KOSTANECKI, K. Cytologische Studien an künstlich parthenogenetisch sich entwickelnden Eiern von *Mactra*. Arch. mikr. Anat. lxiv, pp. 1-98, pls. i-v.
485. ——. Über die Veränderungen im Inneren des, unter dem Einfluss von KCl Gemischen künstlich parthenogenetisch sich entwickelnden, Eis von *Mactra*. Bull. Ac. Cracovie 1904, pp. 70-91.
Abstract by FICK, Zool. Zentrbl. 1904, p. 798.
486. *KRAEMER, HANS. Weltall und Menschheit. Geschichte der Erforschung der Natur und der Verweitung der Naturkräfte im Dienste der Völker. 5 Bänden. Berlin und Leipzig, Bong & Co., 8vo, ca. 2000 illustrations.
Review by v. BUTTEL-REEPEN, Arch. Rassen i, pp. 458-461.
487. KRAEPELIN, K. and others. Verhandlung über den biologischen Unterricht an höheren Schulen. Verh. Ges. deutsch. Naturf. lxxv, i, pp. 145-160.
488. KREMPF, A. Sur une transformation de l'appareil tentaculaire chez certains espèces de *Madrepora*. C.R. Ac. Sci. cxxxviii, pp. 1518-1521.
489. KULCZYCKI, W. Résultats des dernières explorations sur les animaux sous-marins des océans atlantique et indien. Kosmos polski. xxviii, pp. 453-468. [In Polish.]
490. KUNITZKY, J. Die Entstehung und Entwicklung der Cuticularhäuschen auf den Pfoten von *Platydictylus mauritanicus*. Trav. Soc. St. Petersb. xxxiv, Zool. xxxiv, pp. 1-18, pl. i. [In Russian with Summary in German.]
491. LABBÉ, A. Sur la formation des tétrades et les divisions maturatives dans le testicule du Homard. C.R. Ac. Sci. cxxxviii, pp. 96-99.
492. ——. Sur la polyspermie normale et la culture des spermatozoïdes. Op. cit. cxxxix, pp. 75-77.
493. ——. La maturation des spermatides et la constitution des spermatozoïdes chez les Crustacés décapodes. Arch. zool. exp. Notes 1904, pp. i-xiv.
494. LADENBURG, A. Über den Einfluss der Naturwissenschaften auf die Weltanschauung. Verh. Ges. deutsch. Naturf. lxxv, i, pp. 29-43.

495. LAGOWSKI, S. André Sniadecki et sa "theorie des êtres organisés" au centenaire de sa première édition. *Kosmos polski*. xxix, pp. 184-265.

The articles are in Polish.

496. LAKOWITZ, —. Die gegenwärtige Lage des biologischen Unterrichts an den höheren Lehranstalten. *Schr. Ges. Danzig* xi, pp. 82-92.
497. LAMEERE, A. L'évolution des ornements sexuels. *Bull. Ac. Belgique* 1904, pp. 1327-1364.
498. LANG, A. Ueber Vorversuche zu Untersuchungen über die Varietätenbildung von *Helix hortensis* Müller und *Helix nemoralis* L. *Festschr. Haeckel* [Denk. Ges. Jena xi], pp. 437-506.
Summary by L. PLATE, *Arch. Rassen* i, pp. 604, 605.
499. —. Sul significato biologico della bellezza di una parte della fauna marina. (Conferenza scientifico-popolare.) *Verh. schweiz. Ges.* lxxxvi, pp. 102-117.
500. LANGLEY, J. N. & ANDERSON, H. K. The union of different kinds of nerve fibres. *J. Physiol.* xxxi, pp. 365-391.
501. — & —. On autogenetic regeneration in the nerves of the Limbs. *T. c.* pp. 418-428.
LARGUIER DES BANCELS. [See HENRI & LARGUIER DES BANCELS (390).]
502. LANKESTER, E. R. The structure and classification of the *Arthropoda*. *Quart. J. Micr. Sci.* xlvii, pp. 523-582, pl. xlii.
A reprint of matter from 10th Ed. *Encycl. Brit.* with some additions.
503. —. The structure and classification of the *Arachnida*. *Op. cit.* xlviii, pp. 165-270.
504. — and others. The History of the collections contained in the Natural History departments of the British Museum. Vol. i. [Libraries, Botany, Geology, Minerals.] London, 1904, xvii + 442 pp.
505. *LATTER, O. H. The natural history of some common animals. Cambridge, 1904, x + 331 pp.
Review *Nature* lxx, p. 551.
506. LAUTERBORN, R. Die cyklische oder temporale Variation von *Anuræ cochlearis*. *Verh. Ver. Heidelb.* vii, pp. 529-621.
507. LÉCAILLON, A. Sur la biologie et la psychologie d'une Araignée (*Chiracanthium carnifex* Fabricius). *Annee psychol.* x, pp. 63-83.
508. LE DANTEC, F. L'enseignement des Sciences naturelles comme instrument d'éducation philosophique. *Rev. gen. Sci.* xvi, pp. 276-283.
Teaching of evolution.
509. —. L'hérédité des diathèses ou hérédité mendélienne. *Rev. Scient.* (5) i, pp. 513-517.
510. *LE DOUBLE, —. Traité des variations des os du crane de l'homme, et de leur signification au point de vue de l'anthropologie zoologique. Paris, ? 400 pp., illustrations.
Review, by DWIGHT, *Science* xix, pp. 302, 303.
511. LEDUC, S. Diffusion des liquides: son rôle biologique. *C.R. Ac. Sci.* cxxxix, pp. 986-988.
LEE, ALICE. [See BARRINGTON, LEE & PEARSON (45).]

512. LEE, A. BOLLES. La structure du spermatozoïde de l'*Helix pomatia*. Cellule xxi, pp. 71-116, 1 pl.
Brief abstract, Zool. Zentrbl. 1905, p. 53.
513. LEE, T. G. Implantation of the Ovum in *Spermophilus tridecemlineatus* Mitch. Mark Anniv. Vol. pp. 417-436, pls. xxx, xxxi.
514. LÉGER, L. La reproduction sexuée chez les *Stylorhynchus*. Arch. Protistenk. iii, pp. 303-357, pls. xiii, xiv.
515. — & DUBOSCQ, O. Notes sur les Infusoires endoparasites. Arch. Zool. exp. xxxii, pp. 337-355, pl. xiv.
516. LENDENFELD, R. VON. Bemerkungen über die Bedeutung der Rückbildung für die Anpassung. Arch. Rassen i, pp. 793-797.
517. —. Karl Pearsons Untersuchungen über verwandtschaftliche Ähnlichkeit und Vererbung geistiger Eigenschaften. T. c. pp. 78-83.
518. —. Über die deszendenztheoretische Bedeutung der Spongiosa. Biol. Centrbl. xxiv, p. 635.
519. L'EOST, —. Rapport au sujet d'un animal inconnu rencontré en baie d'Along par la Décidée. Bull. Soc. zool. France xxix, pp. 115-117.
520. LEVENE, P. A. The autolysis of animal organs. Amer. J. Physiol. xi, pp. 437-447. [I. Testes. II. Spleen.]
521. —. The autolysis of animal organs. II. Hydrolysis of fresh and self-digested glands. Op. cit. xii, pp. 276-296. [Pancreas, Liver, Spleen.]
522. LEVI, G. Über die Entwicklung und Histogenese der Ammonshornformation. Arch. mikr. Anat. lxiv, pp. 389-404, pl. xxiv.
523. —. Nuovi fatti pro e contro la teoria del neurone. Monit. Zool. ital. xv, pp. 130-147.
524. —. Sull' origine delle cellule sessuali. Nota preliminare. T. c. pp. 244-246.
525. LEVY, O. Über den Einfluss von Zug auf die Bildung faserigen Bindegewebes. Zugleich ein Beitrag zur Kenntnis der Sehnenvernarbung. Experimentelle Untersuchung. Arch. Entwicklmech. xviii, pp. 184-247, pls. xi-xiii, 1 fig.
526. LEWIS, W. H. Experimental studies on the development of the eye in Amphibia. I. On the origin of the Lens. *Rana palustris*. Amer. J. Anat. iii, pp. 505-536, 42 text-figg.
Abstract, Proc. Assoc. Amer. Anat. Session xvii, pp. xiii-xv, inserted at end of Amer. J. Anat. iii.
527. LILLIE, F. R. Further experiments in the embryology of the Chick. Biol. Bull. vi, pp. 309, 310.
528. —. Experimental studies on the development of organs in the embryo of the Fowl (*Gallus domesticus*). II. The development of defective embryos and the power of regeneration. Biol. Bull. vii, pp. 33-54, 10 figg.
529. LINDEN, GRAFIN M. VON. Karl, Rudolf, Dietrich Fickert. Leopoldina 1904, pp. 52-54.
530. —. Einfluss des Stoffwechsels der Schmetterlingspuppe auf Flügelfärbung und Zeichnung des Falters. Ein Beitrag zur Physiologie der Varietäten-Bildung. Arch. Rassen i, pp. 477-518.

531. [LINDEN, GRAFIN M. VON.] Die Ergebnisse der experimentellen *Lepidopterologie*. Biol. Centrbl. xxiv, pp. 615-634.
532. LINDER, C. Étude de la faune pélagique du Lac de Bret. Rev. Suisse Zool. xii, pp. 149-258.
Review by ZACHARIAS, Biol. Centrbl. xxiv, pp. 767, 768. Abstract by ZSCHOKKE, Zool. Zentrbl. 1904, pp. 712-714.
533. LINDSAY, J. Millport marine biological station [chiefly historical]. Tr. Edinb. Field Soc. v, pp. 66-75.
534. LISTON, W. G. Note on sexual dimorphism. J. Bombay Soc. xvi, pp. 39-43.
535. *LLOYD, F. E. & BIGELOW, M. E. The teaching of biology in the secondary schools. New York, 1904, viii+491 pp.
Review Amer. Natural. xxxix, pp. 47-50, and by W. F. GANONG, Science xx, pp. 880-882.
536. LO BIANCO, S. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. Jena, 1904, 8vo, vi+91 pp., xli pls., 1 map.
Translation of paper in Mt. Stat. Neapel 1901.
537. LOEB, J. The recent development of biology. Science xx, pp. 777-786.
538. —. Weitere Versuche über heterogene Hybridisation bei Echinodermen. Arch. ges. Physiol. civ, pp. 325-350, 2 text-figg.
539. —. Further experiments on the fertilization of the egg of the sea-urchin, with sperm of various species of starfish and a Holothurian. Univ. Calif. publ. Phys. i, No. 11, pp. 83-85.
540. —. Further experiments on heterogeneous hybridization in Echinoderms. Op. cit. ii, pp. 5-30, 2 text-figg.
541. —. Ueber den Einfluss der Hydroxyl- und Wasser-stoffionen auf die Regeneration und das Wachsthum der Tubularien. Arch. ges. Physiol. ci, pp. 340-348.
542. —. On the influence of the reaction of the sea-water on the regeneration and growth of Tubularians. Univ. Calif. publ. Phys. i, pp. 139-147.
543. —. Concerning dynamic conditions which contribute toward the determination of the morphological polarity of organisms. (First communication.) T. c. pp. 151-161, 7 figg.
544. —. Ueber dynamische Umstände, welche bei der Bestimmung der morphologischen polarität der organismen mitwirken. Arch. ges. Physiol. cii, pp. 152-162, 7 text-figg.
545. —. Ueber Befruchtung, künstliche Parthenogenese und Cytolyse des Seeigels. Op. cit. ciii, pp. 257-265.
546. —. Ueber die natur der Lösungen, in welchen sich die Seeigeleier zu entwickeln vermögen. T. c. pp. 503-509.
547. —. The control of heliotropic reactions in fresh water Crustaceans by chemicals, especially CO₂. (Preliminary communication.) Univ. Calif. publ. Physiol. ii, pp. 1-3.
548. LOEB, LEO, & STRONG, R. M. On regeneration in the pigmented skin of the frog, and on the character of the Chromatophores. Amer. J. Anat. iii, pp. 275-283.
549. LOISEL, G. Revue annuelle d'embryologie. Rev. gen. Sci. xv pp. 86-96, 144-153.

550. [LOISEL, G.] Recherches sur les poisons génitaux de différents animaux. C.R. Ac. Sci. cxxxix, pp. 227-229.
551. —. Substances toxiques extraites des œufs de Tortue et de Poule. T. c. pp. 325, 326.
552. —. Sur les sécrétions chimiques de la glande génitale male (à propos d'une prétendue glande interstitielle du testicule). C.R. Soc. Biol. lvi, pp. 27-30.
553. —. Les caractères sexuels secondaires et le fonctionnement des testicules chez la grenouille. T. c. pp. 446-448.
554. —. Sur l'origine et la double signification des cellules interstitielles du testicule. T. c. pp. 448-451.
555. —. Recherches sur la descendance des pigeons voyageurs. (Note préliminaire.) C.R. Ass. franc. xxxii, 2, pp. 760-764.
556. —. Sur Ernst Haeckel. Bull. Soc. Anthropol. Paris 1904, pp. 197-199.
557. LORAND, A. Quelques considérations sur les causes de la sénilité. C.R. Soc. Biol. lvii, pp. 500-502.
558. LOVEJOY, A. O. Some eighteenth century evolutionists. II. Pop. Sci. Month. lxxv, pp. 323-340.
559. LÖWENTHAL. Atlas zur vergleichenden Histologie der Wirbelthiere. Review by RETTERER, J. Anat. Physiol. xl, pp. 446, 447.
560. LUBOSCH, W. Untersuchungen über die Morphologie des Neunauge. Jena. Zeitschr. xxxviii, pp. 673-724, pl. xxiii.
561. —. Das corpus luteum der Säugetiere und seine Beziehungen zu dem der Anamnier. Zur Abwehr. Anat. Anz. xxv, pp. 404-416.
562. LUSTIG, A. L'immunità acquisita contro i veleni, può essere trasmessa dai genitori alla prole? (Contributo alle conoscenze sulla trasmissione di caratteri acquisiti. Rend. Acc. Lincei xiii, 1, pp. 65-69. Summary, Arch. Rassen i, pp. 453, 454.
563. LUTHER, A. Die *Eumesostominen*. Zeitschr. wiss. Zool. lxxvii, pp. 1-273, pls. i-ix.
Anatomy, natural history, systematic.
564. LUTZ, E. The relation between the law of ancestral heredity and Mendelianism. [Abstract.] Science xix, p. 214.
565. —. Biological interpretation of skew variation. [Abstract.] Science xix, p. 214.
566. LUTZ, F. E. Variation in Bees. Biol. Bull. vi, pp. 217-219. [Cf. PHILLIPS (723).]
567. LYELL, J. Goethe as a Scientist; and his relation to the present position of evolution and the doctrine of the descent of man. Tr. Perthshire Soc. iv, pp. 43-58.
568. LYON, E. P. A biological examination of distilled water. Biol. Bull. vi, pp. 198-202.
569. —. Rhythms of susceptibility and of carbon dioxide production in cleavage. Amer. J. Physiol. xi, pp. 52-58.
570. —. On Rheotropism. I. Rheotropism in Fishes. Op. cit. xii, pp. 149-161.
571. —. Rhythms of susceptibility and of CO₂ production in cleavage. Biol. Bull. vi, p. 323.

572. M., J. E. Henry Alleyn Nicholson. Obit. R. Soc. London i, pp. 35-38.
573. M., W. C. Sir William Flower. Obit. R. Soc. London i, pp. 72-89, portrait.
574. MACALLUM, A. B. The Palæochemistry of the Ocean in relation to animal and vegetable protoplasm. Tr. Canad. Inst. vii, pp. 535-562.
575. —. The Palæochemistry of the Ocean in relation to animal and vegetable protoplasm. Stud. Univ. Toronto Physiol. Ser. No. 5, 30 pp.
576. — and others. The micro-chemistry of cells. Report of Committee. Rep. Brit. Ass. 1903, pp. 310-312.
577. MACBRIDE, E. W. The early stages in the development of *Ophiothrix fragilis*. Amer. Natural. xxxviii, pp. 508-511.
578. MACFADYEN, A. The application of low temperatures to the study of biological problems. Rep. Brit. Ass. 1903, pp. 609-611.
579. MACNAMARA, N. C. Beweisschrift betreffend die gemeinsame Abstammung der Menschen und der Anthropoiden Affen. Arch. Anthrop. xxxi, pp. 77-93, 1 fig.
580. MAEHRENTHAL, F. C. v. Entwurf von Regeln der zoologischen Nomenclatur. Als Grundlage für eine Neubearbeitung der internationalen Nomenclatur-Commission. Zool. Ann. i, pp. 89-138.
581. MAGGI, L. L' anatomia comparata secondo Vogt e Yung. Rend. Ist. Lombardo xxxvi, pp. 1123-1128.
 MAILLARD, L. [See PRENANT, BOUIN & MAILLARD (738).]
582. MALAQUIN, A. La céphalisation chez les Annélides et la question du métamérisme. C.R. Ac. Sci. cxxxviii, pp. 821-824.
583. MANZI, L. Gli dei distruttori degli Anofeli e l' uso antico delle fumigazioni e delle reti contro di essi. Arch. parasit. viii, pp. 88-109.
584. MARCACCI, A. Sarebbe possibile la vita nell' aria atmosferica quando l' azoto fosse sostituito dall' idrogeno? Mem. Ist. Lombardo xix, pp. 229-254.
585. MARCEAU, F. Sur le mécanisme de la contraction des fibres musculaires lisses dites à double striation oblique ou à fibrilles spiralées et en particulier de celles des muscles adducteurs des Lamellibranches. C.R. Ac. Sci. cxxxix, pp. 70-72.
586. MARCHAL, P. Recherches sur la biologie et le développement des *Hyménoptères* parasites. I. La polyembryonie spécifique ou germinogonie. Arch. Zool. exp. xxxii, pp. 257-335, pls. ix-xiii.
587. —. Le déterminisme de la polyembryonie spécifique et le déterminisme du sexe chez les *Hyménoptères* à développement polyembryonnaire. C.R. Soc. Biol. lvi, pp. 463-470.
588. —. Sur la formation de l'intestin moyen chez les *Platygaster*. C.R. Soc. Biol. lvi, p. 1091. [*Hymenoptera*.]
589. MARCHI, A. DE. Gli animali nelle figurazioni sepolcrali della Latinità pagana, a proposito di un cippo milanese. Rend. Ist. Lombardo xxxvii, pp. 381-401.
590. MARECHAL, J. Ueber die morphologischer Entwicklung der Chromosomen im Keimbläschen des Selachiereies. Anat. Anz. xxv, pp. 383-398. Abstract by FICK, Zool. Zentrbl. 1905, p. 57.

591. [MARINE BIOLOGICAL ASSOCIATION.] Plymouth marine invertebrate fauna: being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. J. Mar. biol. Ass. vii, pp. 155-298.
592. MARINESCO, G. Études histologiques sur le mécanisme de la sénilité. Rev. gen. Sci. xv, pp. 1116-1129, 16 figg.
593. [MARK, E. L. Mark Anniversary Volume. Cf. EIGENMANN (270); also the special Records.]
Review, Nature lxxi, pp. 169, 170.
594. MARR, J. E. & SHIPLEY, A. E. Handbook to the Natural History of Cambridgeshire. Cambridge 1904, viii+260 pp., 3 maps.
British Association Guide-book.
595. MATHEWS, A. P. The relation between the solution tension and physiological action of the elements. Biol. Bull. vi, pp. 312-314.
596. MATSUOKA, M. Über Gewebsveränderungen der künstlich erzeugten Kyphose der Schwanzwirbelsäule des Kaninchens. Arch. Entwickl.-mech. xviii, pp. 251-260, pl. xv.
597. MATTIESEN, E. Ein Beitrag zur Embryologie der Süsswasserden-drocoelen. Zeitschr. wiss. Zool. lxxvii, pp. 274-361, pls. x-xiii.
598. MAURER, F. Das Integument eines Embryo von *Ursus arctos*. Ein Beitrag zur Frage der Haare und Hautdrüsen bei Säugetieren. Festschr. Haeckel [Denk. Ges. Jena xi], pp. 507-538, pl. xv.
- 598A. MAYER, P. [and others]. Zoologischer Jahresbericht für 1903. Berlin, 8vo, 1904, numerous paginations.
599. MCCLENDON, J. F. On the anatomy and embryology of the nervous system of the Scorpion. Biol. Bull. viii, pp. 38-55.
600. MEEK, A. Northumberland sea fisheries Committee. Report on the scientific investigations for the year 1904. Newcastle, 1904, 87 pp.
Cf. various articles in special Records.
601. MEISENHEIMER, J. [Review of Halban on determination of sex, cf. Zool. Rec. 1903, Gen. Sub. (302).] Arch. Rassen i, pp. 757-759.
602. —. Über die Bedeutung des Darwinischen Selektionsprinzips und Probleme der Artbildung. Arch. Rassen i, pp. 598-603. [Review of PLATE, Zool. Rec. 1903, Gen. Sub. (599).]
603. MEISSNER, W. Notiz über das Plankton des Flusses Murgab (Merv, Turkestan). Zool. Anz. xxvii, pp. 648-650.
604. MELDOLA, R. The chemical synthesis of vital products, and the inter-relations between organic compounds. Vol. I. London, 1904, xvi+338 pp.
Review, Nature lxxi, pp. 170-172.
605. MELZER, S. J. Vitalism and mechanism in biology and medicine. Science xix, pp. 18-22.
606. MERKEL, F. Die Rechts- und Linkshändigkeit. Anat. Hefte. Ergebn. xiii, pp. 708-736.
Summary of recent work: bibliographic list of 74 works, pp. 708-711.
607. — & BONNET, R. Ergebnisse der Anatomie und Entwickelungs-geschichte. xiii, 1903. Wiesbaden, 1904, ix+747 pp.
This takes the form of an account of work published. The larger part of Vol. xiii relates to literature of 1903. Cf. WEIDENREICH (926), BARDLEBEN (40), OPPEL (680), KALLIUS (452), BARFURTH (42), WINDLE (950), STIEDA (862), FELIX (282), MERKEL (606).

608. MERRIAM, C. H. Alaska. Harriman Alaska Expedition. With cooperation of Washington Academy of Sciences. New York, 8vo.
A series of volumes, of which I have seen only viii and ix, devoted to Insects.
MERY, JANET R. [See TORREY & MERY (883).]
MESNIL, F. [See CAULLERY & MESNIL (175, 176).]
609. METALNIKOFF, N. Sur un procédé nouveau pour faire des coupes microscopiques dans les animaux pourvus d'un tégument chitineux épais. Arch. zool. exp. Notes 1904, pp. lxvi, lxvii.
610. METCALF, M. M. *Neritina virginea* variety *minor*. Amer. Natural. xxxviii, pp. 565-569, i plate.
611. —. Mutation and selection. [Letter.] Science xix, pp. 74-76.
Cf. COOK (204).
612. *—. An outline of the theory of Organic Evolution. New York, 1904, 204 pp.
Review, Lancet 1905, i, p. 803.
613. METSCHNIKOFF, E. Zur Geschichte tierischer Gesellschaften. Ann. Naturphilos. iii, pp. 324-338.
614. *—. Studien über die Natur des Menschen. Eine optimistische Philosophie. Leipzig, 1904, 399 pp.
615. MEYER, A. B. Bericht über einige neue Einrichtungen des königlichen zoologischen und anthropologischethnographischen Museums in Dresden. 4to, 25 pp., xx pls.
Review, Science xx, p. 502.
616. MEYER, R. Ueber die Beziehung der Urnierenkanälchen zum Cölom-epithel nach Untersuchungen an Meerschweinchen Embryonen. Anat. Anz. xxv, pp. 25-30.
617. *MIALL, L. C. House, garden and field, a collection of short nature studies. London, 1904, x+316 pp.
Review, Nature lxxi, p. 52.
618. MICHEL, H. Herbert Spencer et Charles Renouvier. Année Psychol. x, pp. 142-160.
619. MILLS, W. Some aspects of the development of comparative Psychology. Science xix, pp. 745-757.
620. MINCHIN, E. A. International Catalogue of scientific literature. First annual issue. N. Zoology. Part I Authors' Catalogue, xvi+368 pp. Part II Subject Catalogue, pp. 369-1528. London, 1904, 8vo.
621. MINERVINI, R. Des Capsules Surrénales. Développement—structure—fonctions. J. Anat. Phys. xl, pp. 449-492, 634-667, pls. xi-xiv.
622. MINOT, C. S. An experiment with telegony. Rep. Brit. Ass. 1904 p. 606.
623. —. Rejuvenation. T. c. p. 606.
624. —. The Harvard embryological collection. T. c. p. 606.
625. M'INTOSH, —. On the distribution of marine animals. Ann. Nat. Hist. xiii, pp. 117-130.
Abstract by MEISENHEIMER, Zool. Zentrbl. 1904, p. 650.
626. MIRANDE, M. Sur une nouvelle fonction du tégument des *Arthropodes*. C.R. Soc. Biol. lvii, pp. 404, 405.

627. MITCHELL, P. CHALMERS. Official guide to the gardens of the Zoological Society of London. First edition. London, 1904, 112 pp., 50 figg., 1 map.
628. MOENKHAUS, WILLIAM J. The development of the Hybrids between *Fundulus heteroclitus* and *Menidia notata* with especial reference to the behaviour of the maternal and paternal chromatin. Amer. J. Anat. iii, pp. 29-64, 4 pls.
629. MOLL, J. W. Die Mutationstheorie. III Teil, bearbeitet von Hugo de Vries. Biol. Centrbl. xxiv, pp. 145-162, 193-210 & 225-241.
For part I, see Zool. Rec. Gen. Sub. 1901, and for part II, 1902. They appeared in Vols. xxii & xxiii of the Biol. Centrbl. The work is botanical but of interest to Zoologists.
630. MOLLISON, T. Die ernährende Tätigkeit des Follikel-epithels im Ovarium von *Melolontha vulgaris*. Zeitschr. wiss. Zool. lxxvii, pp. 529-545, pls. xxi, xxii.
631. MONACO, ALBERT PRINCE DE. Sur la cinquième campagne scientifique de la Princesse Alice II. C.R. Ac. Sci. cxxxviii, pp. 1398-1400.
632. ——. Résultats des campagnes scientifiques accomplies sur son Yacht. Fasc. xxv, xxvi. Monaco, 1904.
See MOLLUSCA, VAYSSIÈRE (627) & SPONGIAE, TOPSENT (50).
633. ——. Les progrès de l'océanographie. Bull. Mus. Monaco, No. 6, 13 pp.
634. ——. Sur la cinquième campagne scientifique de la "Princesse-Alice II." Op. cit. No. 13, 4 pp.
635. ——. Progrès de la biologie marine. Op. cit. No. 14, 7 pp.
636. ——. Les progrès de l'océanographie. Rev. Scient. (5) i, pp. 161-166.
637. MONKS, SARAH P. Variability and autotomy of *Phataria*. P. Ac. Philad. lvi, pp. 596-600, pl. xlii.
638. MONTGOMERY, T. H. Prof. Valentin Haecker's critical review on bastardization and formation of the sex cells. Zool. Anz. xxvii, pp. 630-636.
Relates to HÄCKER (358), and cf. HÄCKER (359).
639. ——. Some observations and considerations upon the maturation phenomena of the germ cells. Biol. Bull. vi, pp. 136-157, 3 pls.
640. ——. The morphological superiority of the female sex. P. Amer. Phil. Soc. xliii, pp. 365-379.
641. ——. The main facts in regard to the cellular basis of heredity. T. c. pp. 5-14.
642. ——. The development and structure of the larva of *Paragordius*. P. Ac. Philad. 1904, pp. 738-755, pls. xlix, l.
643. MONTI, R. Limnologische Untersuchungen über einige italienische Alpenseen. Forscher. Plon xi, pp. 252-275.
644. MORGAN, T. H. Notes on regeneration. Biol. Bull. vi, pp. 159-172.
645. ——. Self-fertilisation induced by artificial means. J. exp. Zool. i, pp. 135-178.
646. ——. Regeneration of heteromorphic tails in posterior pieces of *Planaria simplicissima*. T. c. pp. 385-393.

647. [MORGAN, T. H.] The dispensibility of the constant action of gravity and of a centrifugal force in the development of the toad's egg. *Anat. Anz.* xxv, pp. 94-96.
648. —. The control of heteromorphosis in *Planaria maculata*. *Arch. Entwicklmech.* xvii, pp. 683-695, 1 fig.
649. —. Germ-layers and regeneration. *Op. cit.* xviii, pp. 262-264.
650. —. The relation between normal and abnormal development of the embryo of the frog (iii), as determined by some abnormal forms of development. *T. c.* pp. 507-534, pls. xxxi, xxxii.
651. —. An analysis of the phenomena of organic 'polarity.' *Science* xx, pp. 742-748.
652. —. Polarity and axial heteromorphosis. *Amer. Natural.* xxxviii, pp. 502-505.
653. *—. Evolution and adaptation. New York, 1903, 470 pp.
Review by BASHFORD DEAN, *Science* xix, pp. 221-224; and by W. E. C., *Amer. Natural.* xxxviii, pp. 398, 399.
654. *—. Die Entwicklung des Froscheies. Eine Einleitung in die experimentelle Embryologie. Übersetzt von B. SOLGER. Leipzig, 1904, 8vo, xv+291 pp.
655. — & DIMON, ABIGAIL C. An examination of the problems of physiological "polarity" and of electrical polarity in the earthworm. *J. exp. Zool.* i, pp. 331-347.
656. — & SCHIEDT, ALICE E. Regeneration in the Planarian *Phagocata gracilis*. *Biol. Bull.* vii, pp. 160-165.
657. — & STEVENS, N. M. Experiments on polarity in *Tubularia*. *J. exp. Zool.* i, pp. 559-591.
658. — & TORELLE, ELLEN. The relation between normal and abnormal development (iv), as determined by Roux's experiment of injuring the first formed blastomeres of the frog's egg. *Arch. Entwicklmech.* xviii, pp. 535-554, pl. xxxiii.
659. MOROFF, T. Über die Entwicklung der Kiemen bei Fischen. *Arch. mikr. Anat.* lxiv, pp. 189-213, pls. xi, xii.
660. MOSER, FANNY. Beiträge zur vergleichenden Entwicklungsgeschichte der Schwimmblase. *Arch. mikr. Anat.* lxiii, pp. 532-574, pls. xxii-xxv.
661. MOSZKOWSKI, M. O. Maas. Einführung in die experimentelle Entwicklungsgeschichte (Entwicklungsmechanik). *Biol. Centrbl.* xxiv, pp. 318-320.
Review of MAAS, (476) *Gen. Sub. Zool. Rec.* 1903.
662. MOTT, F. W., HALLIBURTON, W. D. & EDMUNDS, A. Regeneration of Nerves. (Preliminary Communication.) *J. Physiol.* xxxi, pp. vii-xii.
663. *MÜLLER, R. Jahrbuch der landwirtschaftlichen Pflanzen- und Tierzüchtung. Sammelbericht über die Leistungen in der Zuchtungskunde und ihren Grenzgebieten. Herausg. von Prof. Dr Robert Müller. I. Die Leistungen des Jahres 1903. Stuttgart, 1904. 414 S.
664. MUNSON, J. P. Researches on the oogenesis of the tortoise, *Clemmys marmorata*. *Amer. J. Anat.* iii, pp. 311-347, 7 pls.
665. MURBACH, L. The static function in *Gonionemus*. *Biol. Bull.* vi, pp. 317, 318.

666. MURRAY, J. A. Certain biological aspects in the general pathology of malignant new growths. Rep. Brit. Ass. 1904, pp. 598-600.
 —. [See also BASHFORD & MURRAY (46).]
667. MUTHMANN, E. Über die erste Anlage der Schilddrüse und deren Lagebeziehung zur ersten Anlage des herzens bei Amphibien, insbesondere bei *Triton alpestris*. Anat. Hefte. Arb. xxvi, pp. 1-48, 43 textfigg.
668. NEAL, H. V. The development of the ventral nerves in Selachii. I. Spinal ventral nerves. Mark. Anniv. Vol. pp. 291-313, pls. xxii-xxiv.
669. NELSON, J. A. The early development of *Dinophilus*; a study in cell-lineage. P. Ac. Philad. 1904, pp. 687-737, pls. xliii-xlviii.
670. *NERESHEIMER, E. Konjugation und natürlicher Tod. Nat. Wochenschr. xix, pp. 604, 605. [From Zool. Anz. Bibl. x, p. 109.]
671. NEUMANN, E. Einige weitere Bemerkungen über die Bedeutung gewisser Missbildungen für die Entwicklungsmechanik. Arch. Entwicklmech. xviii, pp. 296-303.
 Cf. GOLDSTEIN (335), t. c. p. 584.
672. NICOLAS, A. Recherches sur le développement du pancréas, du foie et de la rate chez le sterlet (*Acipenser ruthenus*). Arch. Biol. xx, pp. 425-460, pls. x-xii.
673. —. Recherches sur l'embryologie des Reptiles. iv. La segmentation chez l'orvet (*Anguis fragilis*). T. c. pp. 611-658, pls. xvii-xix.
674. NORRENBURG, J. Geschichte des naturwissenschaftlichen Unterrichts an den höheren Schulen Deutschlands. Leipzig, 1904, v+76 pp. (Samml. naturw. pädag. i, heft. 6).
675. NOWLIN, NADINE. The vitelline body in spider eggs. Kansas Univ. Sci. Bull. ii, No. 10, pp. 281-302, pls. xii-xv.
676. NUSBAUM, J. Vergleichende Regenerationsstudien. II. Ueber die Regeneration des Vorderteiles des Enchytraeidenkörpers nach einer künstlichen Operation. Arch. polon. ii, pp. 233-259, pl. vii.
677. *——. Nouvelles recherches sur l'embryologie des *Isopodes*. Kosmos polski. xxviii, 1904, pp. 154-177.
 Abstract by HOYER, Zool. Zentrbl. 1905, pp. 130-132.
678. NUTTALL, G. H. F. Blood immunity and blood relationship: a demonstration of certain blood-relationships amongst animals by means of the precipitin test for blood, including original researches by G. S. GRAHAM-SMITH & T. S. P. STRANGEWAYS. Cambridge, 1904, 8vo, xii+444 pp.
 Review, Arch. parasit. viii, pp. 472, 473.
679. —. The precipitin test in the study of animal relationships. Rep. Brit. Ass. 1904, p. 607.
680. OPPEL, A. Verdauungs-Apparat. Anat. Hefte. Ergebn. xiii, pp. 165-232.
 Summary of recent work, mostly 1903; bibliographic list, pp. 165-174.
681. *——. Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbeltiere. Viertes Teil. Ausführapparat und Anhangsdrüsen der männlichen Geschlechtsorgane. Jena, 1904, x+432 pp.
 Review by F. H. A. MARSHALL, Nature lxx, p. 574.

682. ORLANDI, S. Rigenerazione cefalica naturale in alcune Maldanidi. *Atti Soc. Ligustica* xiv, pp. 160-164.
683. *ORTMANN, A. E. Bericht über die Fortschritte unserer Kenntniss von der Verbreitung der Tiere (1901-1903). *Geogr. Jahrb.* xxvi, pp. 447-477. [From *Zool. Anz. Bibl.* x, p. 210.]
684. OSBORN, H. F. The evolution of the horse. *Rep. Brit. Ass.* 1904, pp. 607, 608
685. —. Karl Alfred von Zittel. *Science* xix, pp. 186-188.
686. OSBORN, H. L. Amitosis in the embryo of *Fasciolaria*. *Amer. Natural.* xxxviii, pp. 869-884.
687. —. Amitosis in the embryo of *Fasciolaria*. [Abstract.] *Science* xix, p. 213.
688. OSGOOD, W. H. A biological reconnaissance of the base of the Alaska peninsula. *North Amer. Fauna*, No. 24, 86 pp., 7 pls. Account of a journey and of the mammals and birds.
689. OSTWALD, W. Experimentelle Untersuchungen über den Saisonpolymorphismus bei *Daphniden*. *Arch. Entwicklmech.* xviii, pp. 415-451, 7 figg.
690. OTTOLENGHI, B. Esperienze di partenogenesi artificiale. *Atti Soc. Ligustica* xiv, pp. 176-180.
691. OYAMA, R. Entwicklungsgeschichte des Deckhaares der weissen Maus (*Mus musculus* var. *alba*). *Anat. Hefte Arb.* xxiii, pp. 585-608, pls. xxvii-xxx.
692. PACKARD, A. S. The two chief faunæ of the Earth. [Abstract.] *Science* xix, p. 220.
693. —. Opisthenogenesis, or the development of segments, median tubercles and markings a tergo. *P. Amer. Phil. Soc.* xliii, pp. 289-294.
694. —. The origin of the markings of organisms (Pæcilogenesis) due to the physical rather than to the biological environment; with criticisms of the Bates-Müller hypotheses. *T. c.* pp. 393-450.
695. PALADINO, G. Sulla rigenerazione del parenchima e sul tipo di struttura dell' ovaja di Delfina. *Monit. Zool. ital.* xv, pp. 215-217.
696. PALMER, T. S. Index generum Mammalium: a list of the genera and families of Mammals. *North Amer. Fauna*, No. 23, 984 pp. Includes discussion of various points of nomenclature.
697. *PARKER, T. J. *Leçons de Biologie élémentaire*. Paris, 1904, 8vo, 496 pp., 127 illustrations.
Review by G. BOHN, *Rev. gen. Sci.* xvi, p. 531.
PARSONS, F. G. [See COPEMAN & PARSONS (206).]
698. PAULI, W. Allgemeine Physiko-Chemie der Zellen und Gewebe. Eigenschaften organischer Gallerten. *Ergebn. Physiol. Biochemie* iii, pp. 155-176.
699. PAVESI, P. Esquisse d'une faune Valdôtaine. *Atti Mus. Milano* xliii, pp. 191-260.
700. PAVIE, A. Mission Pavie Indo-Chine 1879-1895. *Études diverses*. III. Recherches sur l'histoire naturelle de l'Indo-Chine orientale. Paris, 1904, 4to, xxi+550 pp., xxv pls.
Descriptive matter by various specialists, dealt with in detail in the special records. Most of the matter is republication.

701. PEARL, R. The movements and reactions of fresh-water Planarians ; a study in animal behaviour. Quart. J. Micr. Sci. xlv, pp. 509-714.
702. — & DUNBAR, F. J. Variation and correlation in *Arceia*. [Abstract.] Rep. Michigan Ac. v, pp. 202-204.
703. — & FULLER, W. N. Variation and correlation in the earthworm. [Abstract.] T. c. pp. 200-202.
704. PEARSON, K. Mathematical contributions to the theory of evolution. XII. On a generalised theory of alternative inheritance, with special reference to Mendel's laws. Phil. Trans. A. Vol. 203, pp. 53-86.
705. —. On a criterion which may serve to test various theories of inheritance. P. R. Soc. London lxxiii, pp. 262-280.
706. —. Mendel's law. Nature lxx, pp. 626, 627. [Cf. a previous botanical note by LOCK, t. c. p. 601.]
707. —. A Mendelian's view of the law of ancestral inheritance. Biometrika iii, pp. 109-112.
708. —. On the laws of inheritance in man. II. On the inheritance of the mental and moral characters in man, and its comparison with the inheritance of the physical characters. T. c. pp. 131-190.
709. *—. On the inheritance of the mental and moral characters in man, and its comparison with the inheritance of physical characters. London Anthropolog. Inst.
Review, Nature lxx, p. 137.
— [See also BARRINGTON, LEE & PEARSON (45).]
710. PEEBLES, FLORENCE. The location of the chick embryo upon the blastoderm. J. exp. Zool. i, pp. 369-383, pls. i, ii.
711. PEIRCE, G. J. Certain undetermined factors in heredity and environment. Amer. Natural. xxxviii, pp. 285-293.
712. PELSENEER, P. Quelques problèmes zoologiques de l'Antarctique. C.R. Ass. franc. xxxii, 2, pp. 810-812.
713. —. La "ligne de Weber" limite zoologique de l'Asie et de l'Australie. Bull. Ac. Belgique 1904, pp. 1001-1022, and note by A. LAMEERE, p. 1022.
714. PÉREZ, C. Resorption phagocytaire des spermatozoïdes chez les Tritons. C.R. Soc. Biol. lvi, pp. 783, 784.
715. — & GENDRE, E. Sur l'ovogénèse du *Branchellion*. C.R. Soc. Biol. lvii, pp. 605, 606.
716. PERRIER, E. Les forces physiques et l'hérédité dans la production des types organiques. Rev. Scient. (5) i, pp. 481-489.
717. PETER, K. Einiges über die Gastrulation der Eidechse. Sechste Mitteilung zur Entwicklungsgeschichte der Eidechse. Arch. mikr. Anat. lxiii, pp. 659-700, pls. xxxi, xxxii.
718. PETERSEN, W. Über indifferente Charaktere als Artmerkmale. Biol. Centrbl. xxiv, pp. 423-431 and 467-473.
Relates to a review of his previous work by Jordan and concludes that physiological considerations must be included in discussions as to the origin of species.

719. PETRUNKEWITSCH, A. Künstliche Parthenogenese. Zool. Jahrb. Suppl. vii, pp. 77-138, pls. viii-x.
- 1, Einleitung. 2, Historisches zur Frage von der Individualität der Chromosomen. Zur Kritik der Boveri'schen Anschauung. 3, Das Verhalten der Chromosomen bei der künstlichen Parthenogenese der Seeigel. 4, Historisches zur Frage von dem Centrosom. Bau, Theilung, Individualität, und "de nova" Bildung des Centrosoms. 5, Das Verhalten des Centrosoms bei der künstlichen Parthenogenese der Seeigel. Centrosomen und Cytastere. 6, Das Wesen der künstlichen Parthenogenese und ihre Beziehungen zur natürlichen Parthenogenese.
720. *——. Gedanken über Vererbung. Freiburg i. Br. 1904, 83 pp. Abstract by FICK, Zool. Zentrbl. 1904, p. 780.
721. PETTIS, C. R. Albino brook trout. Science xix, p. 867.
722. PETTIT, A. Le Professeur Henri Filhol. [Portrait.] Bull. Soc. Autun xx, pp. 415-453.
723. PHILLIPS, E. F. Variation in Bees.—A reply to Mr Lutz. Biol. Bull. vii, pp. 70-74. [Cf. LUTZ (566)].
724. PICARD, E. On the development of mathematical analysis and its relation to some other sciences. Science xx, pp. 857-872.
725. PIÉRON, H. L'immobilité protectrice chez les animaux. Rev. Scient. (5) i, pp. 523-527.
726. PLATE, L. Prof. Dr Reinkes Einleitung in die theoretische Biologie. Arch. Rassen i, pp. 161-189.
727. ———. Prof. Dahl und die Abstammungslehre in der Schule. T. c. pp. 430-434.
728. ———. Gibt es ein Gesetz der progressiven Reduktion der Variabilität? T. c. pp. 641-655.
- . [See also EHRENFELS (269).]
729. PLOETZ, ALFRED. Die Begriffe Rasse und Gesellschaft und die davon abgeleiteten Disziplinen. Einige Worte der Einführung. Arch. Rassen i, pp. 2-26.
730. POCHE, F. Über die Trennung der "Ratschläge" und "Regeln" in den neuen internationalen Nomenclatur-regeln. Zool. Anz. xxvii, pp. 295-297.
731. ———. Über die nomenklatorische Berücksichtigung und Behandlung von im Jahre 1758 erschienenen zoologischen Werken, in denen die Grundsätze der binären Nomenklatur befolgt sind. T. c. pp. 401-404.
732. ———. Ein bisher nicht berücksichtigtes Zoologisches Werk aus dem Jahre 1758, in dem die Grundsätze der binären Nomenklatur befolgt sind. T. c. pp. 495-510.
- MOEHRING, an Ornithologist.
733. POLL, H. Allgemeines zur Entwicklungsgeschichte der Zwischeniere. Anat. Anz. xxv, pp. 16-25.
734. *POMPECKJ, J. F. Karl Alfred von Zittel. Ein Nachruf. Palæontogr. 1, 28 pp.
- Abstract by BÜTSCHLI, Zool. Zentrbl. 1904, pp. 409-412.
735. POULTON, E. B. The collections of William John Burchell, D.C.L. i. Introduction. Ann. Nat. Hist. xiii, pp. 45-56.

736. [POULTON, E. B.] President's Address. P. ent. Soc. London 1904, pp. xcv.
 "The bearing of the study of Insects upon the question, 'Are acquired characters hereditary?'"
737. PRENANT, A. Questions relatives aux cellules musculaires. iv. Le substance musculaire. Arch. zool. exp. Notes 1904, pp. c-civ & cxiii-cxxii & cxxix-cxxxviii.
738. *—, BOUIN, P. & MAILLARD, L. Traité d'histologie. Tome i. Cytologie générale et spéciale. Paris, 1904, 8vo, xxxiii+977 pp., 791 figg.
 Notice, Anat. Anz. xxv, pp. 110, 111.
739. PRESCOTT, A. B. The rôle of carbon. P. Amer. Phil. Soc. xliii, pp. 102-104.
740. *PRZIBRAM, H. Einleitung in die experimentelle Morphologie der Tiere. Leipzig and Wien, 1904, 142 pp. [From Zool. Anz. Bibl. x, p. 212.]
741. *—, Versuch zur chemischen Charakterisierung einiger Tierklassen des natürlichen Systems auf Grund ihres Muskelplasmas. Beitr. Chem. Physiol. ii, pp. 143-147.
 [From Zool. Anz. Bibl. x, p. 213.]
742. *QUINTON, R. Loi générale de constance originelle du milieu vital des cellules. Arch. gén. med. lxxxi, pp. 928-948.
 [From Zool. Anz. Bibl. x, p. 47.]
743. —. L'eau de mer milieu organique. Paris, 1904, 8vo, 500 pp.
 Review by H. PIÉRON, Rev. Scient. (5) i, pp. 724, 725.
744. —. Réponse à une critique de M. Le Dantec, touchant la loi de constance marine originelle. Revue des idées i, pp. 877-879.
745. RABAUD, E. L'évolution des idées en tératologie, l'embryologie anormale. Rev. Scient. (5) i, pp. 392-400.
746. *RABES, O. Chemotaxis. Prometheus xv, pp. 570-573, 580-582.
 [From Zool. Anz. Bibl. xi, p. 83.]
747. *RABL, C. Über die züchtende Wirkung funktioneller Reize. Rektoratsrede. Leipzig, 44 pp.
 Abstract by VON WAGNER, Zool. Zentrbl. 1904, pp. 809-813. Review by PLATE, Arch. Rassen i, pp. 446-449.
748. RAWITZ, B. Die Unmöglichkeit der Vererbung geistiger Eigenschaften beim Menschen. Biol. Centrbl. xxiv, pp. 396-408.
749. *—, August Weismann, zum 17. Januar 1904. Deutsch. med. Wochenschr. xxx, pp. 141, 142, portrait. [From Zool. Anz. Bibl. ix p. 286.]
750. RAYNOR, G. H. & DONCASTER, L. Experiments on heredity and sex determination. Rep. Brit. Ass. 1904, p. 594.
751. *REDFIELD, C. L. Control of heredity. A study of the genesis of evolution and heredity. Chicago, 1903, 343 pp.
 Review by C. B. D., Amer. Natural. xxxviii, pp. 228-230.
752. REDEKE, H. C. & BREEMEN, P. J. Plankton en Bodemdieren in de Noordzee verzameld van 1-6 Augustus 1901 met de "Nelly" YM. 9. Tijdschr. Nederland. Dierk. Ver. (2) viii, pp. 118-147.
753. REED, MARGARET A. The regeneration of the first leg of the Cray-fish. Arch. Entwickmech. xviii, pp. 307-316, pls. xvii, xviii, 3 figg.

754. *REESE, A. M. An introduction to vertebrate embryology based on the study of the frog and the chick. New York, 1904, xvii+291 pp., 84 figg.
Review by H. W. R., Amer. Natural. xxxviii, pp. 673, 674.
755. REID, G. A. Heredity. Lancet 1904, ii, p. 738.
In contradiction of BEARD, t. c.
756. REINHARDT, A. Die Hypochorda bei *Salamandra maculosa*. Morphol. Jahrb. xxxii, pp. 195-231, pls. v, vi.
757. REINKE, J. Der Neovitalismus und die Finalität in der Biologie. Biol. Centrbl. xxiv, pp. 577-601.
758. RENAUDET, G. L'imitation du Protoplasma. Mem. Soc. Ant. Alzate xix, pp. 347-350.
759. —. Une Science nouvelle. La Plasmologie, état actuel, son rôle en Biologie générale, son avenir. Op. cit. xxi, pp. 89-97.
760. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. Biol. Untersuch. xi, pp. 1-32, pls. i-xiii.
761. —. Zur Kenntnis der Entwicklung der Körperformen des Menschen während der fötalen Lebensstufen. T. c. pp. 33-76, pls. xiv-xxvi.
762. RHUMBLER, L. Zellenmechanik und Zellenleben. Verh. Ges. deutsch. Naturf. lxxvi, i, pp. 88-103.
763. —. Klaatschs und Schoetensacks Theorien über Abstammung und Urheimat des Menschengeschlechts. Arch. Rassen i, pp. 798-808.
764. *—. Zellenmechanik und Zellenleben. Leipzig, 1904, 43 pp.
Review, Nature lxxi, p. 199.
765. RIBBERT, H. Zur Regeneration der Leber und Niere. Arch. Entwicklmech. xviii, pp. 267-288, pl. xvi.
766. —. Über Neubildung von Talgdrüsen. T. c. pp. 578-583, pl. xxxv.
767. RICHARD, J. Campagne scientifique du yacht "Princesse Alice" en 1903. Observations sur la Sardine, sur le Plankton, sur les Cétacés sur des filets nouveaux etc., etc. Op. cit. No. 11, 29 pp.
768. [RICHARD, J.] Campagne scientifique de la Princesse-Alice (1903). Liste des Stations. Bull. Mus. Monaco, No. 1, pp. 3-15, id. 1904. Op. cit. No. 19, 29 pp.
769. —. Sur deux filets destinés à la recolte du Plankton. C.R. Ac. Sci. cxxxviii, pp. 1436, 1437.
770. RICHET, C. La génération spontanée. Rev. gen. Sci. xv, pp. 404-411.
771. RICHTERS, F. Vorläufiger Bericht über die antarktische Moosfauna. Verh. Deutsch. zool. Ges. 1904, pp. 236-239.
Abstract by MEISENHEIMER, Zool. Zentrbl. 1904, p. 654.
772. RITTER, W. E. The power and methods of heredity. I. Univ. Calif. Chron. iii (1900), pp. 341-349. II. T. c. pp. 387-401.
773. — & DAVIS, B. M. Studies on the ecology, morphology, and speciology of the young of some Enteropneusta of Western North America. Univ. Calif. publ. Zool. i, pp. 171-210, pls. 17-19, 1 fig.
774. ROBERTSON, R. A. The property of livingness in matter, its inertia and other phases. P. Scott. Micr. Soc. iv, pp. 29-38.
775. RODRIGUEZ, J. J. Preocupaciones y errores que respects á algunos animales existen en Guatemala. An. Mus. Salvador i, pp. 458-472

776. ROHDE, E. Untersuchungen über den Bau der Zelle. III. Die Entstehung von Mitochondrien und Chondromiten aus eigenartigen intra- und extracellulären "Sphären" (Idiozomen). Zeitschr. wiss. Zool. lxxvi, pp. 53-93, pls. vi, vii.
Abstract by GOLDSCHMIDT, Zool. Zentrbl. 1904, p. 542.
777. —.IV. Zum histologischen Wert der Zelle. Op. cit. lxxviii, pp. 1-148, pls. i-vii.
778. RÖMER, F. Zoologische Sammelreise nach dem Adriatischen Meere. Ber. Senckenberg. Ges. 1903, pp. 148*-152*.
779. — & SCHAUDINN, F. Fauna Arctica. III. Lief. 3. See CRUSTACEA, ZIMMER (250), ARACHNIDA, RICHTERS (173).
780. *RÖTHIG, P. Handbuch der embryologischen Technik. Wiesbaden, 1904, 8vo, xii + 287 pp.
Notice, Anat. Anz. xxv, p. 319.
781. ROUVIÈRE, H. Étude sur le développement du péricarde chez le Lapin. J. Anat. Physiol. xl, pp. 610-633, pls. xvii, xviii, 13 text-figg.
782. ROUX, W. Die Entwicklungsmechanik, ein neuer Zweig der biologischen Wissenschaft. Verh. Ges. deutsch. Naturf. lxxvi, i, pp. 23-39.
783. RUBASCHKIN, W. Studien über Neuroglia. Arch. mikr. Anat. lxiv, pp. 575-626, pls. xxxii-xxxv.
784. RÜDIN, E. [ORSCHANSKY, J.] Die Vererbung im gesunden und krankhaften Zustande und die Entstehung der Geschlechts beim Menschen. Stuttgart, Ferd. Enke, 1903, 347 S. Arch. Rassen i, pp. 609-618.
Review of work recorded last year. [ORSCHANSKY, Zool. Rec. 1903, Gen. Sub. (555).]
785. RŮŽIČKA, VLADISLAV. Zur Frage der Färbbarkeit der lebenden Substanz. Zeitschr. allg. Physiol. iv, pp. 141-152, 1 pl.
786. SAINT-HILAIRE, K. Untersuchungen über den Stoffwechsel in der Zelle und in den Geweben. II. Theil. x. Ueber den Bau des Protoplasma in den Leucocyten. Trav. Soc. St. Petersb. xxxiv, Sect. Zool., pp. 21-154, pls. ii, iii.
In Russian, with long abstract in German, pp. 141-153.
787. SAKURAI, T. Zur Entwicklungsgeschichte der Lungenarterien. Anat. Anz. xxv, pp. 321-326.
788. SAMPSON, LILIAN V. A contribution to the embryology of *Hylodes martinicensis*. Amer. J. Anat. iii, pp. 473-504, 2 pls., 17 text-figg.
789. SANGIORGI, D. Appunti zoologici sull' Isola di Cefalonia. Atti. Soc. Modena xxxvi, pp. 69-98.
790. SARGENT, P. E. The optic reflex apparatus of Vertebrates for short-circuit transmission of motor reflexes through Reissner's fibre; its morphology, ontogeny, phylogeny and function. Part I. The fish-like Vertebrates. Bull. Mus. Harvard xlv, pp. 127-258, xi pls.
791. SCHALLMAYER, W. Selectionstheorie, Hygiene und Entartungsfrage Arch. Rassen i, pp. 53-77.
Chiefly anthropological.
792. SCHAPER, A. Experimentelle Untersuchungen über den Einfluss der Radiumstrahlen und der Radiumemanation auf embryonale und regenerative Entwicklungsvorgänge. Anat. Anz. xxv, pp. 298-314, 326-337.

793. SCHAUDINN, F. Generations- und Wirtswechsel bei *Trypanosoma* und *Spirochaete*. (Vorläufige Mitteilung.) Arb. kaiserl. Gesundheitsamte xx, pp. 387-439.
Abstract, DUBOSCQ (258).
- SCHIEDT, ALICE E. [See MORGAN & SCHIEDT (656).]
794. SCHIEDT, R. C. Some phenomena of animal pigmentation. Amer. J. Physiol. x, pp. 365-372, 8 figg.
795. *SCHLOSSER, M. Die mumifizierte Tierwelt des alten Ägyptens. 4 text-figg. Summary. Arch. Anthropol. xxx, pp. 202-207.
796. SCHMIDT, V. Studien über Ovogenese. I. Die Wachstumsperiode der Eier von *Proteus anguineus*. Anat. Hefte. Arb. xxvii, pp. 1-69, pls. 1-4.
797. SCHMINCKE, A. Über Ruminantierspermien und ihre Bewegung. Arch. mikr. Anat. lxiii, pp. 611-627, pls. xxviii, xxix.
798. SCHNEE, P. Die Landfauna der Marshall-Inseln nebst einigen Bemerkungen zur Fauna der Insel Nauru. Zool. Jahrb. Syst. xx, pp. 387-412.
Abstract by MEISENHEIMER, Zool. Zentrbl. 1904, p. 652.
799. *——. Darwinistische Studien auf einer Korallen-Insel. Odenkirch, 1903, 46 pp.
Review by PLATE, Arch. Rassen i, p. 751.
800. SCHNEIDER, K. C. In rebus histologicis. Zool. Anz. xxviii, pp. 147-153.
801. ———. Histologische Mitteilungen. I. Die Urogenitalzellen der Ctenophoren. Zeitschr. wiss. Zool. lxxvi, pp. 388-399, pl. xxiv.
802. *——. Die Entstehung der Gliederung des Tierkörpers. Naturw. Wochenschr. xx, pp. 545-551, 561-566. [From Zool. Anz. Bibl. x, p. 223.]
803. *——. Über den heutigen Stand der Descendenztheorie. Vienna, 22 pp.
Review by PLATE, Arch. Rassen i, p. 442.
804. *SCHOENICHEN, W. Zoologische Schemabilder. Eine Vorlagensammlung für Wandtafelzeichnungen und zugleich ein Leitfaden der Zoologie in Form schematischer Abbildungen mit kurzem erläuterndem Texte. Heft I *Protozoa, Cœlenterata, Echinodermata*. Stuttgart, 1904, iv + 21 pp., 21 figg.
Review Zool. Zentrbl. 1905, p. 66.
805. SOHOETENSACK, O. Beiträge zur Kenntnis der neolithischen Fauna Mitteleuropas, mit besonderer Berücksichtigung der Funde am Mittelrhein. Verh. Ver. Heidelberg viii, pp. 1-118.
806. SCHREINER, A. & SCHREINER, K. E. Die Reifungsteilungen bei den Wirbeltieren. Ein Beitrag zur Frage nach der Chromatinreduktion. Anat. Anz. xxiv, pp. 561-578.
Abstract by GOLDSCHMIDT, Zool. Zentrbl. 1904, p. 391.
807. SCHREINER, K. E. Über das Generationsorgan von *Myxine glutinosa* (L.). Biol. Centrbl. xxiv, pp. 91-104, 121-129, 162-173.
808. SCHRÖDER, —. Eine Sammlung von Referaten neuerer Arbeiten über die geschlechtsbestimmenden Ursachen, mit einzelnen kritischen Anmerkungen. Allg. Zeitschr. Ent. pp. 110-126.

809. [SCHRÖDER, —.] Eine Sammlung von Referaten über neuere biometrische Arbeiten, mit einzelnen Anmerkungen. T. c. pp. 228–246.
810. SCHUBERG, A. Über Zellverbindungen. Vorläufiger Bericht. Verh. Ver. Heidelb. vii, pp. 395–404.
811. SCHÜCKING, A. Zur Physiologie der Befruchtung. Centrbl. Physiol. xvii, pp. 625–628.
812. *SCHÜLE, HEINR. Über die Frage des Heiratens von früher Geisteskranken. Leipzig, S. Hirzel, 1904, 26 pp.
Review by E. RÜDIN, Arch. Rassen i, pp. 769, 770.
813. SCHULTZ, E. Über Reduktionen. I. Über Hungererscheinungen bei *Planaria lactea*. Arch. Entwicklmech. xviii, pp. 555–577, pl. xxxiv.
814. —. Über Regenerationsweisen. Biol. Centrbl. xxiv, pp. 310–317.
815. SCHULTZE, O. Nachtrag zu meinem auf der Anatomenversammlung in Jena gehaltenen Vortrag über die Entwicklung des peripheren Nervensystems. Anat. Anz. xxv, pp. 131–140.
816. SCHULZ, A. Die Wandlungen des Klimas, der Flora, der Fauna und der Bevölkerung der Alpen und ihrer Umgebung vom Beginne der letzten Eiszeit bis zur jüngeren Steinzeit. Zeitschr. Naturw. lxxvii, pp. 41–70.
817. SCHULZE, E. Das Tierreich. Lief. 20. [VERMES, BÜRGER, O. (61).]
818. SCHUSTER, W. Verstandes- und Seelenleben bei Tier und Mensch. Jahrb. nassau. Ver. lvii, pp. 45–93.
819. SCHWALBE, E. Gesamtregister zu den Jahresberichten der Anatomie und Entwicklungsgeschichte herausgegeben von G. Schwalbe. Jahrgang 1892–1901, I Teil. Namenregister. Jena, 1904, 8vo, viii + 610 pp.
820. SCHWALBE, G. & others. Jahresberichte über die Fortschritte der Anatomie und Entwicklungsgeschichte. (n. f.) ix. Literatur 1903. I. Abteilung allgemeine Anatomie, 374 pp. II. Allgemeine Entwicklungsgeschichte, 330 pp. III. Spezielle Anatomie und Entwicklungsgeschichte der Menschen und der Wirbeltiere, xviii + 1180 pp. Jena, 8vo, 1904, 1905.
821. * —. Die Vorgeschichte des Menschen. Mit einer Figurentafel. Braunschweig, 1904, 52 pp.
Review by CURT MICHAELIS, Arch. Rassen i, pp. 302, 303.
822. SCHWANGART, F. Studien zur Entodermfrage bei den *Lepidopteren*. Zeitschr. wiss. Zool. lxxvi, pp. 167–212, pls. xii, xiii.
823. SCLATER, P. L. The international catalogue of scientific literature. [N. Zoology.] Ibis 1904, pp. 645, 650.
824. SCOTT, W. B. Reports of the Princeton University expedition to Patagonia ii, pt. i. [See AVES, SCOTT (570).]
825. SCOTT, W. E. D. The inheritance of song in Passerine birds. Science xix, p. 154.
826. —. The inheritance of song in Passerine birds..... T. c. pp. 957–959, and xx, p. 282.
827. *SCRIBNER, C. H. Where did life begin? New York, 1903, 12mo, 75 pp.
Review, Amer. Natural. xxxviii, p. 397.

SELIGMANN, C. G. [See SHATTOCK & SELIGMANN (834).]

828. *SEMON, R. Die Mneme als erhaltendes Prinzip im Wechsel des organischen Geschehens. Leipzig, 1904, 8vo, xiv+353 pp. [From Zool. Anz. Bibl. xi, p. 64.]
829. SERGI, G. Die Variationen des menschlichen Schädels und die Klassifikation der Kassen. Arch. Anthropol. xxxi, pp. 111-121, pls. viii-x.
830. SEWERTZOFF, A. N. Die Entwicklung der pentadaktylen Extremität der Wirbeltiere. Anat. Anz. xxv, pp. 472-494.
831. SHARP, D. & others. The Zoological Record, xl, 1903, London, 8vo, 1904.
832. —. Fauna Hawaiiensis vol. iii, pt. 4. See ARACHNIDA, SIMON; MYRIOPODA, SILVESTRI; INSECTA, CARPENTER (243), KELLOGG & CHAPMAN (784), MEYRICK (947), SILVESTRI (1296).
833. —. The place of Herbert Spencer in biology. Zoologist 1904, pp. 1-6.
834. SHATTOCK, S. G. & SELIGMANN, C. G. Observations upon the acquirement of secondary sexual characters, indicating the formation of an internal secretion by the testicle. P. R. Soc. London lxxiii, pp. 49-58.
835. SHIPLEY, A. E. The Orders of Insects. Zool. Anz. xxvii, pp. 259-262.
— [See also MARR & SHIPLEY (594).]
836. SIMROTH, H. Über Fluidalstruktur des Protoplasmas. Verh. Deutsch. zool. Ges. 1904, pp. 157-163.
837. —. Kann Unzulänglichkeit des Spermas Hemmung oder völlige Unterdrückung der Extremitäten bedingen? Ein Wort zur Vererbungsfrage. Zool. Anz. xxvii, pp. 204-206.
838. —. Neuere Arbeiten über die Verbreitung der Gastropoden. Zusammenfassende Übersicht. Zool. Zentrbl. 1904, pp. 605-650.
839. SKORIKOW, A. S. Beitrag zur Planktonfauna arktischer Seen. Zool. Anz. xxiv, pp. 209-212.
840. —. Über das Sommerplankton der Newa und aus einem Teile des Ladoga-Sees. Biol. Centrbl. xxiv, pp. 353-366 and 385-391.
841. SMALLWOOD, W. M. The maturation, fertilization and early cleavage of *Haminea solitaria* (Say). Bull. Mus. Harvard xlv, pp. 259-318, xiii pls.
842. —. Natural history of *Haminea solitaria* Say. [Embryology.] Amer. Natural. xxxviii, pp. 207-225.
SOLGER, B. [See MORGAN (654).]
843. SOLLAS, W. J. and others. The atoll of Funafuti. Borings into a coral reef and the results. Being the report of the Coral Reef Committee of the Royal Society. London, 1904, 4to, vi+428 pp., pls. A-F and i-xix.
844. SOLLMANN, T. Structural changes of ova in anisotonic solutions and Saponin. Amer. J. Physiol. xii, pp. 99-115, 46 figg.
845. SOMMER, A. & WETZEL, G. Die Entwicklung des Ovarialeies und des Embryos, chemisch untersucht mit Berücksichtigung der gleichzeitigen morphologischen Veränderungen. I. Die chemischen Veränderungen des Ovarialeies der Ringelnatter bis zur Reife. Arch. ges. Physiol. 1904, pp. 389-409, 11 figg.

846. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspian sous le point de vue d'une province zoogéographique indépendante. *Zapiski Kiev. Obshch.* xviii, pp. i-xiii + 1-487, + 1-216 + iv.
Entirely in Russian.
847. SPAULDING, E. G. The special physics of segmentation as shown by the synthesis, from the stand-point of universally valid dynamic principles, of all the artificial parthenogenetic methods. *Biol. Bull.* vi, pp. 97-122.
848. —. The rhythm of immunity and susceptibility of fertilized sea-urchin eggs to ether to HCl, and to some salts. *Biol. Bull.* vi, pp. 224-240.
849. SPEMANN, H. Ueber experimentele erzeugte Doppelbildungen mit cyclopischen Defect. *Zool. Jahrb. Suppl.* vii, pp. 429-470, pls. xxiii, xxiv.
850. SPENCER, HERBERT. Autobiography. 2 vols. London, 1904, xii + 556 pp. and ix + 542 pp.
Review, *Nature* lxx, p. 265.
851. SPENGEL, J. W. Die Orthographie in zoologischen Zeitschriften. *Zool. Anz.* xxvii, pp. 176-183.
852. —. Ueber Schwimmblasen, Lungen und Kiementaschen der Wirbelthiere. *Zool. Jahrb. Suppl.* vii, pp. 727-749.
853. SPIESS, C. Modifications subies par l'appareil digestif sous l'influence du régime alimentaire. *C.R. Ac. Sci.* cxxxviii, pp. 1123, 1124.
854. STAPLES-BROWNE, R. Experiments on heredity in web-footed pigeon. *Rep. Brit. Ass.* 1904, p. 595.
855. STEFANOWSKA, MICHELINE. La croissance en poids des animaux et des végétaux. *Arch. Sci. Nat.* xviii, pp. 474-476.
856. ŠTĚPÁNEK, ING. O. Ueber die ärobe und anärobe Atmung der Eier. *Centrbl. Physiol.* xviii, pp. 188-205.
857. STEPHAN, P. Spermies oligopyrènes et apyrènes chez les *Proso-branches*. *C.R. Ass. Franc.* xxxii, 2, pp. 780-783.
858. STERZI, G. Die Blutgefässe des Rückenmarks. Untersuchungen über ihre vergleichende Anatomie und Entwicklungsgeschichte. *Anat. Hefte Arb.* xxiv, pp. 1-364, pls. i-iv.
859. STEVENS, N. M. Further studies on the ovogenesis of *Sagitta*. *Zool. Jahrb. Anat.* xxi, pp. 243-252, pl. xvi.
860. —. On the germ cells and the embryology of *Planaria simplissima*. *P. Ac. Philad.* lvi, pp. 208-218.
— [See also BOVERI & STEVENS (130) & MORGAN & STEVENS (657).]
861. STEVENSON, E. C. & ENGBERG, C. C. Variation in the hooks of the dog-tapeworms *Tenia serrata* and *Tenia serialis*. *Stud. Univ. Nebraska* iv, pp. 191-230.
Also published *Stud. Lab. Nebraska*, No. 59, pp. 409-448.
862. STIEDA, L. Bericht über die anatomische, histologische und embryologische Literatur Russlands, 1902-1904. *Anat. Hefte. Ergebn.* pp. 502-591.
Account of 130 works; list pp. 503-512.
STRANGEWAYS, T. S. P. [See NUTTALL (678).]

863. STRATZ, C. H. Das Verhältniss zwischen Gesichts- und Gehirnschädel beim Menschen und Affen. *Arch. Anthropol.* xxxi, pp. 85-93, 12 text-figg.
- STRONG, R. M. [See LOEB & STRONG (548).]
864. STRUNZ, F. Naturbetrachtung und Naturerkenntniss im Altertum. Eine Entwicklungsgeschichte der antiken Naturwissenschaften. Hamburg, 1904, vii+168 pp.
865. STSCHEKANOVZEW, J. P. Über die Eireifung bei viviparen *Aphiden*. *Biol. Centrbl.* xxiv, pp. 104-112.
866. SUND, O. Die Entwicklung des Geruchsorganes bei *Spinax niger*. *Biol. Centrbl.* xxiv, pp. 651-659.
867. SWAEN, A. & BRACHET, A. Étude sur la formation des feuillets et des organes dans le bourgeon terminal et dans la queue des embryons des poissons téléostéens. *Arch. Biol.* xx, pp. 461-610, pls. xiii-xvi.
Abstract by MEISENHEIMER, *Zool. Zentrbl.* 1904, pp. 701-704.
868. TANGL, F. & FARKAS, K. Beiträge zur Energetik der Ontogenese. Vierte Mitteilung. Über den Stoff- und Energieumsatz im bebrüteten Forellenei. *Arch. ges. Physiol.* civ, pp. 624-638.
869. THAUZIÈS, A. L'orientation du pigeon-voyageur. Données expérimentales. *Rev. Scient.* (5) ii, pp. 417-420, 453-457.
870. THEOBALD, F. V. Second report on economic zoology. *British Museum (Natural history)*. London, 1904, iv+197 pp.
871. THESING, C. Beiträge zur Spermatogenese der Cephalopoden. *Zeitschr. wiss. Zool.* lxxvi, pp. 94-136, pls. viii, ix.
Abstract by GOLDSCHMIDT, *Zool. Zentrbl.* 1904, p. 601.
872. THOMSON, J. Photo-Micrography and Photo-Micrometry. *P. Scott. Micr. Soc.* iv, pp. 44-46, pls. iii-vi.
873. THOMSON, J. A. Theories of the Determination of Sex. *Lancet* 1904, i, pp. 197, 198.
— & M. R. [See WEISMANN (928).]
874. THOULET, J. Les lois physiques de l'Océan et leurs relations avec les êtres qui l'habitent. *Bull. Mus. Monaco*, No. 9, 16 pp.
875. —. L'Océan. Ses lois et ses problèmes. Paris, 8vo, 400 pp., 12 text-figg.
Review by H. PIÉRON, *Rev. Scient.* (5) ii, pp. 399, 400.
876. —. Les lois physiques de l'Océan et leurs relations avec les êtres qui l'habitent. *Rev. Scient.* (5) i, pp. 449-455.
877. —. L'Océanographie dans le voisinage immédiat du rivage. *Rev. gen. Sci.* xv, pp. 542-547.
878. TODD, ANNE H. Results of injuries to the blastopore region of the Frog's Embryo. *Arch. Entwicklmech.* xviii, pp. 489-506, pls. xxix, xxx, 20 figg.
879. TOMMASINA, T. Constatation d'une radioactivité propre aux êtres vivants. *C.R. Ac. Sci.* cxxxix, p. 730.
880. TÖPLY, RITTER v. R. Anatomische Werke des Rhuphos und Galenos. Erste deutsche übersetzung. *Anat. Hefte. Arb.* xxv, pp. 343-472.
TORELLE, ELLEN. [See MORGAN & TORELLE (658).]

881. TORREY, H. B. Biological studies on *Corymorpha*. I. *C. palma* and environment. J. exp. Zool. i, pp. 395-422.
882. —. On the habits and reactions of *Sagartia davisi*. Biol. Bull. vi, pp. 203-215.
883. — & MERY, JANET R. Regeneration and non-sexual reproduction in *Sagartia davisi*. Univ. Calif. publ. Zool. i, pp. 211-226.
884. TOWNSEND, ANNE B. The histology of the light organs of *Photinus marginellus*. Amer. Natural. 127-151. [*Coleoptera*.]
885. TRETJAKOFF, D. Die Bildung der Richtungskörperchen in den Eiern von *Ascaris megalocephala*. Arch. mikr. Anat. lxxv, pp. 358-382, pl. xxi.
886. —. Die Spermatogenese bei *Ascaris megalocephala*. T. c. pp. 383-438, pls. xxii-xxiv.
887. *TSCHERMAK, A. Die neueren Anschauungen über die Entstehung der Arten. München. med. Wochenschr. li, pp. 364, 365. [From Zool. Anz. Bibl. x, p. 45.]
888. TSCHERMAK, E. Die Lehre von den formbildenden Faktoren (Variation, Anpassung, Selektion, Mutation, Kreuzung) und ihre Bedeutung für die rationelle Pflanzenzüchtung.
Summary by L. PLATE, Arch. Rassen i, p. 909.
889. TUR, J. Contributions à la théorie des polygénèses. C.R. Soc. Biol. lvi, pp. 108-110.
890. —. Sur les malformations embryonnaires obtenues par l'action du radium sur les œufs de la poule. Op. cit. lvii, pp. 236-238.
891. —. [Zur Casuistik und Theorie vielkeimiger Monstra.] Arb. Lab. Warsaw xxix, 18 pp.
In Russian. Abstract by SCHULTZ, Zool. Zentrbl. 1904, p. 6.
892. UEXKÜLL, J. V. Die ersten Ursachen des Rhythmus in der Tierreihe. Ergebn. Physiol. Biophys. iii, pp. 1-11, 4 text-figg.
893. UHLENHUTH, —. Ein neuer biologischer Beweiss für die Blutsverwandtschaft zwischen Menschen- und Affengeschlecht. Arch. Rassen i, pp. 682-688.
894. VALLENTIN, R. Notes on the Falkland islands. Mem. Manchester Soc. xlviii, No. 23, 48 pp., 3 pls.
895. VAN DER STRICHT, O. La structure de l'œuf des Mammifères. 1^{re} Partie. L'oocyte au stade de l'accroissement. Arch. Biol. xxi, pp. 1-101, pls. i-iii.
Abstract by FICK, Zool. Zentrbl. 1905, p. 63.
896. *VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeitschr. Ges. Erdkunde 1904, pp. 362-370.
Abstract by MEISENHEIMER, Zool. Zentrbl. 1904, p. 653.
897. VARIGNY, H. DE. L'origine marine de la vie animale. Rev. Scient. (5) ii, pp. 262-268.
898. VASCHIDE, N. & ROUSSEAU, P. L'association des idées chez les Singes. (D'après les expériences de M. Kinnaman.) Rev. Scient. (5) i, pp. 583-589, 617-620, figg. 33-35, and 2 tables.
899. —. Experimental studies on the mental life of animals. Rep. Smithson. Inst. 1903, pp. 545-566.
Translation of paper recorded last year.

900. VAYSSIÈRE, A. Notice biographique sur le Professeur Alexandre Onufr. Kowalewsky (1840-1901). *Ann. Mus. Marseille* viii, pp. 7-10, portrait.
901. VERNON, H. M. The universal presence of erepsin in animal tissues. *J. Physiol.* xxxii, pp. 33-50.
902. VIGUIER, C. Développements anormaux indépendants du milieu. *C.R. Ac. Sci.* cxxxviii, pp. 1718-1720.
903. —. Réglage de la température dans les appareils de laboratoire pour la pisciculture et l'élevage des animaux marins. *Arch. zool. exp. Notes* 1904, pp. clvii-clxvi.
904. VIRÉ, A. Sur quelques expériences effectuées au laboratoire des Catacombes du Muséum d'histoire naturelle. *C.R. Ac. Sci.* cxxxviii, pp. 706-708.
905. —. La faune souterraine du puits du Padirac (Lot). *T. c.* pp. 826-828.
906. —. La biospéléologie. *Op. cit.* cxxxix, pp. 992-995.
907. *VOELTZKOW, A. Bericht über eine Reise nach Ostafrika zur Untersuchung der Bildung und des Aufbaues der Riffe und Inseln des westlichen indischen Ozeans. III. Mafia und Zanzibar. IV. Die Comoren. *Zeitschr. Ges. Erdkunde* 1904, pp. 274-301.
Abstract by MAY, *Zool. Zentrbl.* 1904, pp. 435-437.
908. *——. Bericht..... v. Europa-Insel. *T. c.* pp. 426-451.
Abstract by MAY, *Zool. Zentrbl.* 1904, pp. 715, 716.
909. VOINOV, D. N. Sur une disposition spéciale de la chromatine dans la spermatogénèse du *Gryllus campestris*, reproduisant des structures observées seulement dans l'ovogénèse. *Arch. zool. exp. Notes* 1904, pp. lxiii-lxvi.
910. VÖLKER, O. Ovývoji Allantois u sysla. *Rozpr. Ceske Ak. Praze* ii, xiii, No. 13, 11 pp., 1 pl.
911. VOLKOV, TH. Les variations squelettiques du pied chez les Primates et dans les races humaines. *Bull. Soc. Anthropol. Paris* 1904, pp. 1-50, 201-331.
912. WALDEYER, —. Festrede. *SB. Ak. Berlin* 1904, pp. 209-226.
913. WALKER, A. O. Atmospheric moisture as a factor in distribution. *S.-East. Natural.* 1903, pp. 42-47. [*Lepidoptera.*]
914. WALLACE, A. R. Man's place in the Universe, a study of the results of scientific research in relation to the Unity or Plurality of worlds. Fourth ed. with new chapter, an additional argument dependent on the theory of evolution. London, 1904, 8vo, vi+341 pp.
915. WALLACE, LOUISE B. The function of the accessory chromosome in the spider. *Amer. Natural.* xxxviii, pp. 506, 507.
916. *WALLER, A. D. Eight lectures on the signs of life from their electrical aspect. London, 1903, 8vo, 175 pp., 68 figg.
Review, *Rev. Scient.* (5) i, pp. 564, 565.
917. WALTHER, J. Die Fauna der Solnhofener Plattenkalke bionomisch betrachtet. *Festschr. Haeckel* [Denk. Ges. Jena xi], pp. 133-214.
918. WARD, H. B. A biological reconnaissance of some elevated lakes in the Sierras and the Rockies. *Stud. Lab. Nebraska*, No. 60, pp. 127-154, pls. xix-xxxi.
Abstract by ZSCHOKKE, *Zool. Zentrbl.* 1904, pp. 68-70.

919. WASMANN, E. Die moderner Biologie und die Entwicklungstheorie. Zweite vermehrte Auflage. Freiburg im Breisgau, 1904, 8vo, xii + 323 pp., illustrations and 4 plates.
920. —. Zur Kontroverse über die psychischen Fähigkeiten der Tiere, insbesondere der Ameisen. Natur u. Schule iii, pp. 20–26, 80–89, 133–142.
921. WASSILIEFF, A. Zur Spermatogenese bei *Blatta germanica*. Anat. Anz. xxv, pp. 257–260.
922. WATERHOUSE, C. O. Supplementary list of generic names, London, 1904, 8 pp.
923. WEBB, S. & McDakin & GRAY, G. The diminution and disappearance of the South-Eastern Fauna and Flora within the memory of present observers. S.-East. Naturalist 1903, pp. 48–60.
- WEBB, W. M. [See HILL & WEBB (409).]
- WEBER, A. [See FERRET & WEBER (284–287).]
924. WEBER, M. Siboga Expeditie. Livr. xiv–xviii. [See MOLLUSCA, TESCH (610); TUNICATA, SLUITER (28); ECHINODERMA, KOEHLER (143) & DE MEIJERE (57).]
925. —. Die Säugetiere. Einführung in die Anatomy und Systematik der recenten und fossilen Mammalia. Jena, 1904, 8vo, xii + 866 pp., 567 illustrations.
926. WEIDENREICH, F. Die roten Blutkörperchen. Anat. Hefte. Ergebn. xiii, pp. 1–94.
Summary of results of 185 works. Bibliographic list, pp. 1–11.
927. WEISMANN, A. Vorträge etc. [Cf. Zool. Rec. 1902, Gen. Sub. (866).] 2nd ed. Jena, 1904, Vol. i, 340 pp., Vol. ii, 344 pp., 3 pls.
Review by L. PLATE, Arch. Rassen i, pp. 906, 907.
928. —. The evolution theory. Translated with the author's co-operation by J. ARTHUR THOMSON & MARGARET R. THOMSON, London, 1904, 2 Vols., 8vo, 3 pls., Vol. i, xvi + 416 pp., Vol. ii, 405 pp.
929. [WEISMANN, A. Festschrift zum siebenzigsten Geburtstage des Herrn Geheimen Rathes Prof. Dr August Weismann in Freiburg in Baden. This is Zool. Jahrb. Suppl. vii.]
930. WELDON, W. F. R. Albinism in Sicily and Mendel's laws. Biometrika iii, pp. 107–109.
931. —. Note on a race of *Clausilia itala* (von Martens). T. c. pp. 299–307.
932. WELTNER, W. [and others]. Breicht über die wissenschaftlichen Leistungen in der Naturgeschichte etc. Berlin, 1904. [= Arch. Naturges. ii, Band lxii, lxiii, lxvii–lxix.]
The following parts have appeared in 1904 :
lxii, 2, Heft. 1, HELMEYER: *Vögel*, 1895: WERNER, *Herpetologie*, 1894: LEDERMANN, *Saugethiere*, 1894: KOBELT, *Mollusca*, 1895.
lxiii, 2, Heft. 3, VON LINSTOW, *HELMINTHEN*, 1900, 1901: MATZDORFF, *Bryozoa*, 1899–1902: MATZDORFF, *Tunicata*, 1899–1902: MEISSNER, *Brachiopoda*, 1895: COLLIN, *Rotatoria* and *Gastrotricha*, 1896: BERGEN, *Echinoderma*, 1892: CARLGREN, *Anthozoa*, 1894: WELTNER, *Spongiae*, 1902: GRÜNBERG, LUCAS & THIELE, *Carcinology*, 1895–97.
lxvii, 2, 2, Lief. 1. LUCAS, *Hymenoptera* and *Lepidoptera*, 1900.
lxix, 2, Lief. 1. SEIDLITZ, *Allgemeine Entomologie* and *Coleoptera*, 1902.

933. WENDELSTADT, —. Experimentelle Studie über Regenerationsvorgänge am Knochen und Knorpel. Arch. mikr. Anat. lxiii, pp. 766-795, pls. xxxviii-xliii.
934. WESENBERG-LUND, C. Studier over de Danske Søers Plankton. Kjøbenhavn, 1904, 4to.
These Memoirs are noticed in the special Records. They are apparently intended to be part of a series.
Review by ZACHARIAS, Biol. Centrbl. xxiv, pp. 636, 637.
935. WETZEL, G. Zentrifugerversuche an unbefruchteten Eiern von *Rana fusca*. Arch. mikr. Anat. lxiii, pp. 636-642.
— [See also SOMMER & WETZEL (845).]
936. WHEELER, W. M. Dr Castle and the Dzierzon theory. Science xix, pp. 587-591.
Relates to CASTLE (173). Includes a criticism of Petrunkevitch as to polar body becoming reproductive organ in bee.
937. WHIPPLE, J. L. [Review of] the direction of hair in animals and man by WALTER KIDD. Science xx, pp. 401-407.
938. WHITEAVES, J. S. Bibliography of Canadian Zoology for 1902, exclusive of entomology. Tr. R. Soc. Canada ix, Sect. 4, pp. 163-167.
939. WHITEHEAD, R. H. The embryonic development of the interstitial cells of Leydig. Amer. J. Anat. iii, pp. 167-182, 10 figg.
940. WHITFIELD, R. P. Notice of a remarkable case of reproduction of lost parts shown on a fossil Crinoid. Bull. Amer. Mus. xx, pp. 471, 472, pls. xii, xiii.
941. WHITMAN, C. O. Hybrids from wild species of pigeons, crossed inter se and with domestic races. Biol. Bull. vi, pp. 315, 316.
942. WIEDERSHEIM, R. Ueber das Vorkommen eines Kehlkopfes bei Ganoiden und Dipnoern sowie über die Phylogenie der Lunge. Zool. Jahrb. Suppl. vii, pp. 1-66, pls. i-vi.
943. WILDER, H. H. Duplicate twins and double Monsters. Amer. J. Anat. iii, pp. 387-472, 2 pls., 11 text-figg. and extensive bibliography.
944. —. The early development of *Desmognathus fusca*. Amer. Natural. xxxviii, pp. 117-125.
945. WILLCOCK, E. G. The action of the rays from Radium upon some simple forms of animal life. J. Physiol. xxx, pp. 449-454.
946. WILLEY, A. Leaf-mimicry [by a fish]. Spolia Zeylan. ii, pp. 51-55, cut.
947. WILSON, E. B. Experimental studies on germinal localization. I. The germ-region in the egg of *Dentalium*. J. exp. Zool. i, pp. 1-72.
948. —. Cytasters and Centrosomes in artificial parthenogenesis. Zool. Anz. xxviii, pp. 8-12.
Relates to the views of PETRUNKEWITSCH.
949. —. Mosaic development in the Annelid egg. Science xx, pp. 748-750.
950. WINDLE, B. C. A. Zwergwuchs. Anat. Hefte. Ergebn. xiii, pp. 488-501.
Account of recent work.

951. WINTREBERT, P. Sur la valeur comparée des tissus de la queue au point de vue de la régénération chez les larves d'Anoures et sur l'absence possible de cette régénération. C.R. Ac. Sci. cxxxix, pp. 432-434.
952. WITTEN, E. P. Deep-sea life. [Abstract of lecture.] Tr. Soc. Northumb. (n. s.) i, pp. 61-64.
953. WOLTERECK, R. Wurm "Kopf," Wurmrumpf und Trochophora. Bemerkung zur Entwicklung und Ableitung der *Anneliden*. Zool. Anz. xxviii, pp. 273-322.
954. —. Beiträge zur praktischen Analyse der *Polygordius*-Entwicklung nach dem "Nordsee-" und dem "Mittelmeertypus." I. Der für beide Typen gleichverlaufende Entwicklungsabschnitt; vom Ei bis zum jüngsten Trochophora-Stadium. Arch. Entwicklmech. xviii, pp. 377-403, pls. xxii, xxiii, 11 figg. und Tabelle.
955. WOODWARD, H. A retrospect of Palæontology in the last forty years. Geol. Mag. (v) ii, pp. 49-56, 97-106, 145-156.
956. —. The President's address: the evolution of Vertebrate animals in time. J. R. Micr. Soc. 1904, pp. 137-164.
957. YATSU, N. Experiments in the development of egg-fragments in *Cerebratulus*. Biol. Bull. vi, pp. 123-136.
958. YERKES, R. M. The reaction-time of *Gonionemus murbaichi* to electric and photic stimuli. Biol. Bull. vi, pp. 84-95. [Also abstract, t. c. pp. 324, 325.]
— [See also JENNINGS (446).]
959. YOUNG, A. H. & ROBINSON, A. Observations on the development and morphology of the Tail. Brit. Med. J. 1904, ii, pp. 1384-1391, 16 figg.
960. YOUNG, L. C. H. Note on sexual dimorphism. J. Bombay Soc. xvi, pp. 37-39, and 42.
961. ZABOROWSKI, —. Le cheval domestique en Europe et les Protoaryens. C.R. Ass. franc. xxxii, 2, pp. 845-862.
962. ZACHARIAS, O. Über vertikale Wanderungen des Zooplanktons in den baltischen Seen. Biol. Centrbl. xxiv, pp. 638, 639.
Abstract, Zool. Zentrbl. 1905, p. 70.
963. —. Über die systematische Durchforschung der Binnengewässer und ihrer Beziehung zu den Aufgaben der allgemeinen Wissenschaft vom Leben. T. c. pp. 660-672.
964. —. Über die Komposition des Planktons in thüringischen sächsischen und schlesischen Teichgewässern. Forschber. Plon xi, pp. 181-251.
Abstract by ZSCHOKKE, Zool. Zentrbl. 1904, p. 175.
965. ZANDER, R. Laloy. L'évolution de la vie. Biol. Centrbl. xxiv, pp. 349-352.
Account of a work that appeared in 1902. Cf. Zool. Rec. 1902, Gen. Sub. LALOY (462).
ZEDERBAUER, E. [See BREHM & ZEDERBAUER (142).]
966. ZELENY, C. Experiments on the localization of developmental factors in the Nemertine egg. J. exp. Zool. i, pp. 293-329.
967. —. Studies in compensatory regulation. [Abstract.] Science xix, p. 215.

968. *ZELL, TH. Ist das Tier unvernünftig? Neue Einblicke in die Tierseele. Stuttgart, 1904, 198 pp.
Abstract by VON BUTTEL-REEPEN, Zool. Zentrbl. 1904, p. 673.
969. ZIEGLER, H. E. Die ersten Entwicklungsvorgänge des Echinodermeies, insbesondere die Vorgänge am Zellkörper. Festschr. Haeckel [Denk. Ges. Jena xi], pp. 539-569, pl. xvi.
970. —. Der Begriff des Instinctes einst und jetzt. Zool. Jahrb. Suppl. vii, pp. 700-726.
Summary by L. PLATE, Arch. Rassen i, pp. 449, 450.
971. —. Über die Orthographie in der Zoologie. Zool. Anz. xxvii, pp. 183, 184.
972. —. Das zoologische System im Unterricht. Verh. Deutsch. zool. Ges. 1904, pp. 163-180.
[ZITTEL, K. A. VON. Obituary. See OSBORN (685).]
973. ZYKOFF, W. Über das Plankton des Flusses Seim. Zool. Anz. xxvii, pp. 214, 215.
974. —. Das Plankton des Seliger Sees. T. c. pp. 388-394.

II.—SUBJECT-INDEX.

1. GENERAL WORKS, including GENERAL TEXT-BOOKS, ESSAYS, EVOLUTION, ETC.

Special text-books are recorded under the subjects to which they refer.

a. General works on Zoology. General text-books:—

- Modern biology, general exposition, WASMANN (919).
General work, BRONN (146).
Animal Kingdom, general work, SCHULZE (817).
Nature of man, German translation, METSCHNIKOFF (614).
Treatise on zoology, Vol. iii, Echinoderma, DELAGE & HÉROUARD (241).
Compendium of Zoology, 2nd ed., EMERY (271).
Text-book of Zoology, COLTON (198).
Elementary Biology, PARKER (697).
Text-book, Claus, 7th ed., GROBBEN (343).
General review of Zoology, 1903, CAULLERY & MESNIL (175).
Text-book of Morphology, Embryology and reproduction Insects, HEN-NEGUY (389).
A Descriptive zoology, BIZZARRINI (82).
Zoology and medicine, BLANCHARD (84).
Account of internat. Zool. Congr. 1904, CAULLERY & MESNIL (176).
Text-book of Mammalia, WEBER (925).
Social value of Geology and Palæontology, KRAEMER (486).

b. Philosophical:—

- Philosophical biology, popular exposition, HAECKEL (362).
Biology and philosophy, KERSTEN (470).
Natural science and cosmical ideas, LADENBURG (494).
Conceptions and opinions, of Nature, DRIESCH (254).
Theoretical biology, Reinke's views, PLATE (726).

Nature of life, BARD (37).

"Mneme," principle in organic process, SEMON (828).

Neovitalism, MELDOLA (604).

Neovitalism and teleology, REINKE (757).

Mechanism and vitalism, MELZER (605).

Livingness in matter, ROBERTSON (774).

Vitality and chemical constitution, PRESCOTT (739).

The origin of life, HOOKHAM (417), ALLEN (11), SCRIBNER (827).

Species and their constancy biochemical, ABDERHALDEN (2).

The Ocean and its inhabitants, THOULET (874).

The Ocean, laws and problems, THOULET (875, 876).

Life in crystals, BRAZZA & PIRENNE (141).

Heredity and the cause of variation, BEARD (58).

Uncertainties, HOWORTH (418).

Race, and individual or association with it, PLOETZ (729).

Evolution and heredity, their nature, HUTTON (429).

c. Evolution :—

Evolution, METCALF (612) ; WEISMANN (927), translation by THOMSON (928).

Evolution, Metcalf's views, COOK (204).

Abstracts of numerous recent works on evolution, SCHRÖDER (809).

Abstracts of some recent Darwinistic works, GOLDSCHMIDT (333).

Evolution, the present position, SCHNEIDER (803).

Evolution criticism of theories, GERARD (315).

Evolution and natural selection, COOK (205).

Evolution not origin of species, COOK (203).

Controverted points, essays on, GIARD (319).

Evolution ; its orthodoxy etc., BORJA (115).

Ethics and evolution theories, ACHELIS (10).

Evolution and Kinetic hypotheses, DE BOISSOUUDY (110).

Goethe and evolution, LYELL (567).

Review of recent ideas, FRANCÉ (297).

Evolution morphological, and evolution chemical, DUCCESHI (264).

Darwinism, ERRERA (273), GUENTHER (350), SCHALLMAYER (791).

Modern Darwinism, FRANCÉ (298).

Plate's views on Darwinism, MEISENHEIMER (602).

Lamarckian and Darwinian views, RABL (747).

Origin of species, DASTRE (227)—Origin of species, modern views, TSCHERMAK (887).—Origin of species, Mendel's views, DARBISHIRE (226).

—Origin of species, botanical experiments, CORRENS (209).

Evidence of evolution, DE VRIES (245).—Mutations, evolution, DE VRIES (246).

Mutation theory ; duration of life on the earth, MOLL (629).

Mutation and selection, METCALF (611), and COOK (204).

Evolution, adaptation, mutations, MORGAN (653).

Divergence and environment, GULICK (351).

Evolution in man, ANTHONY (21).

Man and apes, MACNAMARA (579), SCHWALBE (821), UHLENHUTH (893).

Function and evolution, RABL (747).

Psychodiatema (or mind, or nervous system) in evolution, BARATONO (35).

Evolution of Vertebrates, WOODWARD (956).

Horse, evolution and ancestry, OSBORN (684).

Orthogenesis, egg-cases of fishes, DEAN (235).

Opisthenogenesis, law of development or movement of colour etc., PACKARD (693).

Origin of life, KOENIG (476).

Marine origin of life, QUINTON (743, 744), DE VARIGNY (897).

Plurality of inhabited worlds, WALLACE (914).
 Account of book by Laloy, ZANDER (965).
 Extinction, geological, of species, ABEL (3).
 Evolution of sex ornament, LAMEERE (497).
 Changes in habitat etc., pœcilogony, BOHN (102).
 Recent modification of Alpine fauna, CORCELLE (207).
 Anabolism, results of distinctions in, CRAMPTON (215).

d. Variation:—

Variation, ABRIC (7).—Variation etc., botanical, TSCHERMAK, E. (888).
 Variation, kinds of and nature of, HICKSON (407).
 Mutation theory, HUBRECHT (419).—Mutation, see also c.
 Mutations and species, *Crustacea*, BOUVIER (125).
 Correlative variation in numerous individuals and species, KREMPE (488).
 Progressive reduction of variability, Rosa's views, PLATE (728).
 Dimorphic forms, and species, COUTAGNE (124).
 Variation acquired and inherited, selection of small distinctions, COUTAGNE (211). See also f.
 Statistical methods, variation etc., DAVENPORT (231).
 Skew variation, LUTZ (565).
 Variation in human skull, races, SERGI (829).
 Variation of cranial bones, man, LE DOUBLE (510).
 Numerical variation, vertebræ, man, BARDEEN (38).
 Variation in Insects with discussion of general points, KELLOGG & BELL (465).
 Polymorphism and variation, ants, FOREL (294A).
 Physiology of variation, *Lepidoptera*, VON LINDEN (530, 531).
 Variation and selection in a Saturniid moth, CRAMPTON (217).
 Comparative variation of drones and worker bees, LUTZ (566), & PHILIPPS (723).
 Variation in Mollusca, definition and ætiology, BELLINI (66).
 Variation, rays of *Pecten*, DAVENPORT & HUBBARD (232).
 Variation, *Helix*, LANG (498).
 Variation, shell of *Neritina virginea*, METCALF (610).
 Variability and autotomy, *Phataria*, MONKS (637).
 Variation, *Pyramidula*, biometric, COLLINS (197).
 Aetiology of variation, *Anurea*, LAUTERBORN (506).
 Variation in teeth on Arachnid claws, HARTMANN (380).
 Seasonal polymorphism, *Daphnia*, experiments, OSTWALD (689).
 Variation, statistical, mathematical, correlative, hooks of *Tenia*, STEVENSON & ENGBERG (861).
 Variation and correlation, *Lumbricus*, dimensions and number of somites, PEARL & FULLER (703); *Arcella*, shell, iid. (702).
 Variation, measurements, *Phyllodactylus*, CAMERANO (167).
 New York Devonian, indigene and alien faunas; CLARKE (191).

e. Adaptation, Convergence, Environment:—

Adaptation, GANONG (309).—Adaptation, colour, HARGITT (373, 374).
 Degeneration and adaptation, LENDENFELD (516).
 Environment factors, PEIRCE (711).
 Digestive apparatus and alimentary regime, SPIESS (853).
 History of eye of *Amblyopsis*, EIGENMANN (270).
 Ear of *Phocæna*, BOENNIGHAUS (90).
 Direction of hair, WHIPPLE (937).
 Marine respiration, BOUNHIOL (124).
 Adaptation of egg-capsule of *Chimæra*, DEAN (235, 236).
 Convergence, theory, FRIEDMANN (301).

f. Selection and Protection:—

- Correlation of characters and selection, COUTAGNE (212).
 Selection and mendelian crosses, COUTAGNE (213).
 Value of distinctness of species, HAMBURGER (368).
 Unimportant characters that are specific, PETERSEN (718).
 Value of small variations, EHRENFELS & PLATE (269), HOFFMANN (412).
 Immobility, as protection, PIÉRON (725).
 Selective elimination, WELDON (931).
 Value of colour, *Mantis*, CESNOLA (179).
 Protective coloration, GREEN (341).
 Variation and elimination—fitness—in *Lepidoptera*, CRAMPTON (216).
 Autotomy and natural selection, GLASER (326).
 Selection and the spongy tissue of bones, LENDENFELD (518).
 Selection multi-nippled sheep, BELL (65).

g. Ethology (incl. Phænology):—(See also 4 d.)

- Animal societies, METSCHNIKOFF (613).
 Symbiosis and parasitism, 4 categories incl. Epocumeni, ARIOLA (25).
 Parasitism, origin of, FAUSSEK (280).
Culicidæ and their parasites, DYÉ (268).

h. Phylogeny, Organogeny (phyletic):—

[Only the wider phylogenetic speculations are here included. References to those limited to single classes should be sought for in the corresponding Records.]

- Organogeny, and phylogeny, GINESTE (325).
 Palæontology and zoology, HESCHELER (406).
 Invertebrate phylogeny, HUBRECHT (420).
 Origin of Mammals, FÜRBRINGER (305).
 Phylogeny and taxonomy, *Marsupialia*, BENSLEY (68).
 Phylogeny of *Annelida*, *Chordata*, *Ctenophora*, *Platyhelminthes*, HUBRECHT (421).
 Phylogeny of *Annelida*, WOLTERECK (953).
 Phylogeny *Tunicata*, JULIN (451).
Amphioxus, organ of sight, phylogenetic bearing, BOVERI (128).
 Dorsal cord, phylogeny and morphology, KEMNA (467).
 Lungs, origin of, GOETTE (330).—Phylogeny of lung, WIEDERSHEIM (942).—Phylogeny of lungs etc., Vertebrates, SPENGEL (852).

i. Isolated questions:—

- Degeneration, physiology of, CLAVET (192).
 Senility, histology of, MARINESCO (592).—Senility, see also 4 a.
 Left-handedness, recent work, MERKEL (606).
 Animal light, DUBOIS (256).—Phosphorence, BAGE (30).—Luminescent structures, of a glow-worm, recent bibliography, TOWNSEND (884).
 Mimicry, ENTZ (272), PACKARD (694).—Leaf-mimicry, fish, WILLEY (946).
 Cave life, VIRÉ (906).
 Coral reefs, GARDINER (312).—Coral reefs, Funafuti, SOLLAS (843).
 Deep-sea life, WITTEN (952).
 Telegony, guinea-pig, negative, MINOT (622).—Telegony, DARBISHIRE, *Biometrika* iii, p. 51.
 Beauty and muscular activity, KIDD (471).
 Spontaneous generation, RICHET (770).
 Heterogenesis, BASTIAN (48, 49).—Heterogenesis, review of Bastian's studies, J. A. T., *Nature* lxi, pp. 385–387.
 Sea-serpent, L'EOST (519).

k. Historical and biographical:—

Ancient biology, BURCKHARDT (158).—History of ancient biology, STRUNZ (864).

Præ-Aristotelian systems, BURCKHARDT (155).

Aristotle, the first book of his system, BURCKHARDT (156).

The biology of the Greeks, BURCKHARDT (157).

Rhuphos and Galenos, anatomical views of, VON TÖPLY (880).

Leonardo da Vinci and M. A. della Torre as anatomists, FORSTER (296).

History of Palæontology, forty years, WOODWARD (955).

Horse in Europe, earliest history, ZABOROWSKI (961).

Recent history, biology, LOEB (537).

Embryology, early history, BLOCH (87, 88).

Eighteenth century, evolutionists, Diderot, Herder, Monboddo, LOVEJOY (558).

Historical as to instinct, ZIEGLER (970).

Lamarck & Geoffroy, letter by, DEAN (237).

Gossip about Lamarck, B. D., *Science* xx, pp. 811, 812.

Haeckel, E. (363), *Festschrift* 70th birthday.—Haeckel, BREITENBACH (143), HERTWIG (402), LOISEL (556).

Krempf, receives the Prix Savigny, C.R. Ac. Sci. cxxxix, p. 1098.

Weismann, A. (929), *Festschrift* 70th birthday.—RAWITZ (749).

Commerce in foreign animals, 16th century, Marseilles, HAMY (369).

Mummied animals of ancient Egypt, SCHLOSSER (795).

Sepulchral, latin, animals, MARCHI (589).

Wolff, K. F. and his ideas, WALDEYER (912).

W. J. Burchell and his collections, POULTON (735).

André Sniadecki, centenary, his views, LAGOWSKI (495).

Some Scottish Naturalists, HARVIE-BROWN & MACPHERSON (386).

Popular errors in Guatemala, RODRIGUEZ (775).

Measures against *Anopheles* in antiquity, MANZI (583).

Allman, George James, H. (357).

Beecher, Charles Emerson, JACKSON (433).

Brown-Séguard, BERTHELOT (74).

Budgett, John Samuel, *Nature* lxi, p. 300.

Edwards, Henri Milne, BERTHELOT (73).

Evans, Henry, obit., *Nature* lxx, p. 327.

Fea, Leonardo, biography, GESTRO (318) and PARONA, *Atti Soc. Ligustica* xiv, pp. 304–308.

Fickert, Karl, Rudolf, Dietrich, VON LINDEN (529).

Filhol, Henri, biography with portrait and list of writings, PETTIT (722).

Flower, Sir William, CORNISH (208), M. (573).

Gegenbaur, Carl, G. (306), GORKA (338), also notice by BÜTSCHLI, pp. 405–409, *Zool. Zentrbl.* 1904.

His, Wilhelm, obit., *Nature* lxx, p. 58.—Biography, KOLLMANN (478).

Kowalevsky, A., VAYSSIÈRE (900).

Lacaze-Duthiers, Henri de, H. (356).—Paris Museum, Lacaze-Duthiers and others, historical and biographical, JOUBIN (450).

Marey, E. J., obit., *Nature* lxx, p. 57.

Mivart, St. George J., H. (355).

Nicholson, Henry Alleyn, M. (572).

Raspail, F. V., BLANCHARD (83).

Spencer, Herbert, autobiography (850).—Spencer, Herbert, relation to Darwin & Weismann, SHARP (833).—Herbert Spencer & C. Renouvier, MICHEL (618).

Zittel, Karl Alfred von, OSBORN (685), POMPECKJ & BÜTSCHLI (734), A. S. W., *Nature* lxi, pp. 253–255.

1. Pedagogic and popular:—

- Biology in higher schools, discussion, KRAEPELIN and others (487).
 Biology in German High Schools, LAKOWITZ (496).—Nat. Science in German High Schools, NORRENBERG (674).
 Teaching biology in secondary schools, LLOYD & BIGELOW (535).
 The treatment of systematic zoology for pedagogy, ZIEGLER (972).
 Nature study, HILL & WEBB (409), MIALI (617).
 Value of evolution in education, LE DANTEC (508).
 The teaching "origin of species" in schools, DAHL (220), PLATE (727).
 Conference of science teachers, Nature lxi, pp. 282-284.
 Diagrams for schools, SCHOENICHEN (804).
 Collegiate course, zoology, BIGELOW and others (79).
 Zoology in medical schools, BRAUN (139).
 Beauty of marine fauna, LANG (499).
 Popular Natural History, DAVIS (233).
 Popular, LATTER (505).—Wild Nature, KEARTON (457).
 Domestic animals, natural history of, KELLER (459).

m. Nomenclature:—

- Nomenclature, PALMER (696).
 Names omitted from nomenclators of genera, WATERHOUSE (922).
 Nomenclature and classics, CLEMENTS (193).
 System of revised rules of nomenclature, MAEHRENTHAL (580).
 Rules and recommendations, international code, POCHE (730).
 The types of genera, DYAR & CAUDELL (267).
 Citation of types of new genera, COCKERELL, p. 407, Science xx.
 Uniform names for the Orders of *Insecta*, SHIPLEY (835).
 Early, 1758, literature and nomenclature, POCHE (731).
 A, 1758, forgotten work, POCHE (732).
 Corrections orthographical, KORSCHOLT (482), SPENGEL (851), ZIEGLER (971).
 Vernacular names, GILL (323).

n. Taxonomy:—(See also h).

- Taxonomy and morphology, *Arthropoda*, LANKESTER (502).
 Classification of *Arachnida*, LANKESTER (503).
 Blood precipitin and affinity, NUTTALL (678, 679).
 Koic and Knidic systems before Aristotle, BURCKHARDT (155).

o. Museums. Methods. Economical:—

- Museums, with numerous plates, BATHER (55).—Museums, GRATACAP (339); cases, etc., MEYER (615).
 Management of Museums, HARMER (375).
 Japan biological station, DEAN (234).
 British Museum, historical, LANKESTER (504).
 Millport Marine Biol. Station, LINDSAY (533).
 Burchell's African and S. American collections, POULTON (735).
 The Sutton-Broad Laboratory, Tr. Norfolk Soc. vii, pp. 731, 732, illustrations.
 London Zoological Gardens, official guide, MITCHELL (627).
 Mathematics in biology, PICARD (724).
 Skew frequency curves, KAPTEYN (454).—Dimorphic curves, HELGUERO (387).
 Somatometric method, CAMERANO (166).
 Statistical methods, Sheppard, Safford and others, PEARSON, Science xx, p. 765.
 Oceanography, MONACO (633, 635, 636).

Oceanography near shore, THOULER (877).
 Handbook microscop. technique, 5th ed., BÖHM (92).
 Photo-micrography, and micrometry, THOMSON (872).
 Piscicultural apparatus, Regulation of temperature, VIGUIER (903).
 Use of low temperatures for research, MACFADYEN (578).
 Distilled, and artificial sea-water, LYON (568).
 Cement for fastening alcoholic jars, DE GROOT (345).
 Storing microscopic slides, MARLATT, *Science* xx, pp. 925, 926.
 Report on economic zoology, THEOBALD (870).

p. Bibliography and Records:—

International Catalogue of Sci. lit., Zoology 1901, MINCHIN (620).
 International Catalogue, criticism, SCLATER (823).
 Literature of 1903, SHARP and others (831).
 Records of zoology for parts of years 1900, etc., WELTNER (932).
 Bericht of Zoological biology 1903, MAYER (598A).
 Lists of titles, FIELD (288).
 Annual review of Zoology, CAULLERY & MESNIL (175).
 Summary of work on anatomy and development, chiefly 1903, MERKEL & BONNET (607).
 Record of anatomy and development, Vertebrate, SCHWALBE (820).
 Bibliography of anatomy and development, Vertebrate, 1892-1901, E. SCHWALBE (819).
 Literature of anatomy 1903, 1904, HAMANN (367).
 Record of Physiology, 1903, HERMANN (397).
 Recent Russian literature, summary in German, STIEDA (862).
 Bibl. Canadian zoology, 1902, WHITEAVES (938).
 Bibliography of Brazilian Palæontology, BRANNER (136).

2. DISTRIBUTION, EXPEDITIONS, TRAVELS, PLANKTON.

a. General:—

Zoogeography, JACOBI (435).
 Geographical Distribution, recent advances, ORTMANN (683).
 Climate and Distribution, WALKER (913).
 The two chief faunas, PACKARD (692).
 Local distribution, BROWNE (147).
 Where did life originate, SCRIBNER (827).
 Original home of man, Klaatsch and Schoetensack theories, RHUMBLER (763).
 Distribution of marine animals, M'INTOSH (625).
 Distribution of marine larvæ, GARDINER (311).
 Bipolarity and distribution of *Bryozoa*, CALVET (165).
 Antarctic fauna, ? bipolarity, PELSENEER (712).
 Antarctic Continent, Archiplata, BLASCHKE (85).
 The Wallace and the Weber limits between Asia and Australia, PELSENEER (713).
 Distribution of *Mollusca*, SIMROTH (838).
 Subterranean fauna, France, VIRÉ (905).
 Extinction in England, WEBB, MCDAKIN & GRAY (923).

b. Expeditions:—

Arctic polar expedition, BÉNARD (67).
 "Belgica" exp., BELGICA (64).—"Belgica"; account of parts published before 1904, W. H. DALL, *Science* xix, pp. 656-658.

Zoology of Lake Baikal, KOROTNEFF (481).

German South polar expedition, GAZERT (314).

"Harriman" Alaska exp., MERRIAM (608).

"Humboldt" Plankton Expedition, Atlantic, HENSEN (392).

"Maja" Deep sea, LO BIANCO (536).

"Princesse Alice" 1903; RICHARD (767, 768), MONACO (634).—Princesse Alice II; Gulf of Gascony, MONACO (631).—Prince of Monaco's yacht, MONACO (632).

"Princeton" exp. Patagonia, SCOTT (824).

"Siboga" exp., WEBER (924).

"Valdivia" exp., CHUN (190).

White Nile and Egypt, Swedish expedition, JÄGERSKIÖLD (436).

c. Travels :—

Borneo, BECCARI (63).

Hokkaido, Japan, KLOCKE (474).

Guianas, ANDRE (18).

Mafia, Zanzibar, the Comores, VOELTZKOW (907).

d. Faunas. Special Regions :—

Neolithic fauna, Central Europe, SCHOETENSACK (805).

Changes in fauna of Alps since glacial period, SCHULZ (816).

Arctic Fauna, RÖMER & SCHAUDINN (779).

Faroe islands, ANNANDALE (20).

Scotland, Highlands of, HARVIE-BROWN & MACPHERSON (386).

Marine fauna Northumberland, MEEK (600).

Cambridgeshire, British Ass. Guide, MARR & SHIPLEY (594).

Plymouth marine invertebrate fauna, (591).

Alpine fauna and flora of the Ardennes, FREDERICQ (299).

Fauna of Lake Léman, FOREL (295).

Fauna of Canton Tessin, KELLER (458).

Fauna of valley in Southern Alps, PAVESI (699).

Capri marine Fauna, LO BIANCO (536).

Fauna of Adriatic Sea about Triest, RÖMER (778).

Salt lakes, Roumania, BUJOR (152).

Fauna of Cephalonia, SANGIORGI (789).

Ponto-Aralian-Caspian special province, SOWINSKY (846).

Indian and Atlantic Oceans, recent work, KULCZYCKI (489).

Maldives and Laccadives, GARDINER (310), review, *Nature* lxx, pp. 337, 338.

Ceylon, marine biology, HERDMAN & others (396).

Indo-China, Fauna, PAVIE (700).

Philippines, note on a general work, by ELERA, DYAR, pp. 57, 58, *J. N. York Ent. Soc.* xii.

Fauna Hawaiiensis, SHARP (832).

Biology of a coral-island, SCHNEE (799).

Fauna of the Marschall islands, SCHNEE (798).

New Zealand, HUTTON & DRUMMOND (430).

Fauna of New Zealand, complete list, with dissertation, HUTTON (428).

Moss-fauna Antarctic, RICHTERS (771).

Alaska, OSGOOD (688).

Central America, GODMAN (329).

South polar fauna, VANHÖFFEN (896).

Falkland islands, chiefly *Aves*, VALLENTIN (894).

Cretaceous fauna, Ekaterinoslaw, chiefly *Mollusca*, FAVRE (281).

N. S. Wales, Cretaceous Invertebrates, ETHERIDGE (274).

Solenhofen fossil fauna, WALTHER (917).

Palaeontology etc. of Brazil, BRANNER (136).

e. Plankton, and Oceanic Zoology:—Oceanography see 1 o.

Plankton net, BRUCE (148).—Two Plankton nets, RICHARD (769).

Vertical movement of Plankton, Baltic lakes, ZACHARIAS (962).

Plankton North Sea, REDEKE & BREEMEN (752).—Northern Seas, KNUDSEN (475).—Atlantic, Mediterranean Red Sea, CLEVE (194).

Inland waters, value of thorough investigation, ZACHARIAS (963).

Plankton of Arctic lakes, SKORIKOW (839).—Plankton of Lake Seeliger, Volga, ZYKOFF (974).—Plankton of Danish Lakes, WESENBERG-LUND (934).

Summer Plankton, Newa and Lake Ladoga, SKORIKOW (840).

Freshwater Plankton, Lac de Bret, LINDEN (532).—Italian Alpine lakes, MONTI (643).—Alpine lakes, Tyrol, BREHM & ZEDERBAUER (142).

Elevated Lakes, Rocky Mountains (chiefly *Crustacea*), WARD (918).

Plankton of Seim River (Dnieper), ZYKOFF (973).—Of Murgab River, Turkestan, MEISSNER (603).

Plankton of pools, Germany, ZACHARIAS (964).

3. MORPHOLOGY.**a. General :—**

Only a few of the anatomical papers of the year are included here : others may be found in the Special Records. For a list of Anatomical Records see 1 p.

Place of Morphology in Zoology, MAGGI (581).

Record of anatomy and development, Vertebrate, SCHWALBE (820).

Anatomical views of RHUPHOS & GALENOS, VON TÖPLY (880).

Recent Russian literature, anatomy, STIEDA (862).

Animal size and form, KEMNA (466).

Morphology and other sciences, DAVENPORT (230).

Text-book Comparative Anatomy, HALLER (366).

Text-book of dissection, JAMMES (437).

Anatomy of frog, GAUPP (313).

Anthropology, morphology, Vertebrates, DUCKWORTH (265).

Anatomical nomenclature, BARDLEBEN (41).

Anatomical nomenclature, old terms, BERT & PELLANDA (71).

Segmentation, origin of, SCHNEIDER (202).

Metamerisation and the cephalisation of *Annelida*, MALAQUIN (582).

Germ-layers in regeneration, MORGAN (649).

Symmetry and asymmetry, bilateral animals, DUNCKER (266).

Asymmetry, JENNINGS (447).

Circular form, acephalous Molluscs, ANTHONY (22).

Gonads and mesoderm, *Ctenophora*, SCHNEIDER (801).

Morphological superiority of female, MONTGOMERY (640).

Skeleton, recent work, BARDLEBEN (40).

Articulation of jaw, comparative anatomy, KJELBERG (473).

Face and brain, Man and Apes, STRATZ (863).

Bones of foot, Primates and Man, VOLKOV (911).

Morphology and classification of *Arthropoda*, metamerism, etc., LANKESTER (502).

Morphology of head in *Insecta*, HOLMGREN (416).

Morphology of central ganglion, Tracheata, HALLER (365).

Digestive system, recent work, OPPEL (680).

Organ of sight, recent work, KALLIUS (452).

Vitreous body, development and morphology, KÖLLIKER (477).

Cerebral dorsal structures lower Vertebrates, morphology and function, KEMNA (468).

Peripheral nervous system, SCHULTZE (815).

Reissner's fish-like Vertebrates, SARGENT (790).

b. Histology:—

General treatise on histology, PRENANT, BOUIN & MAILLARD (738).

SCHNEIDER remarks on his book on histology (800).

Comparative histology, Vertebrates, atlas, LÖWENTHAL (559).

The neuron theory, LEVI (523).

The ganglion-cell, historical, BETHE (76).

Neuroglia, RUBASCHKIN (783).

Histology, glands and ducts male reproductive system, *Vertebrata*, OPPEL (681).

Digestive system, *Polychæta*, *Lagis*, BRASIL (137).

Red blood-corpuscle, recent work, WEIDENREICH (926).

Histology of muscle, PRENANT (737).

Comparative histology cartilage-cell, CHATIN (183).

Ramified cartilage, CHATIN (182).

Softening chitin for sections, METALNIKOFF (609).

Fixation, Protamin, BERG (69).

Histology of testis, see 6 c.

c. Teratology:—

The anatomy of particular monsters is not included.

Teratology and development-mechanics, NEUMANN (671), GOLDSTEIN (335).

Ideas as to Teratology, RABAUD (745).

Teratology of head and limbs, acrometagenesis, BABÈS (27).

Compound monsters, TUR (889).—Polygerminal monsters, TUR (891).—Double monsters, WILDER (943).—Double monsters with cyclopic defect, SPEMANN (849).—Experimental cyclopic *Triton*, SPEMANN (849).

Double formations, *Lumbricidæ*, KORSCHKE (483).

Hyperplasy, stag-horns, BOTEZAT (117).

Dwarfs, recent work, WINDLE (950).

4. PHYSIOLOGICAL.

a. General:—

Record of physiology 1903, HERMANN (397).

Chemical biology, treatise, CARRACIDO (171).

Physico-chemical methods in biology, HENRI & LARGUIER (390).

Chemical activity of organisation, HERZOG (405).

Chemotaxis, RABES (746).

Vitality v. matter, BETHE (75).

Influence of light, specially chemical, HERTEL (398).

Light and absence of light, effects, VIRÉ (904).

Life and electricity, WALLER (916).

Physical chemistry, cell and tissues, PAULI (698).

Organic chemistry, vital products, MELDOLA (604).

Life in an atmosphere of hydrogen, MARCACCIO (584).

Rhythm, in the animal kingdom, UEXKÜLL (892).

Erepsin in all tissues, VERNON (901).

Muscle-plasma, characters in the classes of animals, PRZIBRAM (741).

Increase of weight, STEFANOWSKA (855).

Growth and senility, HENRI & BASTIEN (391).

Senility, causes of, LORAND (557).

Alteration of colour, size etc. experimentally, VON LINDEN (531).

Metabolism, DESCHAMPS (243).

Metabolism and autolysis, Testes and Spleen, LEVENE (520).—Pancreas, Liver and Spleen, LEVENE (521).

Radioactivity of organisms, TOMMASINA (879).

Emission of N rays; CHARPENTIER (180), DUBOIS (255).

Action of radium, lower forms of life, WILLCOCK (945).

Becquerel rays, BAEYER (29).

Past conditions influencing movements, *Rana*, BOHN (107).—Past conditions and inanition, BOHN (108).

Influence on organism of interstitial gland, testis, ANCEL & BOUIN (10–17). See also **8 b.**—Genital poisons, LOISEL (550), poisons in eggs, LOISEL (551).

Inanition and metamorphosis, BOHN (99).

Hunger and diminution and degeneration, *Planaria*, SCHULTZ (813).

Injury giving rise to sebaceous glands, RIBBERT (766).

Parthenogenesis, see **7 a.**

b. Particular Functions:—

Movement, ciliary, automatic, ABRIC (6).

Comparative phys., liver, DEFLANDRE (238).

Tegument of Arthropods as producing sugar, MIRANDE (626).

Ear, conduction of sound, BOENNIGHAUS (90).

Muscular contraction, MARCEAU (585).

c. Colour and Pigment:—

Coloration of living matter, RŮŽIČKA (785).

Colour in the animal kingdom, JACOBI (434).

Colour, and selection, HARGITT (373).

Colour physiology *Crustacea*, GAMBLE & KEEBLE (308).

Pigmentation, SCHIEDT (794).

The problem of pigmentation multiple, ABRIC (4).

Coloration, mammals and birds, BONHOTE (111).

Iridescent and metallic coloration, birds and insects, BIEDERMANN (77).

Winter-whitening of Vertebrates, BARRETT-HAMILTON (44).

Chromoblasts, *Torpedo*, CAVALIÉ (177).

d. Nervous and Sensory: Psychology:—

Physiology of nervous system, review, FREDERICQ (300).

Change of function in sense-organ, T. BOVERI (128).

Instinct, historical account, ZIEGLER (970).

Comparative psychology, present status, MILLS (619).

Animal psychology, WASMANN (920), ZELL (968).

Mind in animals, VASCHIDE & ROUSSEAU (899).

Soul and intelligence, man and animal, SCHUSTER (818).

Association of ideas, apes, VASCHIDE & ROUSSEAU (898).

Psychology of invertebrates, BOHN (93).

Psychology—maternal affection—*Arachnida*, LÉCAILLON (507).

Love in animals, COUPIN (210).

Insect psychology, FOREL (294).

Behaviour of lower organisms, JENNINGS (446).

Orientation, at a distance, BONNIER (113).—Orientation, pigeon, THAUZIES (869).

Orientation in connection with tide, BOHN (94).

Sense of equilibrium, *Gonionemus*, MURBACH (665).

Position and tropisms, BOHN (100).—Anhydrobiosis and tropisms, BOHN (95, 101), DUBOIS (257).

Inherited memory, protoplasm of *Convolvata*, BOHN (97, 98).

Reactions of Planarians, PEARL (701).—Of *Corymorpha*, TORREY (881).

Heliotropic reactions, *Crustacea*, LOEB (547).
 Electric and photic stimuli, *Gonionemus*, reaction-time, YERKES (958).
 Reactions, *Sagartia*, TORREY (882).
 Electricity, reactions of *Mnemiopsis*, HUNTER (425).—Electricity, reactions, *Polyorchis*, BANCROFT (34).
 Phototropism, BOHN (96).
 Rheotropism, fishes, LYON (570).

5. PROTOPLASM AND CELL. See also 6.

a. General:—

Treatise on histology, Vol. i, Cytology, PRENANT, BOUIN & MAILLARD (738).
 Annual review of Cytology, HENNEGUY (388).
 Morphology and biology of the cell, general work, GURWITSCH (352).
 Cell and cell-division, GURWITSCH (353).
 Cell-life and cell-mechanics, RHUMBLER (762).
 The cell; histology, syncytium, ROHDE (777).
 Kinds of cells, HOLMGREN (415).
 Cell-connections, SCHUBERG (810).
 Cell-physiology, Echinoderm egg, ZIEGLER (969).
 Micro-chemistry of cells, MACALLUM and others (576).
 Individuality of chromosomes; centrosome, cell-processes, parthenogenesis, PETRUNKEWITSCH (719).
 Cells and environment, QUINTON (742).
 Cytology and heredity, HÄCKER (358), MONTGOMERY (641).
 Rejuvenation, the process, heredity and sex, MINOT (623).
 Cytology of parthenogenetic eggs, *Mactra*, KOSTANECKI (484).
 Physical imitations of vital activities, JENNINGS (448).
 Temperature and mitosis, JOLLY (449).
 Degeneration in *Actinospherium*; ætiology of tumours, R. HERTWIG (404).
 Lines of force and chains of force in karyokinesis, HARTOG (385).—
 Cellular fields of force, magnetic models, HARTOG (384).
 Diffusion; fields of force, LEDUC (511).
 Transformation of somatic into reproductive tissue, FARMER (277).

b. Protoplasm:—

Protoplasm, experiments on, GREELEY (340).
 Protoplasm, physiological properties, HARRIS (378).
 Structure of protoplasm, *Vorticellidae*, FAURÉ (279).
 Protoplasm and chemotaxis, BARRATT (43).
 The fluidity of protoplasm, SIMROTH (836).
 Structure of protoplasm in leucocytes, SAINT-HILAIRE (786).
 Cell-protoplasm, histology, VON BERGEN (70).
 Immortality? of protoplasm; effect of conjugation, CALKINS (163).
 Artificial protoplasm, RENAUDET (758).
 Protoplasm and the constituents of the Ocean, MACALLUM (574, 575).

c. Cell, structure and function:—See also 3 b, and 6.

Cell-process, RHUMBLER (764).
 Dynamics of mitosis, GALLARDO (307).
 Amitosis and mitosis in insect ovary, DAIBER (221).
 Amitosis, egg-follicles, *Insecta*, KELLOGG (463).—Amitosis in regen. *Lepidoptera* pupa, HIRSCHLER (411).—Amitosis, *Moniezia*, CHILD (184).—
 Amitosis in embryo of *Fasciolaria*, H. L. OSBORN (686, 687).
 Division of *Flagellata*, FOÀ & GRASSI (293).

Mitochondria, Chondromites, Spheres, structure and formation, ROHDE (776).

Chromidial threads in actively functioning somatic cells, GOLDSCHMIDT (331, 332).

Cytology, parasitic Infusorian, LÉGER & DUBOSCQ (515).

Mitosis in malignant growths, BASHFORD & MURRAY (46, 47), FARMER & HANSEMAN (278), MURRAY (666).—Heterotype cell-division in malignant tumours, HÄCKER (361).—Heterotype division and malignant tissue [translation of FARMER, MOORE & WALKER, *Zool. Rec.* 1903, *Gen. Sub.* (232)], *Biol. Centrbl.* xxiv, pp. 1-7.

d. Nucleus, Nucleolus, Centrosome, etc.:—(See also 6):

Chromosomes, structure and individuality, BAUMGARTNER (56).

Chromosomes, their individuality; centrosomes, historical, cytasters, PETRUNKEWITSCH (719).

Nucleus and formation of chromosomes, soma, plants, GRÉGOIRE & WYGAERTS (342).

Centrosome, ARIOLA (24).

Cleavage centrosome of various origin, CONKLIN (200).

Cytasters and centrosomes in artificial parthenogenesis, WILSON (948).

Excretion, nuclei Gasteropod embryo, GLASER (327).

6. OVUM AND SPERMATOZOON.

a. General:—(see also 7 and 8):

Significance of segmentation of fecundated egg, BRACHET (132).

The cytology of cross-breeding, HÄCKER (358).

Chromosomes, reduction, division, nature and import, Montgomery's views, HÄCKER (359).

Maturation and fertilisation, egg of Axolotl, JENKINSON (445).

Oogenesis, maturation, and early mitosis, *Planaria*, MATTIESEN (597).

Oogenesis and spermatogenesis, chromosomes, *Planaria simplissima*, STEVENS (860).

Maturation and fertilisation [botanical] *Pinus*, FERGUSON (283).

Polyspermy, merocytic nuclei, culture of spermatozoa, LABBÉ (492).

b. Ovum and oogenesis:—

Ovum and oogenesis, *Onychophora*, BOUVIER (126).

Cytology ovum, origin of germ cells, *Myzostoma*, CARAZZI (178).

Oogenesis, ovarian epithelium, histolysis etc., GRUVEL (348).

Development of chromosomes, Selachian egg; MARECHAL (590).

Oogenesis, Balbiani's nucleus, HOLLANDER (413).

Egg of mammals, *Vesperugo*, VAN DER STRICHT (895).

Oogenesis, *Delphinus*, PALADINO (695).

Oogenesis, *Clemmys*, MUNSON (664).

Oogenesis, *Proteus*, SCHMIDT (796).

Ovum of *Petromyzon*, LUBOSCH (560).

Chromosomes, oocyte, *Triton*, JANSSENS (441).

Oocyte, perinuclear plasma, GIARDINA & MONTGOMERY, p. 310, *Monit. Zool. ital.* xv.

Oogenesis, *Cynthia*, BLUNTSCHLI (89).

Vitelline body, spider eggs, NOWLIN (675).

Oogenesis in social *Hymenoptera*, BRUNELLI (150).

Oocyte, *Insecta*, and perinuclear zone, GIARDINA (322).

Follicular epithelium and nutrition of egg, *Melolontha*, MOLLISON (630).

Oogenesis, parthenogenetic *Aphidæ*, polar bodies, chromosomes, STSCHEL-KANOVZEW (865).

- Oogenesis, *Branchellion*, PÉREZ & GENDRE (715).
 Oogenesis, *Sagitta*, STEVENS (859).
 Oogenesis, *Porifera*, GÖRICH (337).
 Corpus luteum, JANKOWSKI (438).—Mammals and Anamniota, LUBOSCH (561).—Histology and function, COHN (196).
 Degeneration of ovules, *Dytiscus*, DUBUISSON (263).

c. Spermatozoon, Spermatogenesis :—

- Interstitial cells and spermatogenesis, BRANCA (133).
 Interstitial gland, testis, ANCEL & BOUIN (17).—Interstitial tissue of testis, horse, BOUIN & ANCEL (121).—Interstitial cells of testis, LOISEL (554).—Interstitial gland ?, testis, LOISEL (552).
 Absorption of spermatozoa in testis, *Molge*, PÉREZ (714).
 Spermatozoon, ruminants, SCHMINCKE (797).
 Spermatogenesis, Axolotl, BRANCA (134, 135).
 Reduction, spermatogenesis of *Myxine* and *Spinax*, SCHREINER & SCHREINER (806).
 Spermatozoa, *Petromyzon*, BALLOWITZ (33).
 Spermatozoa of Evertebrates, RETZIUS (760).
 Dimorphic spermat. of *Prosobranch. Moll.*, STEPHAN (857).
 Spermatozoon, *Helix*, BOLLES LEE (512).
 Spermatogenesis, *Gasteropod*, BONNEVIE (112).—Spermatogenesis, *Cephalopoda*, THESING (871).
 Achromatic figure and centrosome, spermatogenesis, *Myriapoda*, BOUIN (118).
 Spermatogenesis, reduction, chromatin, *Syromastes (Hemiptera)*, GROSS (346, 347).—*Blatta germanica*, WASSILIEFF (921).—*Gryllus*, VOINOV (909).
 Spermatogenesis, *Arachnoida*, BÜSENBERG (116).—Accessory chromosome spider, WALLACE (915).
 Spermatogenesis, *Decapod. Crust.*, LABBÉ (493).—Spermatozoa, crayfish, ANDREWS (19).
 Spermatogenesis, *Ascaris*, TRETJAKOFF (886).—*Hydra*, GUENTHER (349).—*Porifera, Calentera*, GÖRICH (337).

d. Maturation :—

- Maturation, MONTGOMERY (639).
 Maturation, *Fiona*, CASTEEL (172).
 Maturation, tetrads, *Crustacea*, LABBÉ (491).
 Chromosomes mixing of in reduction divisions, MONTGOMERY (638).
 Polar bodies, eggs of, *Ascaris*, TRETJAKOFF (885).

e. Fertilisation :—

- Fertilisation, HARTOG (382).
 Theory of fertilisation, BÜHLER (151).
 Fertilisation, methods, SCHUCKING (811).
 Fertilisation, natural and artificial, ABRIC (9).
 Fertilisation, Axolotl, hygroscopic substance and astral structure, JENKINSON (444).
 Polyspermy, effects of in *Ascaris*, BOVERI & STEVENS (130).
 Experiments as to self-fertilisation, Ascidians, MORGAN (645).

7. EMBRYOLOGY, DEVELOPMENT.

a. General :—

- History of Embryology till Harvey, BLOCH (87, 88).
 History of ideas of development, Wolff, evolution or epigenesis, WALDEYER (912).

- Embryology, Annual review, LOISEL (549).
 Record of development and anatomy, Vertebrate, SCHWALBE (820).
 Introductory text-book, embryology, frog and chick, REESE (754).
 Handbook of embryological technique, RÖTHIG (780).
 Handbook of vertebrate development, O. HERTWIG (399).
 Exposition of development-mechanics, ROUX (782).
 Chemistry of embryology, SOMMER & WETZEL (845).
 Recent Russian literature, STIEDA (862).
 Harvard, collection, value of embryological collection, MINOT (624).
 Development... = mosaic work of self-differentiating cells, WILSON (949).
 The energy of ontogenesis trout, TANGL & FARKAS (868).
 Cleavage in normal and artificial conditions, generalised explanation, SPAULDING (847).
 Normal and abnormal development comparison, frog, MORGAN (650), MORGAN & TORELLE (658).
 Aerobic and anaerobic respiration of egg, STĚPÁNEK (856).
 The term trophoblast, HUBRECHT (422, 423).
 Multiple fission and embryonic enzymes, HARTOG (382).
 Organogeny, histogenesis, and phylogeny, GINESTE (325).
 Embryonic ferments, HARTOG (383).
 Gerla cells, individuality of chromosomes, Mendelian ratio, etc., MONTGOMERY (639).
 Germ cells, LEVI (524).
 Petrunkevitch on polar body in bee, and reproductive organs, WHEELER (936).
 Germinogony, MARCHAL (586).
 Polyembryonic development, osmotic pressure, and shaking, MARCHAL (587).
 Aberrant origin of mesenteron in *Platygaster*, quantitative difference in vitellus, MARCHAL (588).
 Inanition and metamorphosis, BOHN (99).
 Egg, relations to future embryo, HERTWIG (400).
 Unsegmented egg and organisation, Ascidians, CONKLIN (199).—Organ-forming germ regions, CONKLIN (201).
 Light and metamorphosis, *Amphibia*, BOHN (103, 104, 105).
 Toxins and development, CHARRIN & LE PLAY (181).
 Electrical potential, developing eggs, HYDE (431).
 Absorption of vitellus, DUBUISSON (259).
 MORGAN, development of frog, translation by SOLGER (654).
 Development of *Rana* embryo influenced by Alga, BOHN (106).
 The form of man in embryological life, RETZIUS (761).
 Development of defective embryos, chick, LILLIE (528).
 Entoderm, *Lepidoptera*, SCHWANGART (822).
 Development of excretory system, including phylogeny, recent work, FELIX (282).
 Nerve and muscle, relations in embryo, frog, HARRISON (379).
 Nervous system and development, GOLDSTEIN (335).
 Nervous system in development and regeneration, influence of, GOLDSTEIN (334).
 Dimorphic development, *Polygordius*, WOLTERECK (954).
 Parthenogenetic development, DONCASTER (253).
 Parthenogenesis, physiological review, BOHN & VIGUIER (109).
 Parthenogenetic oogenesis, see **6 b**, STSCHELKANOVZEW (865).
 Artificial and natural parthenogenesis, PETRUNKEWITSCH (719).
 Exp. parthenogenesis, see **c**. Heterogenesis, see **1 i**.

b. Particular species, stages, and organs:—

- Peripheral nervous system, SCHULTZE (815).
 Embr. interstitial cells of Leydig, WHITEHEAD (939).
 Mesonephros and Müllerian ducts, *Amphibia*, HALL (364).—Mesonephric canals, *Cavia*, MEYER (616).—Head, kidney, and Wolffian duct, mammals, JANOŠIK (439, 440).
 Interrenal organ, POLL (733).
 Head of vertebrates, Cribrum mammals, FLEISCHMANN (292).
 Epiphysis cerebri, chick, CAMERON (168, 169).
 Nasal fossa, DIEULAFÉ (250).
 Cotyloid cavity, man and animals, DAMANY (222).
 Embr. pentadactyle extremities, vertebrates, SEWERTZOFF (830).
 Tail, vertebrates, YOUNG & ROBINSON (959).
 Embr. diaphragm, chick, BERTELLI (72).
 Bloodvessels, central nervous system, devel. and anatomy, STERZI (858).
 Suprarenal capsules, MINERVINI (621).—Suprarenal capsules, development and morphology, DIAMARE (248).
 Ovary and testis, mammals, ALLEN (12).
 Pericardium, rabbit, ROUVIÈRE (781).
 Pulmonar arteries, deer, SAKURAI (787).
 Implantation of ovum, *Spermophilus*, LEE (513).
 Allantois, VÖLKER (910).
 Vertebrate embryology, mandibular cavity, Selachians, DOHRN (252).
 Ectoblast, endoblast, termination of body, Selachians, SWAEN & BRACHET (867).
 Development of extremities, lower vertebrates, BRAUS (140).
 Devel. Bursa orientalis of vertebrates, BROMAN (145).
Phascolosoma, development, GÉROULD (316).
 Spinal ventral nerves, *Selachii*, NEAL (668).
 Amnion, Selachians, D'ÉVANT (244).
 Embr. Hair, dermal glands, integument, *Ursus*, MAURER (598).
 Hair and glands, cat, BACKMUND (28).
 Development, Hair of *Mus musculus* var. *alba*, OYAMA (691).
 Ammonshorn, *Mus*, LEVI (522).
 Eye, lens, *Rana*, LEWIS (526).
 Body-cavity and genital structures, early stages, *Salmonides*, BÖHI (91).
 Gastrulation, lizard, PETER (717).
 Embr. Excretory system, *Amphibia*, FILATOW (289).
Desmognathus, embryology, WILDER (944).
 Segmentation, ovum *Desmognathus*, HILTON (410).
 Organ of smell, *Spinax*, SUND (866).
 Embry. *Hylodes martinicensis*, SAMPSON (788).
Phyllomedusa (a *Hylid*) development, BLES (86).
 Trigeminal ganglia *Hypogeophis*, BRAUER (138).
 Hypochorda, *Salamandra*, REINHARDT (756).
 Segmentation, *Anguis*, NICOLAS (673).
 Scutiform gland, *Amphibia*, MUTHMANN (667).
 Embr. Hairs of *Platydictylus*, KUNITZKY (490).
Polypterus development, KERR (469).
 Spinal medulla, amphibians, BARBIERI (36).
 Gills of fishes, MOROFF (659).
 Air-bladder of fishes, MOSER (660).
 Absorption of yolk, viper, DUBUISSON (260, 262), in chick, DUBUISSON (261).
 Development of branchial apparatus, *Tunicata*, JULIN (451).
 Germinal layers, *Gastropoda*, FUJITA (304).
Haminea solitaria, early stage, SMALLWOOD (842).

Maturation, fertilisation, and early cleavage, *Haminea* (Opisth. Moll.), SMALLWOOD (841).

Fiona marina, embryology, cell-lineage table, CASTEEL (172).

Pennaria, early development, HARGITT (370).

Development and anatomy, nervous system, Scorpion, McCLENDON (599).

Entoderm origin, bee, DICKEL (249).

Enteropneusta young, RITTER & DAVIS (773).

Embryonal envelope, *Sipunculidae*, GERROULD (317).

Embryology of *Geonemertes*, COE (195).

Early stages *Myzostoma*, CARAZZI (178).

Embryology of *Dinophilus*, cell-lineage, NELSON (669).

Planaria, embryology, MATTIENEN (597).—*Planaria simplissima*, embryology, STEVENS (860).

Embryology of *Gyrodactylus*, KATHARINER (455).

Embryology of *Paragordius*, MONTGOMERY (642).

Embryology of *Rhabdocæla* and *Alloiocæla*, BRESSLAU (144).

Earliest stages, *Echinoderma*, ZIEGLER (969).

Ophiothrix, early stages, MACBRIDE (577).

c. **Experimental:**—(See also Regeneration, 8 d).

Introduction to experimental morphology, PRZIBRAM (740).

Plasmology, RENAUDET (759).

Artificial parthenogenesis, account of recent work, ABDERHALDEN (1).

Nature of artificial parthenogenesis, ARIOLA (23, 24), GIARD (321).

Tonogamy in artificial parthenogenesis, GIARD (320A).

Abnormal development, VIGÜIER (902).

Experimental parthenogenesis, *Bufo*, BATAILLON (50).

Experimental parthenogenesis, *Rana*, *Petromyzon*, BATAILLON (51).

"Specific" agents, experimental parthenogenesis, BATAILLON (52).

Experiments on eggs of *Rana*, etc., discussed, BRACHET (131).

Artificial parthenogenesis, *Ophelia*, BULLOT (153, 154).

Difficulties of rearing parthenogenetic larvæ of *Asterias*, DELAGE (239).

Complexity of conditions for successful experimental parthenogenesis, DELAGE (240).

Bilateral symmetry, egg of *Necturus*, EYCLESYMER (275).

Experiments by injury of eggs, birds, FERRET & WEBER (286, 287).

Results of injury to the envelopes, chick, FERRET & WEBER (284, 285).

Alcohol and Echinoderm eggs, FÜHNER (303).

Influence of Röntgen rays on development, embryos, GILMAN & BAETJER (324).

Unfertilised eggs of *Echinoderm*., yolk membranes, HERBST (393).

The influence of inorganic substances on the developments of Echinoderm larvæ, HERBST (394).

Inorganic substances, effect of *Echinoderm* egg development, HERBST (395).

Centrifuge experiments, egg of *Rana*, HERTWIG (401).

Exp. as to orientation of frog-embryo, O. HERTWIG (403).

Artificial parthenogenesis, *Arbacia*, HUNTER (424).

Salt solutions, frog, JENKINSON (442, 443).

Formation of structures from indifferentiated connective tissue, KANEKS (453).

Gravity in development, KATHARINER (456).

Artificial parthenogenesis, *Mactra*, cytological processes, KOSTANECKI (484, 485).

Tension and formation of fascicular tissues, LEVY (525).

Destruction of parts, embryo chick, LILLIE (527).

Solutions, Echinoderm eggs, LOEB (546).

- Dynamical conditions and development, LOEB (544).
 Artificial parthenogenesis, Echinoderms, LOEB (545).
 Growth and regeneration, *Tubularia*, influence of agents on, LOEB (541).
 Susceptibility during cleavage, LYON (569).
 Oxygen and CO₂, *Arbacia* egg, LYON (571).
 Solution-tension, importance of, MATHEWS (595).
 Tissue change in artificial cyphosis, dog, MATSUOKA (596).
 Gravity and centrifugal force, egg of toad, MORGAN (647).
 Injury first-formed blastomeres, frog, MORGAN & TORELLE (658).
 Review of Maas' text-book, MOSZKOWSKI (661).
 Pancreas, liver and spleen, *Acipenser*, NICOLAS (672).
 Artificial parthenogenesis, critical remarks, OTTOLENGHI (690).
 Localisation of embryo on blastoderm, chick, PEEBLES (710).
 Exp. with radium, frog embryo, SCHAPER (792).
 Anisotonic solutions and saponin, eggs, SOLLMAN (844).
 Effects of ether and salts, Echinoderm eggs, SPAULDING (848).
 Double monsters, cyclopic, SPEMANN (849).
 Injuries blastopore region, frog, TODD (878).
 Influence of radium on development, TUR (890).
 Centrifuge experiments, egg of *Rana*, WETZEL (935).
 Experiments as to germinal anatomy, egg of *Dentalium*, WILSON (947).
 Development of egg-fragments, *Cerebratulus*, YATSU (957).
 Exp. localization in egg of *Cerebratulus*, ZELENY (966).

8. REPRODUCTION, SEX, HEREDITY, REGENERATION.

a. General:—

- For cell-processes in connection with Reproduction see VI.
 Reproduction of organisms, aetiology, illustrations in *Protozoa*, HARTMANN (381).
 Conjugation and natural death, NERESHEIMER (670).
 Reproduction of Flagellata, FOÀ & GRASSI (293).
 Sexual reproduction, *Stylorhynchus*, LÉGER (514).
 Regeneration and non-sexual reproduction, *Sugartia*, TORREY & MERY (882, 883).
 Cross-breeding, specially cytological, aspects, HÄCKER (358).
 "Natural merogony," *Gyrodactylus*, KATHARINER (455).
 Breeding albino trout, PETTIS (721).
 Inadequate spermatozoa, deficient structures ensuing, SIMROTH (837).
 Alternation of generations and change of host, *Protozoa*, SCHAUDINN (793).
 Chromatin of hybrids, MOENKHAUS (628).
 Heterogeneous hybridisation, LOEB (540).
 Artificial hybridisation, LOEB (539).
 Hybrids, Echinoderm, BOVERI (127).
 Hybridisation of Echinoderms, LOEB (538).
 Natural and artificial parthenogenesis, PETRUNKEWITSCH (719).
 Parthenogenesis, *Apis*, BUTTEL-REEPEN (160).

b. Sex:—

- Phenomena of sex, *Aphidæ*, BALBIANI (31).
 Sexual dimorphism, DEWAR (247), LISTON (534), YOUNG (960).
 Breeding mice for sex data, COPEMAN & PARSON (206).
 The sexes of two eggs of a female pigeon, LOISEL (555).
 Superiority morphologically of female, MONTGOMERY (640).

Sexual-cycle in *Amæba*, CALKINS (164).

Hermaphroditism, SCHREINER (807).

Secondary sex characters independent of primary, KELLOGG (462).

Secondary sexual characters, GIARD (320).

Secondary sexual characters, LOISEL (554).—Secondary sexual characters and testis, SHATTOCK & SELIGMANN (834).

Origin of secondary sexual characters, BOUIN & ANCEL (123).—Influence of testis and interstitial gland thereof on organism, ANCEL & BOUIN (14-17), BOUIN & ANCEL (119).—Testes and sexual characters, frog, LOISEL (553).—Interstitial gland, see also 6 c.

Sex, and the determination of sex, ABRIC (8).

Determination of sex, BAYER (57), BEARD (62), BILLON (81), MARCHAL (587), MEISENHEIMER (601), SCHRÖDER (808), THOMSON (873).

Determination of sex in *Hymenoptera*, CASTLE (173), WHEELER (936).

Determination of sex, nuclear division or germinogony, MARCHAL (586).

Determination of sex by parthenogenesis, *Apis*, BUTTEL-REEPEN & BRESSLAU (159).

Determination of sex, and food, *Insecta*, KELLOGG & BELL (464).

c. Heredity:—(See also 6 e fertilisation):

Heredity, BATESON (53), PETRUNKEWITSCH (720), RITTER (772).

Nature of heredity, ABRIC (5), BEARD (59, 60), REID (755).

Physical forces and heredity, PERRIER (716).

Theories of inheritance tested, PEARSON (705).

Heredity and evolution, BATESON (54).

Heredity, abstracts of recent works, FISCHER (291).

Record of breeding and other experiments, MÜLLER (663).

Importance of tables of ancestry, GROBER (344).

Heredity of albinism, Mendel's laws, CASTLE & ALLEN (174).

Inheritance of coat-colour, greyhound, BARRINGTON, LEE & PEARSON (45).

Rabbits, coat and albinism, HURST (427).

Heredity of colour, mice, CUÉNOT (219), DAVENPORT (229), ALLEN (13).

Crossing albino and waltzing mice, DARBISHIRE (224, 225).

Heredity, hair, etc., horse, DAVENPORT (228).

Heredity of polydactyly, BALLOWITZ (32).

Heredity web-footed pigeon, STAPLES-BROWN (854).

Heredity of colour, pigeons, LOISEL (555).

Psychological heredity, man, RAWITZ (748).—Heredity of mental characters, man, REDFIELD (751).—Inheritance of mental and moral characters, man, PEARSON (708).

Pearson and mental heredity, LENDENFELD (517).

Heredity in var. of a moth, RAYNOR & DONCASTER (750).

Inheritance of song, birds, SCOTT (825, 826).

Heredity of variation, *Helix*, LANG (498).

Heredity of acquired characters, criticism of Lamarckian views, POULTON (736).

Heredity of acquired morbid conditions, DELAMARE (242).

Heredity, pathological, RÜDIN (784).

Heredity pathological, SCHÜLE (812).

Heredity of insanity, KÖNIG (479, 480).

Heredity of immunity from poisons, LUSTIG (562).

Collateral heredity in pathology, DAMAYE (223).

Crossing pigeons, WHITMAN (941).

The vigour of hybrids and mutations, COOK (202).

Heredity and crossing, HÄCKER (360).

Heredity and cytology, Mendel's laws, HÄCKER (358).

Cytology and heredity, MONTGOMERY (641).

Alternative inheritance, Mendel's laws, PEARSON (704).—Alternative inheritance v. Mendel's law, PEARSON (707).

Ancestral heredity and Mendelianism, LUTZ (564).

Heredity of diathesis, or Mendelian heredity, LE DANTEC (509).

Mendel's laws, account of, and list of works relating to, HURST (426).

Mendelian laws, COUTAGNE (213).

Mendelian heredity, CUÉNOT (218).

Mendel's law, PEARSON & LOCK (706).

Mendel's views and origin of species, DARBISHIRE (226).

Mendel's laws, wheat and barley hybrids, BIFFEN (78).

Mendel's laws, spermatogenesis, hybrid pigeons, GUYER (354).

Mendel's law and albinism in man, WELDON (930).

Chromosomes (individuality, etc.) see 5 c.

d. Regeneration (incl. Grafting):—

Regeneration, transplantation, abstracts of recent works, FISCHER (290).

Nature of regeneration, SCHULTZ (814).

Germ-layers and regeneration, MORGAN (649).

Regeneration and involution, recent work, BARFURTH (42).

Regeneration and ontogeny, ZELENY (967).

Regeneration and grafting, Hydroids, BILLARD (80).

The regulation of form, HOLMES (414).

Regeneration exemplified on a Lower Carboniferous Crinoid, WHITFIELD (940).

Radium and regeneration, frog, SCHAPER (792).

Röntgen rays and regeneration, Planarians, BARDEEN & BAETJER (39).

Organic polarity, analysis, MORGAN (651).

Polarity, *Tubularia*, MORGAN & STEVENS (657).

Polarity in regeneration of earthworm, MORGAN & DIMON (655).

Influence of nervous system, regeneration in *Alpheus*, BRUES (149).

Aetiology of form of regenerated parts due to function, CHILD (186).

Double structures, regeneration of *Lumbricidae*, KORSCHOLT (483).

Regeneration, various forms, MORGAN (644).

Regeneration, *Planaria*, polarity, axial heteromorphosis, MORGAN (652).

Morphological polarity, LOEB (543).

Regenerative powers of different tissues, WINTREBERT (951).

Regeneration of liver and kidney, RIBBERT (765).

Regeneration of nerves, MOTT, HALLIBURTON & EDMUNDS (662); LANGLEY & ANDERSON (500, 501).

Regeneration, embryo of chick, LILLIE (528).

Skeleton of regenerated limb, frog, BYRNES (162).

Regeneration, tadpoles, BYRNES (161).

Pigmented skin, frog, chromatophores, LOEB & STRONG (548).

Regeneration of bones, *Triton*, WENDELSTADT (933).

Regeneration, Cray-fish, REED (753).

Heteromorphic regen. *Palinurus*, ARIOLA (26).

Regeneration, *Lepidoptera* pupa, HIRSCHLER (411).

Regeneration, tarsi, *Periplaneta*, KELLOGG & BELL (465).

Regeneration, larval legs, silkworm, KELLOGG (461).

Non-regeneration sexual glands, *Lepidopterous* larvæ, KELLOGG (462).

Natural regeneration in Annelids, ORLANDI (682).

Regeneration and nervous system, *Leptoplana*, CHILD (187, 188).

Regeneration of segments, *Polychaeta*, IWANOFF (432).

Regeneration, Planarian, MORGAN & SCHIEDT (656).

Heteromorphosis, *Planaria*, MORGAN (648).

Regeneration heteromorphic tails, *Planaria*, MORGAN (646).—Regeneration heteromorphic tail, *Allobophora*, DIMON (251).

Regeneration in *Enchytræidæ*, NUSBAUM (676).

Natural regeneration, starfish, from single arm, KELLOGG (460).

Form-regulation *Cœlentera* and *Turbellaria*, CHILD (189).

Regeneration, *Tubularia*, GODLEWSKI (328); KING (472).—Regeneration, influence of medium, Tubularians, LOEB (542).—Regeneration, or closure, split stems *Tubularia*, BORING (114).

Regeneration *Cerianthus*, initiation, CHILD (185).

Regeneration and symmetry, *Actinaria*, CARLGREN (170).

Regeneration, *Rhizostoma*, HARGITT (371).

Regeneration, *Scyphomeduse*, HARGITT (372).

Regeneration, *Sagartia*, TORREY & MERY (883).

Regeneration, *Stylaria*, HARPER (376).



II. MAMMALIA.

BY

R. LYDEKKER.

CONTENTS.

| | Page | | Page |
|--|------|---|------|
| Introduction | 2 | Muridæ | 39 |
| I. TITLES | 2 | Jaculidæ and Spalacidæ | 41 |
| II. BIOLOGY (SUBJECT-INDEX). | | Geomyidæ and Heteromyidæ | 41 |
| Anatomy (A—H) | 27 | Octodontidæ | 41 |
| Development (I) | 29 | Hystericidæ and Erethizontidæ | 41 |
| Variation; various notes (K) | 30 | Dinomyidæ and Caviidæ | 41 |
| Geographical distribution | 31 | Eomyidæ | 41 |
| †Fossil faunas | 32 | Leporidæ and Ochotonidæ | 42 |
| III. SYSTEMATIC. | | UNGULATA | 42 |
| PRIMATES | 33 | ARTIODACTYLA | 42 |
| Anthropoidea | 33 | Bovidæ and Antilocapridæ | 42 |
| Lemuroidea | 34 | Giraffidæ and Cervidæ | 42 |
| CHIROPTERA | 34 | Tragulidæ and Camelidæ | 44 |
| INSECTIVORA | 35 | Suidæ, Dicotylidæ, Hippopotamidæ etc. | 44 |
| CARNIVORA | 36 | PERISSODACTYLA | 45 |
| Carnassidentia | 36 | HYRACOIDEA, BARYPODA and AMBLYPODA | 46 |
| Felidæ and Viverridæ | 36 | PROBOSCIDEA | 46 |
| Proteleidæ and Canidæ | 37 | CETACEA and SIRENIA | 46 |
| Ursidæ and Procyonidæ | 37 | EDENTATA and EFFODIENTIA | 47 |
| Mustelidæ | 38 | MARSUPIALIA | 48 |
| Pinnipedia | 38 | MONOTREMATA | 49 |
| Creodontia | 38 | INCERTÆ SEDIS | 49 |
| RODENTIA | 38 | ADDENDUM | 49 |
| Anomaluridæ and Sciuridæ | 38 | | |
| Haplodontidæ and Castoridæ | 39 | | |
| Ischyromyidæ and Gli-ridæ | 39 | | |

INTRODUCTION.

THE most important discovery of the year, so far as systematic work is concerned, is undoubtedly the relationship between Zeuglodonts and the Creodont Carnivora, as described by FRAAS on the evidence of Egyptian material. Next, perhaps, in importance is the reference by ANDREWS of *Arsinoëtherium* to a distinct group of Ungulates—the Barypoda. The rediscovery by GOELDI of the S. American Rodent *Dinomys* is also an event of first-rate importance; as is also the description by THOMAS of a new genus (*Hylochoerus*) of African Swine. BROOM's researches into the relationships between the jaws and limbs of Theriodont Reptiles and of Mammals are likewise of the highest importance; while it may be permissible also to allude to the Recorder's observations on the phylogeny of Arab and Thoroughbred Horses, based on the existence of vestiges of the lachrymal cavity in their skulls.

Important contributions to the morphology of the Monotremata have been made in the continuation of the memoirs on Semon's Reise; while ABEL's investigations on the skeleton of extinct Sirenians are likewise of great value. The continuation of SCOTT's work on Tertiary Patagonian Mammals also demands mention. Two investigators, CARLSSON and SWEET, have been independently working at the anatomy of *Notoryctes*.

MAX WEBER's "Säugethiere" is a most important text-book on the class; while, from another point of view, the work on British Mammals by MILLAIS, of which the first volume has appeared during the year, likewise demands special recognition. Another valuable faunistic work is ELLIOT's Mammals of Central America. It is satisfactory to welcome the appearance of the first instalments of a supplement to TROUESSART's "Catalogue"; while PALMER's "Index Generum Mammalian" is an absolutely invaluable work.

Ordinary descriptive work has progressed with the rapidity characteristic of recent years.

The Record is considerably larger than its immediate predecessors, despite the omission of a number of articles which did not appear to the Recorder to be of any scientific importance.

I. TITLES.*

1. ABEL, O. Die Sirenen der mediterranen Tertiärbildungen Österreichs. Abh. geol. Reichsanst. xix, pt. 2, pp. vi + 223, 7 pls. [*Sirenia*.]
2. ——. Ueber einen Fund von *Sivatherium giganteum* bei Adrianopel. Anz. Ak. Wiss. 1904, pp. 195 & 196, and SB. Ak. Wien cxiii, pp. 1–23, pl. [*Giraffidae*.]
3. ABY, F. S. Observations on the blood-capillaries in the cerebellar cortex of young Cats. J. Neurology ix, pp. 26–34, pl. ii (1899). [*Felidae*.]
4. AFLALO, F. G. and others. The Sportsman's Book for India. London, pp. 567, illustrated. [Contains chapters on Big Game.]
5. AGGOZOTTI, A. L'échange respiratoire des Cobayes dans l'air raréfié. Arch. ital. Biol. xli, pp. 402–417. [*Caviidae*.]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

6. ALESSANDRI, G. DE. Sopra alcuni avanzi di Cervidi pliocenici del Piemonte. Atti Acc. Torino xxxviii, pp. 845-858, 1 pl. 1903. [*Cervidæ*.]
7. ALEXANDER, G. Entwicklung und Bau des inneren Gehörorganes von *Echidna aculeata*; ein Beitrag zur Morphologie des Wirbelthierohres. Denk. Ges. Jena, Semon's Reise iii, Monotremata etc. ii, pp. 1-118, pls. i-xxiii. [*Monotremata*.]
8. ALEZAIS, —. Les adducteurs du Maki. C.R. Soc. Biol. lvi, pp. 537-539. [*Lemuroidea*.]
9. ALLEN, B. M. The embryonic development of the ovary and testis of the Mammals. Amer. J. Anat. iii, pp. 89-146, 7 pls.
10. ALLEN, G. M. Fauna of New England—*Mammalia*. Pap. Boston Soc. vii, 34 pp.
- 10A. —. The heredity of coat-colour in Mice. P. Amer. Ac. xl, pp. 61-163. [*Muridæ*.]
11. —. Observations on Rorquals off Newfoundland. Amer. Natural. xxxviii, pp. 613-623, figg. [*Cetacea*.]
12. ALLEN, J. A. New forms of the Mountain Goat (*Oreamnos*). Bull. Amer. Mus. xx, pp. 19-21. [*Bovidæ*.]
13. —. Mammals from S. Mexico and Central and S. America. T. c. pp. 29-80, figg. [*Chiroptera*, *Carnivora*, *Rodentia*.]
14. —. The external ear-bone in Rodents. T. c. pp. 135-138, fig. [*Rodentia*.]
15. —. Further notes on Mammals from N. W. Durango. T. c. pp. 205-210. [*Sciuridæ*.]
16. —. New Bats from Tropical America, with note on the species of *Otopterus*. T. c. pp. 227-237. [*Chiroptera*.]
17. —. Mammals collected in Alaska by the A. J. Stone expedition. T. c. pp. 273-292.
- 17A. —. A new Sheep from Kamchatka. T. c. pp. 293-298, figg. [*Bovidæ*.]
18. —. New Mammals from Venezuela and Colombia. T. c. pp. 327-335. [*Carnivora*, *Rodentia*, *Marsupialia*.]
19. —. Mammals from Venezuela. T. c. pp. 337-345.
20. —. A fossil Porcupine from Arizona. T. c. pp. 383 & 384. [*Erethizontidæ*.]
21. —. The Tamandua Anteaters. T. c. pp. 385-398, figg. [*Edentata*.]
22. —. Mammals from the district of Santa Marta, Colombia, with field-notes by Mr H. H. Smith. T. c. pp. 407-468. [*Primates*, *Mustelidæ*, *Erethizontidæ*.]
23. AMEGHINO, F. Recherches de Morphologie phylogénétique sur les molaires supérieures des Ongulés. An. Mus. Buenos Aires (3) iii, pp. 1-541, figg. [*Ungulata*.]

Some confusion appears to occur in the numbering of this serial; in separate reprints this memoir is said to form vol. ix of the original series, but the paper quoted in Zool. Rec. vol. xl, Mamm. No. 17, is also stated to be from vol. ix, or vol. ii of 3rd series.

24. [AMEGHINO, F.] La perforación astragaliana en los Mamíferos. Op. cit. iv, pp. 349-460, figg.
25. —. Paleontologia Argentina, No. 2. La Plata, 79 pp., figg.
- 25A. —. Nuevas especies de Mamíferos. Cretáceos y Terciarios de la República Argentina. Buenos Aires, 142 pp.; ex An. Soc. Argent. lvi, lvii, & lviii. [See Addenda.]
26. ANCEL, P. & BOUIN, P. Tractus génital et testicule chez le Porc cryptorchide. C.R. Soc. Biol. lvi, pp. 281 & 282. [*Suidæ*.]
— [See also BOUIN & ANCEL (71).]
27. ANDERSEN, K. Five new *Rhinolophi* from Africa. Ann. Nat. Hist. (7) xiv, pp. 378-388. [*Chiroptera*.]
28. —. On von Heuglin's, Rüppell's and Sundevall's types of African *Rhinolophi*. T. c. pp. 451-458. [*Chiroptera*.]
29. — & MATSCHIE, P. Uebersicht einiger geographischen Formen der Untergattung *Euryalus*. SB. Ges. naturf. Berlin 1904, pp. 71-83. [*Chiroptera*.]
30. ANDERSON, R. J. Some considerations respecting the parietal bone. Int. J. Anat. xxi, pp. 318-343, figg.
31. —. The premaxilla in *Primates*. C.R. xivth Congr. Internat. Med. 1903, 7 pp., figg. [*Primates*.]
32. —. Note on the skull of *Grampus griseus* found on the coast near Galway. Rep. Brit. Ass. 1903, pp. 691 & 692. [*Cetacea*.]
33. —. Note on the peritoneum in *Meles taxus*. T. c. p. 692. [*Mustelidæ*.]
34. —. The skull of *Ursus ornatus*. L. c. [*Ursidæ*.]
35. ANDREAE, A. Zur Kenntniss des Miocäns von Oppeln in Schlesien. Mitt. Mus. Hildesheim, No. 20; Säugethiere, pp. 18-22. [*Insectivora*.]
36. ANDREWS, C. W. Further notes on the Mammals of the Eocene of Egypt. Geol. Mag. (5) i, pp. 109-115, 157-162, and 211-215, pl. vi. [*Carnivora*, *Ungulata*, *Cetacea*.]
37. —. Note on the *Barypoda*, a new order of Mammals. T. c. pp. 481 & 482. [*Ungulata*.]
38. ANGLAIS, J. Les animaux domestiques—Cheval, Vache, Mouton, Porc, Chien, Coq et Oie. Paris, pp. 193.
39. ANON. Gorillas at the Zoological Gardens. Field civ, p. 459. [*Primates*.]
40. ANTHONY, —. Rôle morphogénique du muscle crotaphyte sur le crâne et le cerveau chez le Chien. Bull. Mus. Paris 1903, pp. 364 & 365. [*Canidæ*.]
41. ARCHIBALD, S. [Mrs]. On the damage done to fir-trees by Squirrels. Tr. Edinb. Field Soc. v, pp. 95 & 96. [*Sciuridæ*.]
42. ARMIN, S. A. O tavi denevér (*Myotis dasycneme*) Magyarországon. Allatt. Kozl. Magyar Tars. 1904, pp. 98-102, 4 pls.
43. AUERBACH, M. Ueber den Winterschlaf unserer heimischen Säugethiere. Verh. Ver. Karlsruhe xvi, pp. 16* & 17*.
44. BAKER, C. F. A revision of American *Siphonaptera*, or Fleas. P. U. S. Mus. xxvii, pp. 365-469. [Mentions the Mammals which the various species of these insects infest.]

45. BAKER, E. C. S. The Gaur and the Gayal. J. Bombay Soc. xv, pp. 227-284, figg. 1903. [*Bovidae*.]
46. BANGS, O. On a supposed continental specimen of *Solenodon*. P. Soc. Washington xvii, pp. 166 & 167. [*Insectivora*.]
47. BARNABÒ, V. Brevi considerazioni e ricerche sulla conformazione dello stomaco umano e di altri mammiferi a proposito di una rara anomalia in questo viscere nel *Lepus cuniculus*. Boll. Soc. zool. Ital. (2) v, pp. 227-240: [*Leporidae*.]
BARRETT-HAMILTON, G. E. H. [See HAMILTON, G. E. H. BARRETT (194-197).]
48. BARRINGTON, A. [Miss], LEE, A. [Miss], & PEARSON, K. On inheritance of coat-colour in the Greyhound. Biometrika iii, pp. 245-298. [*Canidae*.]
49. BARTELLS, P. Ueber die Lymphgefäße der Pankreas: 1. Ueber lymphatische Verbindungen zwischen Duodenum und Pankreas beim Hunde. Arch. Anat. 1904, pp. 299-329, pl. xx. [*Canidae*.]
50. BARTHOLD, —. Artunterschiede am Säugetierschädel. Zeitschr. Naturw. lxxvi, pp. 365-368.
51. BATE, D. M. A. [Miss]. Further note on remains of *Elephas cypriotes* from Cyprus. Phil. Trans. cxcvii, pp. 347-360, pls. xxi & xxii. [*Proboscidea*.]
52. BEARD, J. C. An animal new to science at the New York Zoological Park. Scientific American 1904, p. 287. [*Canidae*.]
53. BECCARI, O. Wanderings in the Great Forests of Borneo; Travels and Researches of a Naturalist in Sarawak. Translated by F. H. H. GUILLEMARD. London, pp. xxiv + 424, illustrated.
54. BEDDARD, F. E. Note on the brains of the Potto and Slow Loris, with observations on the arteries of the brain in *Primates*. P. Zool. Soc. London 1904, i, pp. 157-163, figg. [*Primates*.]
55. —. On the arteries of the base of the brain in certain Mammals. T. c. pp. 183-197, figg.
56. BEDFORD, E. A. The early history of the olfactory nerve in Swine. J. Neurology xiv, pp. 390-410, figg. [*Suidae*.]
57. BIELER, S. Sur un crâne d'Ours. Arch. Sci. Nat. (4) xvii, p. 445. [*Ursidae*.]
58. BLANCKENHORN, M. Oberpliocän mit *Mastodon arvernensis* auf Blatt Ostheim von der Rhon. Jahrb. geol. Landesanst. Berlin xxii, pp. 364-371, pl. viii. [*Proboscidea*.]
59. BLENDINGER, W. Das Cribrum der Säugethiere. Morphol. Jahrb. xxxii, pp. 452-478, pls. xi & xii. [See also FLEISCHMANN, A.]
60. BOCAGE, J. V. B. DU. Contribution à la faune des quatre îles du Golfe de Guinée. IV. Ile de St Thomé. J. Sci. Lisb. (2) vii, pp. 65-96.
61. BOENINGHAUS, G. Das Ohr des Braunfisches (*Phocena communis*). Zool. Jahrb. Anat. xix, pp. 189-360, pls. xii & xiii. [*Cetacea*.]
62. BÜSE, —. Ueber einige Muskelvarietäten, den Pectoralis major, Latissimus dorsi und Achselbogen betreffend. Morphol. Jahrb. xxxii, pp. 587-601, figg.
63. BOLTON, H. Abnormally marked Lion-cubs. P. Bristol Soc. (2) x, pp. 248 & 249. [*Felidae*.]
64. BONHOTE, J. L. On a new species of *Helictis*. Ann. Nat. Hist. (7) xiii, pp. 592-594, 1903. [*Mustelidae*.]

65. [BONHOTE, J. L.] On coloration in Mammals and Birds. J. Linn. Soc. xxix, pp. 185-187.
66. —. The Mammals of Cambridgeshire. In Marr and Shipley's "Natural History of Cambridgeshire," Cambridge, pp. 71-74.
67. BONNE, C. Recherches sur le développement des veines du foie chez le Lapin et le Mouton. J. Anat. Physiol. xl, pp. 225-267, pls. vi-viii. [*Leporidae*, *Bovidae*.]
68. BORTOLOTTI, C. Denti di Proboscidi, di Rinoceronte e di Ippopotamo dell' antica collezione Canali in Perugia. Riv. ital. Pal. x, pp. 83-93, pls. iv & v. [*Proboscidea*.]
69. BOSCHÁ, G. Informe sobre el estado del esqueleto de "Megaterio" del Museo de Madrid. Bol. Soc. espan. iii, pp. 211-226, 1903. [*Edentata*.]
70. BOTEZAT, E. Untersuchungen über die Hyperplasie an Rehgeweihen, mit Berücksichtigung der übrigen Cerviden. Arch. Entwicklmech. xviii, pp. 593-607, pl. xxxvi. [*Cervidae*.]
71. BOUIN, P. & ANCEL, P. Recherches sur la structure et la signification de la glande interstitielle dans le testicule du Cheval. Arch. Zool. exp. (4) ii, pp. cxli-clv. [*Perissodactyla*.]
— [See also ANCEL & BOUIN (26).]
72. BOUSSAC, P. H. Le Chacal dans l'Égypte Pharaonique. Naturaliste xxvi, pp. 245-248, figg. [*Canidae*.]
73. —. L'Hippopotame dans l'Égypte ancienne. Rev. Scient. (5) i, pp. 425-427. [*Hippopotamidae*.]
74. BRADLEY, O. C. The Mammalian cerebellum; its lobes and fissures. J. Anat. Physiol. norm. path. xxxviii, pp. 448-475, pls. xlv & xlv. II. The cerebellum in *Primates*. Ibid. xxxix, pp. 98-117, pls. xxiv-xxviii. [*Primates*.]
75. —. On the trapezium of the Horse. P. Phys. Soc. Edinb. xvi, pp. 8-18, figg. [*Perissodactyla*.]
76. BRAEUNIG, K. Ueber muskulöse Verbindungen zwischen Vorkammer und Kammer bei verschiedenen Wirbelthierherzen. Arch. Physiol. 1904, Suppl. pp. 1-19, pl. i.
77. BRANCA, A. Recherches sur le testicule et les voies spermatiques dans Lémuriens en captivité. J. Anat. Physiol. xl, pp. 35-72, pls. i & ii. [*Lemuroidea*.]
- 77A. BREMER, J. L. On the lung of the Opossum. Amer. J. Anat. iii, pp. 67-73, figg. [*Didelphyidae*.]
78. BRESSLAU, E. Zur Entwicklung des Beutels der Marsupialier. Verh. Deutsch. zool. Ges. 1904, pp. 212-224, figg. [*Marsupialia*.]
79. BROCK, A. J. P. VAN DER. On the genital cords of *Phalangista vulpina*. P. Ac. Amsterdam 1904, pp. 87-90, fig. [*Marsupialia*.]
80. BROOM, R. On the lower jaw of a Mammal from the Karoo beds of Aliwal North. Geol. Mag. (4) x, p. 345, figg. 1903. [See p. 49.]
81. —. On the structure of the Theriodont mandible and its mode of articulation with the skull. P. Zool. Soc. London 1904, i, pp. 490-498, pl. xxxv.
82. —. The origin of the Mammalian carpus and tarsus. Tr. S. African Phil. Soc. xv, pp. 85-95, pl. vii.

83. BRUMPT, — & WURTZ, —. Maladie du sommeil expérimentale chez les Sauris, Rats, Cobayes, Lapins, Marmottes et Hérissons. C.R. Soc. Biol. lvi, pp. 557-567.
84. ——. Maladie du sommeil expérimentale chez les Singes d'Asie et d'Afrique. T. c. pp. 557-567.
- 84A. ——. Maladie du sommeil expérimentale chez les Singes d'Amérique, les Makis de Madagascar, le Chien et le Porc. T. c. pp. 571-573.
85. BRUTON, F. A. Note on the eye of the Mole. Mem. Manchester Soc. xlviii, No. 20, 5 pp. [*Insectivora*.]
86. BURKE, W. S. The Indian Field Shikar Book. Calcutta. Pp. 331.
87. BUTLER, A. L. Geographical races of the Banting; the "Sapi" of the Malay Peninsula. J. Bombay Soc. xiii, pp. 192 & 193, pl., 1900. [*Bovidae*.]
88. BYLANDT, COUNT H. DE. Dogs of all nations. London, 2 vols. illustrated. [*Canidae*.]
89. CABRERA, A. Sobre el origen de las razas bovinas españolas. Bol. Soc. espan. 1904, pp. 71-78. [*Bovidae*.]
90. ——. Las especies españolas del género *Eliomys*. T. c. pp. 180-188, figg. [*Gliridae*.]
91. ——. Quirópteros de España. Mem. Soc. Espan. ii, pp. 250-285, pl. v. [*Chiroptera*.]
92. ——. Catálogo descriptivo de los Quirópteros Chilenos. Revist. chilena iv, pp. 278-308. [*Chiroptera*.]
93. CAMERON, J. On the presence and significance of the superior commissure throughout the Vertebrata. J. Anat. Physiol. norm. path. xxxviii, pp. 275-292, pls. xxv & xxvi.
94. CAPELLINI, G. Balenottera di Borbolya (Ungheria). Atti Acc. Lincei (4) xiii, pp. 667-669. [*Cetacea*.]
95. CARLSSON, A. Zur Anatomie des *Notoryctes typhlops*. Zool. Jahrb. Anat. xx, pp. 81-122, pls. vi & vii. [*Marsupialia*.]
96. CARRUCCIO, A. Note sovra un *Orycteropus* e due *Manis* non ha guari introdotti nel Museo Zoologico della R. Università di Roma. Boll. Soc. zool. Ital. (2) v, pp. 209-217. [*Effodientia*.]
97. CASE, E. C. The Miocene *Mammalia* of Maryland. Maryland Geol. Surv. Miocene. Palæontology, pp. 1-58, pls. i-xxvi. [*Cetacea* and *Sirenia*.]
98. CATOULLARD, G. Anomalie dentaire chez un Lapin domestique. Bull. Soc. Rouen xxxviii, pp. 317-319. [*Leporidae*.]
99. CHAINE, J. Sur le masséter des Rongeurs. Pr.-verb. Soc. Bordeaux 1897-8, pp. 161-166. [*Rodentia*.]
- 99A. ——. Anomalie musculaire chez le Cheval. Ibid. 1898-9, pp. 111 & 112. [*Perissodactyla*.]
100. ——. Connexions du mylo-hyoïdien et du génio-hyoïdien chez quelques Mammifères. Ibid. 1899-1900, pp. 72-74.
101. ——. Connexions du mylo-hyoïdien et du digastrique chez les Mammifères. T. c. pp. 75-78.
102. ——. Contribution à la myologie du Sanglier. Ibid. 1900-1901, pp. 15 & 16. [*Suidæ*.]

103. [CHAINED, J.] Sur le muscle mandibulo-auriculaire du Blaireau (*Meles taxus*). Ibid. 1901-1902, pp. 54 & 55.
104. —. Myologie de la région sous-hyoïdienne de la Girafe (*Camelopardalis giraffa*). Ibid. 1902-1903, pp. 9-11. [*Giraffidæ*.]
105. —. Note sur le stylo-hyoïdien de la Gazelle dorcas (*Gazella dorcas*). T. c. pp. 12 & 13. [*Bovidæ*.]
106. —. Sur le ligament tympano-maxillaire de la Genette (*Viverra genetia*). T. c. pp. 59 & 60. [*Viverridæ*.]
107. —. Connexions particulières du sterno-hyoïdien et du stylo-hyoïdien chez une Girafe (*Camelopardalis giraffa*). T. c. pp. 89 & 90. [*Giraffidæ*.]
108. CHAINED, J. & KUNSTLER, J. Remarques préliminaires sur le Chlamyphore tronqué (*Chlamyphorus truncatus*). Pr.-verb. Soc. Bordeaux 1902-1903, pp. 4-8. [*Edentata*.]
109. CHAPMAN, H. C. Observations on *Tupaia*, with reflections on the origin of the *Primates*. P. Ac. Philad. 1904, pp. 148-156. [*Primates*, *Insectivora*.]
- 109A. —. Observations on *Hyrax*. T. c. pp. 476-480, fig. [*Hyracoidea*.]
110. CLARKE, J. M. Distribution of *Mastodon* remains in New York. Bull. Geol. Soc. Amer. xiv, p. 537. [*Proboscidea*.]
111. CLARKE, W. E. On forms of *Mus musculus*, with description of a subspecies from the Færoe Islands. P. Phys. Soc. Edinb. xv, pp. 160-167. [*Muridæ*.]
112. COCKS, A. H. The gestation of the Badger. Zoologist (4) viii, pp. 108-114. [*Mustelidæ*.]
113. COLE, W. De Winton's Mouse in Essex. Essex Natural. xiii, pp. 294 & 295. [*Muridæ*.]
114. COPEMAN, S. M. & PARSONS, F. G. Observations on the sex of Mice. P. R. Soc. London lxxiii, pp. 32-48. [*Muridæ*.]
115. CORDOVEZ, M. Los restos del *Myiodon* i la gruta de su nombre en la Patagonia occidental. Act. Soc. Chili xii, 19 pp., 2 pls., 1903. [*Edentata*.]
116. COTTON, P. H. G. POWELL. In Unknown Africa; a narrative of twenty months' travel and sport in unknown lands and among new tribes. London, pp. xxiii+617, illustrated. [Contains list of the species of Mammals obtained.]
117. COUFFON, O. Étude sur les Faluns du Hagueneau. Bull. Soc. Angers xxxiii, pp. 35-85. [Certain fossil Mammals on pp. 76 & 77.]
118. CRAWSHAY, R. The prey of the Lion. P. Zool. Soc. London 1904, ii, p. 144. [*Felidæ*.]
119. CUÉNOT, L. Un paradoxe héréditaire [colour of eyes] chez les Souris. C.R. Soc. Biol. lvi, pp. 1050-1052. [*Muridæ*.]
- 119A. —. L'hérédité de la pigmentation chez les Souris. Arch. zool. exp. Notes (4) ii, pp. xlv-lv. [*Muridæ*.]
120. CUNNINGHAM, C. M. The teeth of Vertebrates, a lecture. Rep. Belfast Club v, pp. 51-53.
121. CUNNINGHAM, J. T. Incipient horns in Horses. Field ciii, p. 777. [*Perissodactyla*.]

122. CUTTER, W. D. & GILMAN, P. K. The survival of irritability in Mammalian nerves after removal from the body. *Amer. J. Physiol.* x, pp. xi & xii.
123. DAMANY, P. Contre l'homologie de l'olécrâne et de la rotule. *Trav. Univ. Rennes* ii, pp. 349-358, figg.
124. DAMIANI, G. Di un *Prodelphinus euphrosyne* all' Isola d' Elba e della distribuzione dei Denticeti minori nei mari d' Italia. *Atti Soc. Ligustica* xiv, pp. 165-176, 1903. [*Cetacea*.]
125. DARBISHIRE, A. D. On the result of crossing Japanese Waltzing with Albino Mice. *Biometrika* iii, pp. 1-51, figg. [*Muridæ*.]
126. DAVENPORT, C. B. Colour-inheritance in Mice. *Science* xix, pp. 110-114. [*Muridæ*.]
- 126A. —. Wonder Horses and Mendelism. *T. c.* pp. 151-153. [*Perissodactyla*.]
127. DAVID, J. Weitere Mittheilungen über das Okapi. *Globus* lxxxvi, pp. 385 & 386. [*Giraffidæ*.]
128. DAVIES, C. J. The coloration of Cattle. *Field* civ, p. 739. [*Bovidæ*.]
129. DAWKINS, W. B. Discovery of *Elephas antiquus* at Blackpool. *Mem. Manchester Soc.* xlviii, No. 17, 4 pp. [*Proboscidea*.]
130. DELHEID, E. Sur un Sirénien de l'argile de Bonn. *Ann. Soc. malac. Belgique* xxxviii, pp. xxv-xxviii, 1903. [*Sirenia*.]
131. DENKER, A. Die Eustachische Röhre des Ameisenfressers. *Zeitschr. Morphol.* viii, pp. 1-10, pls. i & ii. [*Edentata*.]
132. DÉPÉRET, C. & DOUXAMI, H. Les Vertébrés Oligocènes de Pyrimont-Chalanges (Savoie). *Abh. Schweiz. pal. Ges.* xxix, art. i, 91 pp., 6 pls., 1902. [*Rodentia*, *Perissodactyla*, *Marsupialia*.]
133. DEVEZ, J. Architecture du cœur des Marsupiaux. *Bull. Mus. Paris* 1903, pp. 227-231. [*Marsupialia*.]
134. —. La valvule auriculo-ventriculaire droite du cœur d'Ornithorhynche. *T. c.* pp. 231-233. [*Monotremata*.]
135. —. Recherches d'anatomie comparée sur le cœur des Vertébrés, en particulier des Monotrèmes et des Marsupiaux. *Bull. Soc. Philom.* v, pp. 105-275, pls. i-iv, 1903. [*Monotremata* & *Marsupialia*.]
136. DEXLER, H. Beiträge zur Kenntniss des feineren Baues des Zentralnervensystems der Ungulaten. *Morphol. Jahrb.* xxxii, pp. 288-389, figg.
137. DISSELHORST, R. Die männlichen Geschlechtsorgane der Monotremen und einiger Marsupialien. *Denk. Ges. Jena.*—Semon's Reise iii, *Monotremata* ii, pp. 121-150, pls. xxiv-xxx. [*Marsupialia* & *Monotremata*.]
138. DOEDERLEIN, L. Nachtrag zur diluvialen Säugethierfauna von Voklinshofen im Ober-Elsass. *Mitt. Comm. geol. Elsass-Loth.* ii, pp. 75-77 (1889).
139. — & SCHUMACHER, E. Ueber eine diluviale Säugethierfauna aus dem Ober-Elsass. *Ibid.* i, pp. 123-135 (1888).
DOUXAMI, H. [See DÉPÉRET & DOUXAMI (132).]
140. DRUMMOND-HAY, H. M. The black variety of *Felis chaus*. *Spolia Zeylan.* ii, pp. 93 & 94. [*Felidæ*.]

DRUMMOND, J. [See HUTTON & DRUMMOND (216).]

141. DRZEWINA, A. [Mlle]. Sur les mastzellen du ganglion lymphatique du *Didelphys lanigera*. Bull. Mus. Paris 1903, pp. 281 & 282. [*Marsupialia*.]
142. DUERST, J. U. Ueber ein neues, prähistorisches Hausschaf (*Ovis aries studeri*). Vierteljahrschr. Ges. Zurich xlix, pp. 17-34, pls. i & ii. [*Bovidae*.]
143. DWIGHT, T. A bony supracondyloid foramen in Man; with remarks on supracondyloid and other processes from the lower end of the humerus. Amer. J. Anat. iii, pp. 221-228, pl. i. [*Primates*.]
144. DYBOWSKI, B. Tables synoptiques pour déterminer les animaux du pays. *Insectivora*. Kosmos polski. xxviii, pp. 403-452, figg., 1903. [*Insectivora*.]
145. EASTMAN, C. R. Sharks' teeth and Cetacean bones from the red clay of the tropical Pacific. Mem. Mus. Harvard xxvi, pp. 163-226, pls. i-v, 1903. [*Cetacea*.]
146. EGGEING, H. Zur Morphologie der Augenlider der Säuger. Jena. Zeitschr. xxxix, pp. 1-42, figg.
147. —. Zur Morphologie des Manubrium sterni. Denk. Ges. Jena, Haeckel's Festschrift, pp. 59-114, pls. 6.
148. ELLIOT, D. G. Descriptions of new Mammals. Field Mus. Zool. iii, pp. 263-270. [*Chiroptera*, *Canidae*, *Rodentia*.]
149. —. Mammals collected in S. California. T. c. pp. 271-321, pls.
150. —. The land and sea Mammals of Middle America and the West Indies. Op. cit. iv, parts 1 & 2, illustrated.
151. EMMEL, V. E. The relation of the chorda tympani to the visceral arches in *Microtus*. J. Neurology xiv, pp. 411-417. [*Muridae*.]
152. *EVANS, G. H. Traité sur les Éléphants. Traduit de l'Anglais par J. Chaine. Paris, illustrated. [*Proboscidea*.]
153. EVANS, W. The Common Rorqual in the Firth of Forth. Ann. Scott. Nat. Hist. 1904, pp. 71-74, pls. ii & iii. [*Cetacea*.]
154. EWART, J. C. The Wild Horse (*Equus prjevalskii*). P. R. Soc. Edinb. xxiv, pp. 460-468, figg., 1903. [*Perissodactyla*.]
155. —. The multiple origin of Horses and Ponies. Tr. Highland Soc. 1904, pp. 1-39, figg., and Nature lxi, pp. 590-596. [*Perissodactyla*.]
156. FAVARO, G. Di un organo speciale della volta diencefalica in *Bos taurus*. Monit. Zool. ital. xv, pp. 111-120, figg. [*Bovidae*.]
157. —. Intorno ad un anomolo abozzo di diaphysis cerebri in *Ovis aries*. T. c. pp. 395 & 396. [*Bovidae*.]
158. FERREIRA, A. R. Sobre o Peixe Boy [*Manatus australis*] e do uso que lhe dão no estado do Grão Pará. Arch. Mus. Janeiro xii, pp. 169-174, 1903. [*Sirenia*.]
159. FISHER, O. *Elephas meridionalis* at Dewlish. Geol. Mag. (5) i, p. 621. [*Proboscidea*.]
160. FLEISCHMANN, A. Historisch-kritische Betrachtungen ueber das Cribrum der Säugethiere. Morphol. Jahrb. xxxii, pp. 479-504, fig. [See also BLENDINGER, W.]

161. FLORES, E. *Elephas primigenius* nell' Italia meridionale. Bull. Soc. geol. Ital. xxii, pp. 348-360, pl. xiii, 1903. [*Proboscidea*.]
162. FORREST, H. E. Mammals of Caradoc district. Rec. Caradoc Club 1903, pp. 26 & 27.
FORSYTH, MAJOR C. I. [See MAJOR, C. I. FORSYTH (296).]
163. FRAAS, E. Neue Zeuglodonten aus dem unteren Mitteleocän vom Mokattam, bei Cairo. Geol. Pal. Abhandl. (2) vi, pp. 199-220, pls. x-xii. [*Archæoceti*.]
164. FRASSETTO, F. Parietali tripartiti in crani umani e di scimmie. Monit. Zool. ital. xv, pp. 385-394, figg. [*Primates*.]
165. FRECH, F. & GEINITZ, E. Flora und Fauna des Quartärs. In Frech's Lethæa Geognostica iii, 2, pp. 7-41, figg. Stuttgart, 1903. [Contains an account of the distribution of Pleistocene Mammals.]
166. FREUND, L. Die Osteologie der Halicoreffosse. Zeitschr. wiss. Zool. lxxvii, pp. 363-397, pls. xiv & xv. [*Sirenia*.]
167. FÜRBRINGER, M. Zur Frage der Abstammung der Säugethiere. Denk. Ges. Jena, Haeckel's Festschrift, pp. 571-604.
168. FÜRST, C. M. Der Musculus popliteus und seine Sehne. Acta Univ. Lund. xxxix, pt. 2, art. 1, 134 pp., 9 pls.
FURLONG, E. L. [See SINCLAIR & FURLONG (428).]
169. GAILLARD, C. L'Okapi et Set-Typhon. Bull. Soc. Anthropol. Lyon xxii, pp. 1-11, fig., 1903. [*Giraffide*.]
170. GAUDRY, A. Fossiles de Patagonie ; Dentition de quelques Mammifères. Mem. Soc. geol. France, Pal. xiii, pt. 1, 27 pp., figg.
GEINITZ, E. [See FRECH & GEINITZ (165).]
171. GERHARDT, U. Morphologische und biologische Studien ueber die Kopulationsorgane der Säugethiere. Jena. Zeitschr. xxxix, pp. 43-117, figg.
172. GHIDINI, A. Due forme di terricola nel Ticino meridionale. Boll. Soc. Ticinese i, pp. 41 & 42. [*Muride*.]
- 172A. —. I Chiroterri Ticinesi, a proposito di una specie nuova per il Cantone (*Vesperugo leisleri* Kuhl). T. c. pp. 90-93. [*Chiroptera*.]
173. GIANNELLI, L. Contributo allo studio comparativo delle formazioni del tetto del cervello intermedio in embrioni di Rettili e di Mammiferi. Monit. Zool. ital. xv, pp. 325-332.
174. GIDLEY, J. W. Generic names of Miocene Horses. Bull. Amer. Mus. xx, pp. 191-194. [*Perissodactyla*.]
— [See also MATTHEW & GIDLEY (310).]
175. GILL, T. The name Mammal and the idea expressed. Rep. Smithson. Inst. 1903, pp. 538-544.
GILMAN, P. K. [See CUTTER & GILMAN (122).]
176. GOELDI, E. A. On the Rodent *Dinomys branickii*. P. Zool. Soc. London 1904, ii, pp. 158-165, pl. x. [*Dinomyidae*.]
177. — & HAGMANN, G. Catalogo da collecção de Mamíferos no Museu do Pará. Bol. Mus. Goeldi iv, pp. 38-122, pls.
178. GOLDMAN, E. A. Descriptions of new Mammals from Mexico. P. Soc. Washington xvii, pp. 79-82. [*Muride*.]

179. GORDON, W. J. Our Country's Animals; a guide to the Mammals, Reptiles, and Amphibians of Great Britain. London, 1904, pp. viii + 152, illustrated.
180. GRANDIDIER, G. Un nouveau Lémurien fossile de France, le *ProNycticebus gaudryi*. Bull. Mus. Paris 1904, pp. 9-18. [*Lemuroidea*.]
181. —. Note sur les Potamogales du Muséum du Paris. T. c. pp. 45-51. [*Insectivora*.]
182. GRANT, M. The origin and relationship of the large Mammals of North America. Rep. New York Zool. Soc. 1904, pp. 1-30.
183. GREVÉ, C. Die fossilen und recenten Edentaten und deren Verbreitung. SB. Ges. Dorpat xiii, pp. 77-107, 1902. [*Edentata*.]
184. —. Fossile und recente Wale des Russischen Reichsgebietes. CB. Ver. Riga xlvii, pp. 67-76. [*Cetacea*.]
185. GRIEG, J. A. Bidrag til kjendskaben om *Mesoplodon bidens*. Bergens Mus. Aarbog 1904, art. 3, pp. 1-39, figg. [*Cetacea*.]
186. GRINNELL, G. B. Big Game in its Haunts. London, pp. 497, illustrated.
187. GRÖNROOS, H. Die Musculi biceps brachii und latissimo-condyloideus bei der Affengattung *Hylobates* im Vergleich mit den entsprechenden Gebilden der Anthropoiden und des Menschen. Abh. Ak. Berlin 1903, i, 103 pp., 1 pl. [*Primates*.]
188. GROSZ, S. Ueber den Perinealsack von *Cavia cobaya* und seine Drüsen. Zeitschr. wiss. Zool. lxxviii, pp. 261-267, figg. [*Caviidae*.]
GUILLEMARD, F. H. H. [See BECCARI, O. (53).]
189. GULDBERG, G. Ueber die Wanderungen verschiedener Bartenwale. Pt. II. Biol. Centrbl. xxiv, pp. 371-384 and 391-396. [*Cetacea*.]
190. —. Die Waltiere des Königsspiegels. Zool. Ann. i, pp. 29-40. [*Cetacea*.]
191. GURRIERI, E. N. Osservazione su di uno scheletro di Cavicorne a quattro corna disseppelito sull' Apennino emiliano. Monit. Zool. ital. xv, pp. 287-296, figg. [*Bovidae*.]
192. GYÖRGY, A. Állati elet Ázsia sziveben. Termes. Kozl. Magyar Tars. 1904, pp. 735-752, figg.
193. GYULA, S. A Magyar földi Kutya (*Spalax hungaricus*) hallókészüléke. Allatt. Kozl. Magyar Tars. 1904, pp. 69-83, pl. viii. [*Spalacidae*.]
HAGMANN, G. [See GOELDI & HAGMANN (177).]
194. HAMILTON, G. E. H. BARRETT. Note on a Weasel from the Atlas Mountains and a Weasel in the Azores. Ann. Nat. Hist. (7) xiii, pp. 323-325. [*Mustelidae*.]
195. —. Notes on and descriptions of new *Mustelidae*. T. c. pp. 388-395. [*Mustelidae*.]
196. —. The Stoats (*Putorius ermineus*) of Jura and Islay. Ann. Scott. Nat. Hist. 1904, pp. 203-206. [*Mustelidae*.]
197. —. A physiological theory to explain the winter-whitening of Birds and Mammals. Rep. Brit. Ass. 1903, p. 698.
198. *HANBURY, D. T. Sport and travels in the Northland of Canada. London.
199. HANSEMANN, — VON. Ueber abnorme Rattenschädel. Arch. Physiol. 1904, pp. 376 & 377. [*Muridae*.]

200. HATAI, S. The finer structure of the neurones in the nervous system of the White Rat. Publ. Univ. Chicago x, pp. 179–190, pls. xiii & xiv, 1903. [*Muridæ*.]
201. —. Form and contents of the nucleus in the spinal ganglion cells of the foetal Rat. J. Neurology xiv, pp. 27–48, pls. iii & iv. [*Muridæ*.]
202. HAUTHAL, R. Die Bedeutung der Funde in der Grypotheriumhöhle bei Ultima Esperanza (Sudwestpatagonien). Ber. Senckenberg. Ges. 1904, pp. 89*–91*. [*Edentata*.]
203. HELLER, K. M. *Anuromeles* keine Säugetiergattung. Zool. Anz. xxvii, pp. 675 & 676. [*Marsupialia*.]
204. HEPBURN, D. & WATERSTON, D. A study of the grey and white matter of the motor-cell groups, and of the spinal accessory nerve, in the spinal chord of the Porpoise (*Phocæna communis*). Pt. II. J. Anat. Physiol. norm. path. xxxviii, pp. 295–311, pls. xxvii–xxxi. [*Cetacea*.]
205. — & —. The anatomy of the genito-urinary apparatus of the Porpoise. P. Phys. Soc. Edinb. xv, pp. 112–129, pl. ii. [*Cetacea*.]
206. HERZ, O. F. Frozen Mammoth in Siberia. Rep. Smithson. Inst. 1903, pp. 611–625, pls. i–ix. [*Proboscidea*.]
207. *HEWETT, G. M. A. The Rat. London (Animal Autobiographies). Illustrated. [*Muridæ*.]
208. HINTON, M. A. C. & KENNARD, A. S. Vertebrate and Molluscan remains from Cleve Hill. P. Cotteswold Club xv, pp. 58–67.
209. HOFFMANN, C. Zur Morphologie der Geweihe der recenten Hirsche. Cöthen, 1901, 72 pp., 22 pls. [*Cervidæ*.]
210. HOLST, N. O. Några subfossila Björnfynd. Sveriges geol. Unders. Afh. (C), No. 189, 33 pp., figg. [*Ursidæ*.]
211. HRDLÍČKA, A. Further instances of parietal division [in Mammals]. Amer. Natural. xxxviii, pp. 301–310, figg. [*Primates*.]
212. —. Further instances of malar division. T. c. pp. 361–366, figg. [*Primates*.]
213. *HUNTINGDON, D. W. Big Game [of N. America]. London, 1904, illustrated.
214. HUNTINGDON, G. S. The derivation and significance of certain supernumerary muscles of the pectoral region. J. Anat. Physiol. norm. path. xxxix, pp. 1–54, pls. i–xiv.
215. HUTTON, F. W. Index Faunæ Novæ Zealandiæ. Christchurch and London, pp. viii + 372.
216. — & DRUMMOND, J. The Animals of New Zealand. Christchurch and London, pp. xiv + 381, illustrated.
217. ITZERODT, I. Die Säugetiere der Umgegend von Hamburg. Verh. Ver. Hamburg Unterh. xii, pp. 91–100.
218. JAMIESON, E. B. The gluteal and femoral muscles, with their nerve-supply, in a Marmoset (*Hapale jacchus*). P. Phys. Soc. Edinb. xv, pp. 168–194. [*Primates*.]
219. JANENSCH, —. Bemerkungen über den Skeletbau der Glyptodonten. Zeitschr. Deutsch. geol. Ges. lvi, Protok. pp. 56–91, figg. [*Edentata*.]

220. JANKOWSKI, J. Beitrag zur Entstehung des Corpus luteum der Säugetiere. Arch. mikr. Anat. lxiv, pp. 361-388, pl. xxiii.
221. JENKINSON, J. W. The arrangement of the maternal and foetal glycogenic cells in the placenta of the Mouse. Brit. Med. J. 1904, ii, p. 1391. [*Muridae*.]
222. JENSEN, S. Mammals observed during Andrup's journey to East Greenland. Medd. Gronland xxxi, pp. 1-62, figg.
223. JENTINK, F. A. On *Kerivoula picta* and description of a new Bat from Paramaribo. Notes Leyden Mus. xxiv, pp. 174-176. [*Chiroptera*.]
224. KAFKA, J. Fossile und recente Raubtiere Böhmens (*Carnivora*) Arch. Landesdf. Bohmen. x, pt 6, 122 pp., figg. [*Carnivora*.]
225. KAMPEN, P. N. De Tympanaalstreek van den Zoogdierschedel. Amsterdam, 1904, 378 pp., figg.
KENNARD, A. S. [See HINTON & KENNARD (208).]
226. KANTOR, H. Geteilte Scheitelbeine bei *Macacus rhesus*. Zeitschr. Morphol. vii, pp. 543-545, fig. [*Primates*.]
227. KAROLY, P. A borbolyai Ösbálnáról. Termes. Kozl. Magyar Tars. 1904, pp. 277-283, figg. [*Cetacea*.]
228. KASTSCHENKO*, N. Outline of the fauna of Siberia and of the Tomsk district in particular. Tomsk, 1898, pp. 46 and map.
229. —. Results of the zoological expedition to the Altai, 1898. Tomsk (P. Tomsk Univ.) 1898, pp. 158, pls. 4. [*Rodentia*.]
230. —. Synopsis of the Mammals of the Tomsk district. Tomsk (P. Tomsk Univ.) 1900, pp. 47.
231. —. Mammals procured by the Altai expedition of P. G. Ignatow. Annuaire Mus. St Petersburg vii, pp. 289-304 (1902).
232. KELBEL, F. Zur Entwicklungsgeschichte des Urogenitalapparates von *Echidna aculeata* var. *typica*. Denk. Ges. Jena.—Semon's Reise iii, Monotremata ii, pp. 151-228, pls. xxxi-xxxv. [*Monotremata*.]
233. KIDD, W. On additions to the systematic characters of Mammals. P. Zool. Soc. London 1904, i, pp. 142-150, figg.
234. —. On the arrangement of the hair in *Æluropus*. T. c. p. 373. [*Procyonidae*.]
235. —. The direction of hair on the bodies of animals. Tr. W. Kent Soc. 1901-2, pp. 26-38.
236. —. The relation between muscular activity and beauty of form in animals. Op. cit. 1903-4, pp. 46-57.
237. KJELLBERG, K. Beiträge zur Entwicklungsgeschichte des Kiefergelenks. Morphol. Jahrb. xxxii, pp. 159-184, figg.
238. KNIES, J. Pravěké nalezy jeskynni Balcarovy skaly u Ostrova na vysočině Drakanske. Vestník. Klub Prostejové iii, pp. 31-72, 1901.
239. —. Zvířena stepní a její rozšíření za doby diluvialní na Moravě. Op. cit. v, pp. 95-110, 1903.
240. KNOTTNERUS-MEYER, T. Ueber Säugetierbastarde. Zool. Garten xlv, pp. 60-63.

* In the *Record* for 1901 this name is given as KASCENKE, and in 1902 as KASCENKO. The papers quoted are in Russian.

241. KRAEMER, H. Die Abstammung des Bernhardiners. Globus lxxxv, pp. 105–108, 119–122, 171–174, and 184–188, figg. [*Canidæ*.]
242. KRASUSKA, A. Kidney structure in Mammals [a paper in Russian]. Bull. Lab. St Petersburg. vii, pt. 2, pp. 20–58, 1 pl.
KUNSTLER, J. [See CHAINE & KUNSTLER (108).]
243. LANDOIS, H. Die Steinzeit-Menschen in Westfalen. Jahresb. Westfal. Ver. xxx, pp. 11–13, figg. [*Perissodactyla*.]
244. —. Das neolithische Pferd von Sünninghausen. T. c. p. 14. [*Perissodactyla*.]
245. —. Ein subfossiler Pferdeschädel. Op. cit. xxxi, pp. 158 & 159. [*Perissodactyla*.]
246. —. Ein fingerringförmiger Hasen-Schneidezahn, im Kreise vom linken Zwischenkiefer in den rechten hineingewachsen. Arch. Entwickmeh. xviii, pp. 265 & 266, fig. [*Leporidae*.]
247. —. Eine dritte Edelhirsch-Geweihstange über dem mit der Hinterhauptsschuppe verwachsenen Zwischenscheitelbein. T. c. pp. 289–295, figg. [*Cervidæ*.]
248. LANKESTER, E. R. A new Egyptian Mammal (*Arsinoëtherium*) from the Fayum. Geol. Mag. (4) x, pp. 529–532, pls. xxiii & xxiv, 1903. [*Barypoda*.]
249. LECHE, W. Ueber Zahnwechsel bei Säugetieren im erwachsenen Zustand. Zool. Anz. xxvii, pp. 219–222, figg. [*Insectivora*.]
250. —. Zoology of Sven Hedin's Journey,—Scientific Results of a Journey in Central Asia, 1899–1902, vol. vi, pt. 1, Zoologie 69 pp., 5 pls. Stockholm.
- LEE, A. [Miss]. [See BARRINGTON, etc. (48).]
251. LEDERMANN, H. Bericht über die wissenschaftlichen Leistungen in der Naturgeschichte der Säugethiere während des Jahres 1894. Arch. Naturg. 1896, ii, pp. 181–384 (1904).
252. LETACQ, A. L. Le Chat sauvage (*Felis sylvestris* Briss.) existait-il encore au xviii^e siècle dans la forêt du Perche? Bull. Soc. Rouen xxxix, pp. 139–144. [*Felidæ*.]
253. LEWIS, J. Observations upon the distribution and structure of hæmolymp glands in *Mammalia* and *Aves*, including a note on the thymus. J. Anat. Physiol. norm. path. xxxviii, pp. 312–327.
254. LOEB, J. On the segmental character of the respiratory centre in the medulla oblongata of Mammals. Univ. Calif. Publ. Phys. i, pp. 71–75.
255. LOISEL, G. Les poisons des glandes génitales; Recherches sur les Mammifères. C.R. Soc. Biol. lvii, pp. 77–82.
256. LORENZ, L. VON. Das Becken der Stellerschen Seekuh. Abh. geol. Reichsanst. xix, pt 3, 11 pp., 1 pl. [*Sirenia*.]
257. —. Das Becken der *Sirenia*. Verh. Ges. Wien 1904, pp. 142 & 143. [*Sirenia*.]
258. —. *Megaladapis edwardsi*. Anz. Ak. Wiss. 1904, pp. 257–260. [*Lemuroidea*.]
259. LUCAS, F. A. The armour of *Zeuglodon*. Science xix, pp. 436 & 437. [*Cetacea*.]

260. [LUCAS, F. A.] The swallowing of stones by Seals. *Op. cit.* xx, pp. 537 & 538. [*Pinnipedia.*]
261. LUCIFERO, A. Mammalia Calabria. *Riv. ital. Sci. Nat.* xxiv, pp. 21-25, 44-50, 97-105.
262. LULL, R. S. Cursorial adaptations in Mammals. *Amer. Natural.* xxxviii, pp. 1-11.
263. LYDEKKER, R. The ancestry of the Horse. *Knowledge* xxvii, pp. 16-19, figg. [*Perissodactyla.*]
264. —. The ancestry of the Camel. *Knowledge and Scient. News* i, pp. 25-28, figg. [*Camelidæ.*]
265. —. The ancestry of the *Carnivora*. *T. c.* pp. 61-64. [*Carnivora.*]
266. —. The later history of the Horse. *T. c.* pp. 171-175, illustrated. [*Equidæ.*]
267. —. The ancestry of the Horse. *J. Bombay Soc.* xv, pp. 703-705 (reprinted from the *Field* of Nov. 1903). [*Perissodactyla.*]
268. —. Notes on the specimens of Wild Asses in English collections. *Nov. Zool.* xi, pp. 583-596, pls. xvii-xx. [*Perissodactyla.*]
269. —. On two Dolphins from Madras. *J. Bombay Soc.* xv, pp. 408-414, pls. c and d. [*Cetacea.*]
270. —. The Elephant's family history. *Indian Field* v, p. 116. [*Proboscidea.*]
271. —. The Animals of Africa. *Quart. Rev.* No. 400, pp. 465-493, figg.
272. —. Some ancient animal portraits. *Nature* lxx, pp. 207-209, figg. [Identification of Mammals represented in Babylonian and Egyptian sculptures.]
273. —. Some valuable furs. *Ibid.* lxxii, pp. 115-117.
274. —. Vertebrate Palæontology of Cambridgeshire. In Marr and Shipley's "Natural History of Cambridgeshire," Cambridge, pp. 51-70.
275. —. The colour of Cattle. *Field* civ, p. 180. [*Bovidæ.*]
276. —. The Celtic Pony and the Tarpan. *T. c.* p. 276. [*Equidæ.*]
277. —. The coloration of the Lynxes. *T. c.* p. 576. [*Felidæ.*]
278. —. The Falkland Island Wolf. *T. c.* pp. 613 & 614. [*Canidæ.*]
279. —. The Great Assam Buffalo and the Uganda Ox. *T. c.* pp. 653 & 654. [*Bovidæ.*]
280. —. Large Muntjac antlers. *T. c.* p. 780. [*Cervidæ.*]
281. —. Hoof-structure in the Horse family. *T. c.* p. 819. [*Perissodactyla.*]
282. —. Asiatic Ocelots. *T. c.* p. 907. [*Felidæ.*]
283. —. The North Persian Wild Sheep. *T. c.* p. 1031. [*Bovidæ.*]
284. —. The ancestry of the Arab. *T. c.* p. 1073. [*Perissodactyla.*]
285. —. The Urial of the Punjab and Ladak. *T. c.* p. 1110. [*Bovidæ.*]
286. —. On the subspecies of *Giraffa camelopardalis*. *P. Zool. Soc. London* 1904, i, pp. 202-227, pls. ix-xvi. [*Giraffidæ.*]

287. [LYDEKKER, R.] Note on the skull and markings of the Quagga. T. c. pp. 426-430, figg. [*Equidæ*.]
288. —. Note on the Wild Ass of Mongolia. T. c. pp. 431-433, pls. xxvii & xxviii. [*Equidæ*.]
289. —. On a Buffalo skull from East Central Africa. Op. cit. ii, pp. 164-166, fig. [*Bovidæ*.]
290. —. The Ichang Tufted Deer. T. c. pp. 167-170, figg. [*Cervidæ*.]
291. LYON, M. W. Classification of the Hares and their allies. Smithson. Collect. xlv, pp. 321-447, pls. lxxiv-c. [*Leporidae* and *Ochotonidæ*.]
292. MACNAMARA, N. C. The craniology of Man and the Anthropoid Apes. Rep. Smithson. Inst. 1902, pp. 431-449, pls. i-vi. [*Primates*.]
293. MACWILLIAM, J. A. Some points in the physiology of the Mammalian heart. Brit. Med. J. 1904, ii, pp. 739 & 740, Lancet 1904, ii, p. 538.
294. MAGGI, L. Novità craniali degli Equidi. Rend. Ist. Lombardo (2) xxxvii, pp. 792-801, figg. [*Perissodactyla*.]
295. —. Prefrontali nei Mammiferi l' Uomo compreso. T. c. pp. 826-838, pl.
296. MAJOR, C. I. FORSYTH. On dental peculiarities of certain Mammals. P. Zool. Soc. London 1904, i, pp. 416-424, figg. [*Insectivora*, *Hystri-cidæ*, *Bovidæ*.]
297. —. On remains of *Anthracotheerium* from Majorca. T. c. pp. 456-458, pl. xxix. [*Anthracotheeriidæ*.]
298. —. Absence of *Lepus europæus* from British Pleistocene deposits. Geol. Mag. (3) i, p. 143. [*Leporidae*.]
299. MANSION, A. Les Soricides. Rev. Scient. (5) i, pp. 169-171. [*Muridæ*.]
300. MARIANI, M. Sopra alcuni avanzi di Mammiferi Quaternari trovati nell' alta Valle del Potenza. Bol. Soc. geol. Ital. xxiii, pp. 203-210.
301. MARSHALL, F. H. A. The œstrous cycle in the Ferret. Quart. J. Micr. Sci. xlviii, pp. 323-345, pls. 19-21. [*Mustelidæ*.]
- MARRO, G. [See MOSSO & MARRO (334).]
302. MAŠKA, K. J. Mastodonrest bei Telč in Mähren. Verh. geol. Reichsanst. 1904, p. 304. [*Proboscidea*.]
303. MATSCHIE, P. Bemerkungen über die Gattung *Gorilla*. SB. Ges. naturf. Berlin 1904, pp. 45-53. [*Primates*.]
304. —. Bemerkungen über die Schimpanzen. T. c. pp. 55-69. [*Primates*.]
305. —. Die zehnte deutsche Geweihausstellung zu Berlin 1904. Waidwerk in Wort und Bild 1904, pp. 169-200, figg. [*Artiodactyla*.]
306. MATSUOKA, M. Ueber Gewebsveränderungen der künstlich erzeugten Kyphose der Schwanzwirbelsäule des Kaninchens. Arch. Entwick-mech. xviii, pp. 253-260, pl. xv. [*Leporidae*.]
307. MATTHEW, W. D. The arboreal ancestry of the *Mammalia*. Amer. Natural. xxxviii, pp. 811-818.
308. —. A complete skeleton of *Merycodus*. Bull. Amer. Mus. xx, pp. 101-129, pl. iii, figg. [*Camelidæ*.]

309. [MATTHEW, W. D.] Two new Oligocene Camels. T. c. pp. 211–215. [*Camelidæ*.]
310. — & GIDLEY, J. W. Mammals from the Miocene of South Dakota. Bull. Amer. Mus. xx, pp. 241–268, figg. [*Carnivora*, *Rodentia*, *Artiodactyla*.]
311. MAURER, F. Das Integument eines Embryo von *Ursus arctos*; ein Beitrag zur Frage der Haare und Hautdrüsen bei Säugetieren. Denk. Ges. Jena, Haeckel's Festschrift, pp. 507–538, pl. xii. [*Ursidæ*.]
312. MEISENHEIMER, J. Der Gehörsinn der Wale. Naturw. Wochenschr. (2) iii, pp. 1016 & 1017. [*Cetacea*.]
313. MERRIAM, C. H. New Grasshopper-Mice, genus *Onychomys*. P. Soc. Washington xvii, pp. 123–126. [*Muridæ*.]
314. —. New Squirrels of the *aberti* group. T. c. pp. 129 & 130. [*Sciuridæ*.]
315. —. Jack Rabbits of the *Lepus campestris* group. T. c. pp. 131–134. [*Leporidæ*.]
316. —. Jack Rabbits of the *Lepus texianus* group. T. c. pp. 135–138. [*Leporidæ*.]
317. —. Kangaroo-Rats of the genus *Perodipus*. T. c. pp. 139–146. [*Heteromyidæ*.]
318. —. New Bears from N. America. T. c. pp. 153–156. [*Ursidæ*.]
319. —. A new Coyote from S. Mexico. T. c. pp. 157 & 158. [*Canidæ*.]
320. —. A new Sea-Otter from S. California. T. c. pp. 159 & 160. [*Mustelidæ*.]
321. MERTENS, A. Etwas vom Biber (*Castor fiber*). Zool. Garten xlv, pp. 57–60. [*Castoridæ*.]
322. MEYER, A. B. The antiquity of the Lion in Greece. Rep. Smithson. Inst. 1903, pp. 661–667, 1 pl. Translation. [*Felidæ*.]
323. MILLAIS, J. G. On a new Vole from the Orkney Islands. Zoologist (4) viii, pp. 241–246. [*Muridæ*.]
324. —. On the skin of the Grey Seal at various ages. P. Zool. Soc. London 1904, ii, pp. 374–379. [*Pinnipedia*.]
325. —. The Mammals of Great Britain and Ireland. Vol. 1. London (Longmans, Green & Co.) illustrated.
326. —. The Noctule Bat in Scotland. Field civ, p. 780.
327. MILLER, G. S. A new Pig from Sumatra. P. Soc. Washington xv, pp. 51 & 52, 1902. [*Suidæ*.]
328. —. Notes on Bats collected in Cuba. P. U. S. Mus. xxvii, pp. 337–348, pl. ix. [*Chiroptera*.]
329. MILLER, W. S. Three cases of a pancreatic bladder in the Cat. Amer. J. Anat. iii, pp. 269–274, figg. [*Felidæ*.]
330. MOFFAT, C. B. Bats, Hedgehogs, and Frogs in winter. Irish Natural. xiii, pp. 81–87. [*Chiroptera*, *Insectivora*.]
331. MONTGOMERY, T. H. A list of types of fossil Vertebrates in the Museum of the University of Texas. Biol. Bull, viii, pp. 56–58.
332. MOSO, A. Esperienze fatte sulle Scimmie colla depressione barometrica. Rend. Acc. Lincei xiii, pp. 201–211.

333. [Mosso, A.] Esperienze fatte sulle Scimmie a Torino e sulla vetta del Monte Rosa. T. c. pp. 212-215.
- 333A. —. Expériences faites sur les Singes avec la depression barométrique. Arch. ital. Biol. xli, pp. 384-401. [*Primates*.]
334. — & MARRO, G. La respiration des Chiens et la polypnée thermique sur le sommet du Monte Rosa. T. c. pp. 356-374. [*Canidae*.]
335. MOTT, F. W. The progressive evolution of the visual cortex in *Mammalia*. Lancet 1904, ii, pp. 1555-1560, figg.
336. MOURION, M. A propos du gisement du Mammouth de Murdegat près de Hasselt. Bull. Ac. Belgique 1904, pp. 1046-1049. [*Proboscidea*.]
- 336A. MUNTHE, H. Om Nya Däggdjursfyndi Sveriges Kvärtar. Sveriges geol. Unders. Afh. (C), No. 190, 27 pp., 27 figg. [*Phocidae*, *Cetacea*.]
337. NADAILLAC, M. Figures peintes ou incisées sur les parois des grottes préhistoriques. Rev. Quest. Sci. (3) vi, pp. 67-96, figg.
338. NEHRING, A. Neue Funde diluvialer Thierreste vom Seveckenberge bei Quedlinburg. SB. Ges. naturf. Berlin 1904, pp. 19 & 20.
339. —. Einige Beobachtungen über *Phocæna communis*, namentlich über die Wurfzeit. Zool. Anz. xxvii, pp. 713-715. [*Cetacea*.]
340. NELSON, E. W. New Rabbits from Mexico. P. Soc. Washington xvii, pp. 103-110. [*Leporidae*.]
341. —. New Squirrels from Mexico. T. c. pp. 147-150. [*Sciuridae*.]
342. NEWTON, R. B. Notes on fossils from the district surrounding the Dardanelles. Quart. J. Geol. Soc. lx, pp. 277-292, pl. xxiv. [*Anthracotheriidae*.]
343. NOC, F. Note sur la sécrétion venimeuse de l'*Ornithorhynchus paradoxus*. C.R. Soc. Biol. lvi, pp. 451 & 452. [*Monotremata*.]
344. NÜESCH, J. Neue Grabungen und Funde im Kesslerloch bei Thayngen, Kanton Schaffhausen. Denk. Schweiz. Ges. xxxix, pt. 2, pp. 1-72, pls. i-xxx. [*Equidae*.]
345. OLIVIER, O. Le Chimpanzé des Folies-Bergères. Rev. Sci. Bourbonnais xvii, pp. 46 & 47. [*Primates*.]
346. OSBORN, H. F. An Armadillo from the Middle (Bridger) Eocene of N. America. Bull. Amer. Mus. xx, pp. 163-165. [*Edentata*.]
347. —. New Oligocene Horses. T. c. pp. 167-179, pls. iv & v. [*Perissodactyla*.]
348. —. New Miocene Rhinoceroses, with revision of known species. T. c. pp. 307-326, figg. [*Perissodactyla*.]
349. —. Palæontological evidence for the tritubercular theory. Amer. J. Sci. (4) xvi, pp. 321-323, pl. xxi.
350. —. The evolution of the Horse in America. Century Mag. lxix, pp. 1-7, figg. [*Perissodactyla*.]
351. OSGOOD, W. H. *Haplomyiomys*, a new subgenus of *Peromyscus*. P. Soc. Washington xvii, pp. 53 & 54, fig. [*Muridae*.]
352. —. New Mice of the genus *Peromyscus* from Mexico and Guatemala. T. c. pp. 55-77. [*Muridae*.]
353. —. A biological reconnaissance of the base of the Alaska Peninsula. North Amer. Fauna, No. 24, 86 pp., pls. [*Muridae*.]

354. PACKARD, A. S. The two chief faunæ of the earth. *Science* (2) xix, pp. 220 & 221.
355. PALADINO, G. Sur la régénération du parenchyme et sur le type de structure de l'ovaire de la femelle du Dauphin. *Arch. ital. Biol.* xlii, pp. 95-99. [*Cetacea*.]
356. —. Sulla regenerazione del parenchima ovarico e sul tipo di struttura dell'ovaja di Delfino. *Rend. Acc. Napoli* (3) ix, pp. 289-297, 2 pls. [*Cetacea*.]
357. PALMER, J. S. *Index Generum Mammalium*. North Amer. Fauna, No. 23, pp. 983.
- PARSONS, F. G. [See COPEMAN & PARSONS (114).]
358. PAVLOW, M. [Madam]. *Mastodon angustidens* et *Mastodon longirostris* en Russie. *Ann. Geol. Min. Russ.* vi, pp. 123-139, pls. i & ii. [*Proboscidea*.]
- PEARSON, K. [See BARRINGTON, etc. (48).]
359. PEEL, C. A. V. The present status of the American Bison. *Field civ*, p. 907. [*Bovidae*.]
360. PETERSON, O. A. Osteology of *Oxydictylus*, a new genus of Camels from the Loup Fork group of Nebraska. *Ann. Carnegie Mus.* ii, pp. 434-476, pls. iv-xv. [*Camelidae*.]
361. PILGRIM, G. E. Pleistocene fossils from the Ganges alluvium. *Rec. Geol. Surv. India* xxxi, pp. 176 & 177.
362. PIRA, A. Ueber die Fledermäuse von São Paulo. *Zool. Anz.* xxviii, pp. 12-19, figg. [*Chiroptera*.]
363. POCHE, F. Richtigstellung einiger Gattungsnamen unter den Säugern. *Zool. Ann.* i, pp. 47-49. [*Edentata*, *Marsupialia*.]
364. POCKOCK, R. I. On a hybrid Waterbuck. *P. Zool. Soc. London* 1904, i, pp. 3 & 4, fig. [*Bovidae*.]
365. —. Description of a new spot-nosed Monkey of the genus *Cercoptes*. *T. c.* pp. 433-436, fig. [*Primates*.]
366. —. The Cape Colony Quaggas. *Ann. Nat. Hist.* (7) xiv, pp. 313-328, pls. ix & x. [*Equidae*.]
367. PONTIER, —. Contribution à l'étude de la dentition chez l'*Elephas primigenius*. *Naturaliste* xxvi, pp. 248 & 249. [*Proboscidea*.]
368. PORTIS, A. Un interessante fossile dei Peperini. *Bol. Soc. geol. Ital.* xxiii, pp. 171-177. [*Bovidae*.]
- POWELL-COTTON, P. H. G. [See COTTON, P. H. G. POWELL (116).]
369. PREBLE, A. E. Catalogue of the Mammals in the Barnum Museum of Tufts College. *Tufts Coll. Stud.* i, pp. 437-443.
370. RACOVITZA, E. G. A summary of general observations on the spouting and movements of Whales. *Rep. Smithson. Inst.* 1903, pp. 627-645. Translation. [*Cetacea*.]
371. RADCLIFFE, C. R. E. *Big Game Shooting in Alaska*. London, pp. xvi + 292, illustrated.
372. —. The natural history of Alaska. *P. Dorset Club* xxv, pp. 8-16, pls. 1-6.
373. RAWITZ, B. Beiträge zur mikroskopischen Anatomie der Cetaceen. *Int. J. Anat.* xxi, pp. 22-30, figg. [*Cetacea*.]

374. REHN, J. A. G. A study of the genus *Chilonycteris*. P. Ac. Philad. 1904, pp. 181-207. [*Chiroptera*.]
375. —. A study of the Bats of the genus *Dermonotus* (*Pteronotus*). T. c. pp. 250-256. [*Chiroptera*.]
376. —. A study of the genus *Macrotus*. T. c. pp. 427-446. [*Chiroptera*.]
377. REICHENAU, W. Ueber einen Unterkiefer von *Equus stenonis* Cocchi aus dem Plioplistocän von Mosbach. Notizbl. Ver. geol. Landesanst. Darmstadt (4) xxiv, pp. 48-54, figg., 1903. [*Perissodactyla*.]
378. —. Ueber eine neue fossile Bären-Art, *Ursus deningeri*, aus fluviatilen Sanden von Mosbach. Jahrb. nassau. Ver. lvii, pp. 1-16. [*Ursidae*.]
379. REJSEK, J. Anheftung (Implantation) des Säugethiereies an die Uterus-Wand insbesondere des Eies von *Spermophilus citillus*. Bull. Ceska Ak. (Med.) viii, pp. 37-49, 2 pls. [*Sciuridae*.]
380. RENSCHAW, G. Natural History Essays. London and Manchester pp. xiv+218, illustrated. [Essays on sixteen species of mammals, two of which are now extinct; see *Bovidae* and *Perissodactyla*.]
381. RETZER, R. Ueber die muskulöse Verbindung zwischen Vorhof und Ventrikel des Säugethierherzens. Arch. Anat. 1904, pp. 1-14, pls. i-iii.
382. RIDWOOD, W. G. On the skull of the Giraffe. P. Zool. Soc. London 1904, i, pp. 150-157. [*Giraffidae*.]
383. ROBINSON, A. Lectures on the early stages in the development of Mammalian ova, and on the formation of the placenta in different groups of Mammals. J. Anat. Physiol. norm. path. xxxviii, pp. 186-204, 325-340, 485-502, pls. xvii, xviii, xxxii, xxxiii, liv.
384. RODRIGUEZ, J. J. Preocupaciones y errores que, respecto á algunos animales, existen in Guatemala. An. Mus. Salvador i, pp. 458-473.
385. RÖMER, F. Die Anpassung der Wale an das Leben im Wasser. Ber. Senckenberg. Ges. 1904, pp. 77* & 78*. [*Cetacea*.]
- 385A. —. Die Haut der Säugethiere. T. c. pp. 91-110.
386. RÖRIG, A. Ueber den Nahrungsverbrauch einer Spitzmaus. Arb. gesundheit iv, pp. 121 & 122, pl. i. [*Soricidae*.]
387. ROGER, O. Wirbelthierreste aus dem Dinotheriensande der bayerisch-schwäbischen Hochebene. Ber. Ver. Augsburg xxxii, pp. 548-552, 1899.
388. —. Wirbelthierreste, etc. Pt. 2. Op. cit. xxxiii, pp. 1-46, pls. i-iii, 1900. [*Hystricidae*, *Cervidae*.]
389. —. Wirbelthierreste, etc. Pt. 3. Op. cit. xxxiv, pp. 55-70, pls. i-iii, 1901.
390. —. Wirbelthierreste aus dem Obermiocän, etc. Pt. 4. Op. cit. xxxv, pp. 1-27, pl. i, 1902. [*Perissodactyla*.]
391. —. Wirbelthierreste, etc. Pt. 5. Op. cit. xxxvi, pp. 1-21, pls. i-vi.
392. —. Ueber *Rhinoceros goldfussi* Kaup und die anderen gleichzeitigen Rhinocerosarten. Op. cit. xxxiv, pp. 1-52 pls. i & ii, 1901. [*Perissodactyla*.]

393. ROMERO, G. Sulle terminazioni nervose nei muscoli pelliccini dorsali della *Talpa europæa*. Boll. Soc. zool. Ital. (2) v, pp. 65-67. [*Insectivora*.]
394. ROSSI, U. Sulla struttura della ipofisi e sulla esistenza di una ghiandola infundibulare nei Mammiferi. Monit. Zool. ital. xv, pp. 9-17.
395. ROTHSCILD, W. Description of a new Antelope. P. Zool. Soc. London 1904, i, p. 229. [*Bovidae*.]
- ROUSSEAU, P. [See VASCHIDE & ROUSSEAU (477).]
396. ROUVIÈRE, H. Étude sur le développement du péricarde chez le Lapin. J. Anat. Physiol. xl, pp. 610-633, pls. xvii & xviii. [*Leporidae*.]
397. SACCHETTI, G. L'organo di Rosenmüller nella *Cavia cobaya*. Boll. Soc. Napoli xvii, pp. 225-227. [*Caviidae*.]
398. SALLE, E. Della *Balenoptera musculus arenata* nelle vicinanze di Livorno. Mem. Soc. Toscana xx, pp. 167-173. [*Cetacea*.]
399. SASAKI, C. A new Field-Mouse in Japan. Bull. Coll. Agric. Tokyo vi, pp. 51-55, pl. ix. [*Muridae*.]
400. SATUNIN, C. The Black Wild Cat of Transcaucasia. P. Zool. Soc. London 1904, ii, pp. 163 & 164. [*Felidae*.]
401. SCHACHT, H. Ende der Muflons (*Ovis tragelaphus*) im Teutoburger Wald. Zool. Garten xlv, pp. 276 & 277. [*Bovidae*.]
402. SCHILLINGS, C. G. Mit Blitzlicht und Büchse; neue Beobachtungen und Ergebnisse in der Wildniss inmitten der Tierwelt von Äquatorial-Ostafrika. Leipsic, 526 pp., illustrated.
403. SCHIÖTT, J. Musk-oxen in captivity. Rep. Smithson. Inst. 1903, pp. 601-609, figg. Translation. [*Bovidae*.]
404. SCHLOSSER, M. Die fossilen Cavicornia von Samos. Beitr. Pal. Oesterr.-Ung. xvii, pp. 21-118, pls. vii-xvi. [*Bovidae*.]
- 404A. —. Notizen über einige Säugethierfaunas aus dem Miocän von Württemberg und Bayern. N. Jahrb. Min. xix, Suppl. pp. 485-502, pl. xxvi. [*Canidae*, *Cervidae*.]
405. SCHNAUDIGEL, O. Die Schorgane der Wirbeltiere. Ber. Senckenberg. Ges. 1903, pp. 187-202.
406. SCHNEIDER, G. Ergebnisse zoologischer Forschungsreisen in Sumatra. Zool. Anz. xxvii, pp. 721-724. [Contains descriptions of *Hipposiderus* and a *Tupaia* by THOMAS, see *Chiroptera* and *Insectivora*.]
407. SCHOTTLER, W. Ein Mastodonrest von Nordlek am Vogelsberg. Notizbl. Ver. geol. Landesanst. Darmstadt (4) xxiii, pp. 26-30, pl. ii. [*Proboscidea*.]
- SCHUMACHER, E. [See DOEDERLEIN & SCHUMACHER (139).]
408. SCHUMANN, A. Das Skelett der Hinterextremität von *Dipus aegyptius*. Morphol. Jahrb. xxxii, pp. 233-287, pls. vii & viii. [*Jaculidae*.]
409. SCHUSTER, L. Die Säugetiere des Vogelsberges. Zool. Garten xlv, pp. 80-84.
410. SCHWALBE, G. Die Vorgeschichte des Menschen. Brunswick (F. Vieweg), 52 pp. and pl. [*Anthropoidea*.]

411. [SCHWALBE, G.] Ueber das Gehirnrelief des Schädels bei Säugetieren. Zeitschr. Morphol. vii, pp. 203-222, pls. i & ii.
412. —. Ueber die Stirnnaht bei den Primaten. T. c. pp. 502-523, figg. [*Primates*.]
413. —. Ueber die Stirnnaht bei den Affen. Verh. Ges. deutsch. Naturf. lxxv, pt. ii, pp. 214 & 215. [*Primates*.]
414. SCHWANN, H. On new forms of *Anomalurus* and *Sciurus* from tropical Africa. Ann. Nat. Hist. (7) xiii, pp. 70-73. [*Anomaluridæ*, *Sciuridæ*.]
415. —. On *Felis ocreata* and its subspecies. T. c. pp. 421-426. [*Felidæ*.]
— [See also THOMAS (467 & 467A).]
416. SCOTT, W. B. Mammalia of the Santa Cruz beds. 1. *Edentata*. 2. *Glyptodontia* and *Gravigrada*, pp. 107-221, pls. xvii-xxxv, 1903. 3. *Gravigrada*, pp. 222-364, pls. xxxvi-lxiii. Rep. Princeton Exped. v. [*Edentata*.]
417. SEGUENZA, L. Alcuni molari Elefantini fossili di Sicilia e di Calabria. Riv. ital. Pal. x, pp. 41-58, pl. iv. [*Proboscidea*.]
418. SERGI, S. Il solco di Rolando ed il lobo frontale nell' *Hylobates syndactylus*. Monit. Zool. ital. xv, pp. 273-283, figg. [*Primates*.]
419. SETON, E. T. The master ploughman of the west—a study of Pocket-Gophers. Century Mag. lxxviii, pp. 300-307, figg. [*Geomyidæ*.]
420. —. The speed of animals [Mammals]. Field civ, p. 1110.
421. SHEPPARD, T. Remains of the Lion in East Yorkshire. Naturalist 1904, pp. 102-104, fig. [*Felidæ*.]
422. —. Remains of the Bear in East Yorkshire. T. c. pp. 142 & 143, fig. [*Ursidæ*.]
423. —. Walrus remains in Holderness. T. c. p. 317. [*Pinnipedia*.]
424. SIM, G. White-beaked Dolphin (*Lagenorhynchus albirostris*) off Aberdeen. Zoologist (4) viii, p. 383. [*Cetacea*.]
425. SIMONIESCU, J. Ueber einige tertiäre Säugethierreste aus der Moldau (Rumänien). Verh. geol. Reichsanst. 1904, pp. 70-73.
426. *—. Sur quelques Mammifères fossiles trouvés dans les terrains tertiaires de la Moldavie. Ann. Univ. Jassy iii, pp. 21-25.
427. SINCLAIR, W. J. Exploration of Potter Creek Cave. Publ. Calif. Univ. Archæol. and Ethnol. ii, pp. 1-27, pls. i-xiv. [*Haplodontidæ*, *Bovidæ*.]
428. — & FURLONG, E. L. *Euceratherium*, a new Ungulate from the caves of California. Bull. geol. Univ. Calif. iii, pp. 411-418, pls. l & li. [*Bovidæ*.]
429. SMITH, E. G. The morphology of the occipital region of the cerebral hemisphere in Man and Apes. Anat. Anz. xxiv, pp. 436-451, figg. [*Primates*.]
430. —. Morphology of the retrocalcarine region of the cortex cerebri. P. R. Soc. London lxxiii, pp. 59-64. [*Primates*.]
431. —. Studies in the morphology of the human brain, with special reference to that of the Egyptians; the occipital region. Rec. Egypt. School Med. ii, pp. 125-173, pl. B. [*Primates*.]

432. "SNAFFLE". The Roedeer. London. 181 pp., illustrated. [*Cervidæ*.]
433. SORDELLI, F. Note su alcuni Vertebrati del Museo di Milano. Atti Mus. Milano xliii, pp. 305-316.
434. SOUTHWELL, T. On the Whale fishery from Scotland, with some account of the species hunted. Ann. Scott. Nat. Hist. 1904, pp. 77-90, pl. iv. [*Cetacea*.]
- 434A. —. Notes on the Seal and Whale fishery for 1903. Zoologist (4) viii, pp. 57-65. [*Pinnipedia*, *Cetacea*.]
- 434B. SPURGIN, A. M. Enamel in the teeth of an embryo Edentate (*Dasypus novemcinctus* Linn.). Amer. J. Anat. iii, pp. 75-84, 2 pls.
435. STACK, J. Ueber die Entstehung des Ersatzgebisses und der Backenzähne bei den Säugetieren. Bull. Ac. Cracovie 1904, pp. 283-299.
436. STANDING, H. F. Sur des ossements subfossiles provenant d'Ampasambazimba. Bull. Ac. Malgache ii, pp. 227-235, pls. i-xii, 1903. [*Lemuroidea*.]
437. STEHLIN, H. Die Säugethiere des schweizerischen Eocaens. Pt. 1. Abh. Schweiz. pal. Ges. xxx, art. 1, 153 pp., 3 pls. [*Perissodactyla*.]
438. STEJNEGER, L. Den celtiske pony, tarpanen og fjordhesten. Naturen 1904, pp. 161-168. [*Equidæ*.]
439. STERZEL, —. Diluviale Säugethierreste aus dem Mosbacher-Sande. Ber. Ges. Chemnitz xxv, p. liv.
440. STINGELIN, T. Ueber ein im Museum zu Olten aufgestelltes Kraniaum von *Elephas primigenius*. Abh. Schweiz. pal. Ges. xxix, art. 5, 9 pp., 1 pl., 1902. [*Proboscidea*.]
441. STONE, W. On Birds and Mammals from Mount Sanhedrin, California. P. Ac. Philad. 1904, pp. 576-585.
442. —. Notes on Californian Mammals. T. c. pp. 586-591. [*Chiroptera*.]
443. STRICHT, O. VAN DER. La structure de l'œuf des Mammifères. Arch. Biol. xxi, pp. 1-102, pls. ii & iii.
444. STUDER, T. Die Knochenreste aus der Höhle zum Kesslerloch bei Thayngen. Denk. Schweiz. Ges. xxxix, pt. 2, pp. 73-114, pls. i & ii. [*Equidæ*.]
445. SWEET, G. [Miss]. The anatomy of *Notoryctes typhlops*. Pts. 1 & 2. P. Soc. Victoria (2) xvii, pp. 76-103, pls. vi-ix. [*Marsupialia*.]
446. TAYLOR, W. The Whales and Dolphins of the Moray Firth. Tr. Inverness Soc. v, pp. 236-241, 1902. [*Cetacea*.]
447. THOMAS, O. On a collection of Mammals made in Arnhem-land, S. Australia. Nov. Zool. xi, pp. 222-229. [*Muridæ*, *Marsupialia*.]
448. —. On a new Rock-Wallaby from N.W. Australia. T. c. pp. 365 & 366. [*Marsupialia*.]
449. —. New species of *Pteropus*, *Mus*, and *Pogonomys* from the Australian region. T. c. pp. 597-606. [*Chiroptera*, *Muridæ*.]
450. —. New Bats from British E. Africa and the Cameroons. Ann. Nat. Hist. (7) xiii, pp. 206-210. [*Chiroptera*.]
451. —. New forms of *Saimiri*, etc., from the Neotropical region. T. c. pp. 250-255. [*Primates*, *Chiroptera*, *Octodontidæ*.]

452. [THOMAS, O.] A Bat from the United States representing *Myotis daubentonii*. T. c. pp. 382-384. [*Chiroptera*.]
453. —. Three new Bats. T. c. pp. 384-388. [*Chiroptera*.]
454. —. Mammals from Northern Angola. T. c. pp. 405-421. [*Chiroptera*, *Viverridæ*, *Rodentia*.]
455. —. New *Sciurus*, *Rhipidomys*, *Sylvilagus* and *Caluromys* from Venezuela. Op. cit. xiv, pp. 33-37. [*Rodentia*, *Marsupialia*.]
456. —. On Mammals obtained in Somaliland, with descriptions of allied species. T. c. pp. 94-105. [*Carnivora*, *Rodentia*.]
457. —. On Mammals collected in the Eastern Desert of Egypt. T. c. pp. 155-159. [*Chiroptera*, *Jaculidæ*.]
458. —. New *Callithrix*, *Midas*, *Felis*, *Rhipidomys* and *Proechimys* from Brazil and Ecuador. T. c. pp. 188-196. [*Primates*, *Felidæ*, *Rodentia*.]
459. —. New Bats and Rodents from W. Africa, the Malay Peninsula, and Papuasia. T. c. pp. 196-202. [*Chiroptera*, *Rodentia*.]
460. —. On Shrews from British E. Africa. T. c. pp. 236-241. [*Insectivora*.]
461. —. On Mammals from British New Guinea, with descriptions of species from the same region. T. c. pp. 397-403. [*Muridæ*, *Marsupialia*.]
462. —. On a new Gazelle. P. Zool. Soc. London 1904, i, pp. 4 & 5, fig. [*Bovidæ*.]
463. —. On a Fruit-Bat and a Buffalo. T. c. pp. 371 & 372. [*Chiroptera*, *Bovidæ*.]
464. —. On a new subspecies of Hartebeest. T. c. pp. 455 & 456. [*Bovidæ*.]
465. —. On the osteology and systematic position of the Malagasy Bat *Myzopoda aurita*. Op. cit. ii, pp. 2-6, pl. i. [*Chiroptera*.]
466. —. The Forest Pig of Central Africa. Nature lxx, p. 577. [*Suidæ*.]
467. — & SCHWANN, H. On Mammals from British Namaqualand. P. Zool. Soc. London 1904, i, pp. 171-183, pl. vi. [*Viverridæ*, *Rodentia*.]
- 467A. — & —. On Mammals collected during the Uganda Boundary Commission. T. c. pp. 459-465, fig. [*Mustelidæ*, *Muridæ*, *Hyracoideæ*, *Bovidæ*.]
468. TOIT, P. J. DU. South African Jackals. S. African Agricult. J. 1904, pp. 569-572, pl. [*Canidæ*.]
469. TREGARTHEN, J. C. Wild Life at the Land's End; observations of the habits of the fox, badger, otter, seal, hare, and of their pursuers in Cornwall. London, pp. xii + 236, illustrated.
470. TRENDLENBURG, W. Ueber das Vorkommen von Sehpurpur im Fledermausauge, nebst Bemerkungen über den Zusammenhang zwischen Sehpurpur und Netzhautstäbchen. Arch. Physiol. 1904, Suppl. pp. 228-240. [*Chiroptera*.]
471. TROUESSART, E. L. Catalogus Mammalium, Quinquennale Suppl. Pts. 1 & 2, Berlin. [*Primates*, *Chiroptera*, *Insectivora*, *Carnivora*, *Pinnipedia*, and *Rodentia*.]

472. TRUE, F. W. The Whalebone Whales of the Western North Atlantic compared with those occurring in European waters, with observations on the species of the North Pacific. *Smithson. Contr.* 4to, vii, 333 pp., 50 pls. [*Cetacea.*]
473. —. Notes on a Killer Whale (*Orcinus*) from Maine. *P. U. S. Mus.* xxvii, pp. 227–230, pls. vii & viii. [*Cetacea.*]
474. —. Note on three Beaked Whales from the N. Pacific. *Science* (2) xx, pp. 888 & 889. [*Cetacea.*]
475. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg. *Verh. Ver. Hamburg naturw.* (3) xi, pp. 1–5.
476. VALLENTIN, R. Notes on the Falkland Islands. *Mem. Manchester Soc.* xlviii, No. xxiii, 48 pp., 3 pls. [*Canidae.*]
477. VASCHIDE, N. & ROUSSEAU, P. L'association des idées chez les Singes. *Rev. Scient.* (5) i, pp. 583–589 & 617–620. [*Primates.*]
478. VERRILL, A. E. Additions to the fauna of the Bermudas. *Tr. Connect. Ac.* xi, Mammals, p. 59, fig., 1903.
479. VÖLKER, O. Ueber die Entwicklung des Diaphragmas beim Ziesel (*Spermophilus citillus*). *Bull. Ceska Ak. (Med.)* vii, pp. 26–46, pls. i & ii, 1903. [*Sciuridae.*]
480. —. Ueber die Histogenese Corporis lutei bei dem Ziesel. *Op. cit.* viii, pp. 17–36, 2 pls. [*Sciuridae.*]
481. VOLZ, W. Zur Kenntniss der Suiden Sumatras. *Zool. Jahrb. Syst.* xx, pp. 509–540, pl. xviii. [*Suidae.*]
482. —. Ueber die Verbreitung einiger anthropoider Affen in Sumatra. *Biol. Centrbl.* xxiv, pp. 475 & 476. [*Primates.*]
483. WAITE, E. B. Description of a new *Phascologale* from N.W. Australia. *Rec. Austral. Mus.* v, pp. 122–124. [*Marsupialia.*]
484. —. The genus *Dromicia* in New South Wales. *T. c.* p. 134. [*Marsupialia.*]
485. WALKOFF, O. Studien über Entwicklung und Schädelbau der *Primates*, in E. Selenka's Studien über Entwicklungsgeschichte. Pt. 9, Der Unterkiefer; Pt. 10, Keimesgeschichte; Pt. 11, Die Diluvialen Menschlichen Kiefer Belgiens, etc. Pt. 12, Primaten Placenten (1903). [*Primates.*]
486. WALLACE, T. D. The Wild Boar in Britain. *Tr. Inverness Soc.* v, pp. 296–305. [*Suidae.*]
WATERSTON, D. [See HEPBURN & WATERSTON (204 & 205).]
487. WEBER, M. Die Säugetiere; Einführung in die Anatomie und Systematik der recenten und fossilen Mammalia. Jena, 1904, pp. xii+866, illustrated.
488. WEBER, M. Ueber Tertiäre Rhinocerotiden von der Insel Samos. *Bull. Soc. Moscou* 1903, pp. 477–501, pls. xiv–xvi. [*Perissodactyla.*]
489. WEIGNER, K. Experimenteller Beitrag zur Frage vom centralen Verlaufe des Nervus cochlearis beim *Spermophilus citillus*. *Bull. Ceska Ak. (Med.)* vii, pp. 65–74, figg., 1903. [*Sciuridae.*]
490. —. Ueber die dorsale Wurzel des Nervus hypoglossus mit Ganglion bei *Bos taurus*. *Op. cit.* viii, pp. 1–7, figg. [*Bovidae.*]
491. —. Přespevek k centrálnímu průběhu nervi cochlearis u *Spermophilus citillus*. *Rosp. Ceske Ak. Praze* xii, art. 12. [*Sciuridae.*]

492. WEMER, P. Die Nahrung unseres Eichhörnchens. Jahresber. Westfal. Ver. xxxi, pp. 217-221. [*Sciuridæ*.]
493. WHIPPLE, I. L. The ventral surface of the Mammalian chirodium. Zeitschr. Morphol. vii, pp. 261-368, pls. v & vi.
494. WHITNEY, C. (and others). Musk-Ox, Bison, Sheep, and Goat (American Sportsman's Library). New York and London, pp. 284, illustrated. [*Bovidæ*.]
495. WIEDEMANN, A. Das ägyptische Set-Tier. Orient. Litter.-Zeitung. 1902, pp. 222 & 223. [*Giraffidæ*.]
496. WILDER, B. C. The brain of the Sheep, being part iv of Physiology Practicums. 3rd ed. Ithaca, 70 pp., 7 pls. [*Bovidæ*.]
497. WILLEY, A. Crows and Flying Foxes at Barbeyrn. Spolia Zeylan. ii, pp. 50 & 51. [*Chiroptera*.]
498. WINGE, H. Om jordfundne Pattedyr fra Danmark. Vid. Medd. 1904, pp. 193-304, pls. vii-xiii.
499. WOLDRICH, J. N. & J. Diluviale Fauna von Zuzlavitz. Arch. Landesdf. Bohmen xii, No. 4, pp. 108-113.
500. WOODWARD, A. S. The ancestry of the Elephants. Knowledge and Scient. News i, pp. 11-13, figg. [*Proboscidea*.]
501. WORTMAN, J. L. Studies of Eocene Mammalia in the Marsh Collection, Peabody Museum (cont.). Amer. J. Sci. (4) xvii, pp. 23-33, 133-140, 203-214, figg. [*Lemuroidea*.]
- WURTZ, —. [See BRUMPT & WURTZ (83-85).]
502. ZIMMERMANN, E. Ein neuer Fund diluvialer Knochen bei Pössneck in Thüringen. Jahrb. geol. Landesanst. Berlin xxii, pp. 302-315.
503. ZUCKERKANDL, E. Zur Morphologie des Affengehirnes. Zeitschr. Morphol. vii, pp. 223-260, pls. iv, viii, pp. 100-121, pl. v. [*Primates*.]
- [For additional titles see Addenda, p. 51.]

II. GENERAL BIOLOGY (INCL. ANATOMY).

[+ prefixed to a paragraph indicates that it relates, in part or altogether, to extinct forms: when the sign is placed before a specific name it indicates that the species referred to is extinct.]

GENERAL AND COMPARATIVE ANATOMY.

A. GENERAL.

WEBER (487).

Orycteropus and *Manis*; CARRUCIO (96).

Notoryctes; CARLSSON (95), SWEET (445).

Histology of *Cetacea*; RAWITZ (373).

B. TEGUMENTARY SYSTEM.

Hair-arrangement; KIDD (233-335).

Integument and hair-development in *Ursus*; MAURER (311), BACKMUND (Addenda).

Skin; RÖMER (385A).

Surface of the palm (papillary ridges, etc.); WHIPPLE (493).

C. NERVOUS SYSTEM; SENSE ORGANS.

- Brain; BEDDARD (55): *Primates*; BEDDARD (54), SMITH (430), ZUCKERKANDL (503): Ox; FAVARO (156): Sheep; WILDER (496), FAVARO (157): *dura mater*; DENNSTEDT (Addenda).
 Cerebellum; BRADLEY (74): Cerebellar capillaries; ABY (3).
 Superior Commissure; CAMERON (93).
 Medulla oblongata, respiratory centre; LOEB (254).
 Hypophysis cerebri; ROSSI (394).
 Sulcus of Rolando; SERGI (418).
 Nerve terminations in *Talpa*; ROMERO (393).
 Cochlear nerve of *Spermophilus*; WEIGNER (489 & 491).
 Spinal chord: histology of; DEXLER (136): of *Phocæna*; HEPBURN & WATERSTON (204).
 Neurones of *Mus*; HATAI (200).
 Hypoglossal nerve of *Bos*; WEIGNER (490).
 Olfactory; BEDFORD (56), BLENDINGER (59), FLEISCHMANN (160).
 Ear: in *Phocæna*; BOENINGHAUS (61): *Rodentia*; ALLEN (14): *Mono-tremata*; ALEXANDER (7).
 Eustachian tube of *Myrmecophaga*; DENKER (131).
 Hearing in Whales; MEISENHEIMER (312).
 Eye; BRUTON (86), MOTT (335), SCHNAUDIGEL (405), TRENDLENBURG (470).
 Nose; GLAS (Addenda).
 Eyelid; EGGELING (146).
 Chorda tympani and visceral arches; EMMEL (151).
 Nerve irritability, CUTTER & GILMAN (122).
 Non-medullated nerve; ALCOCK (Addenda).
 Ganglia; HATAI (201), VALEDINSKY (Addenda).

D. MYOLOGY.

- Supernumerary pectorals; HUNTINGDON (214): pectoralis major, etc., variation in; BÖSE (62): gluteo-femoral of *Hapale*; JAMIESON (218): popliteal; FÜRST (168): crotophite of *Canis*; ANTHONY (40): adductors of *Lemur*; ALEZAIS (8): biceps brachii of *Hylobates*; GRÖNROOS (187): muscles of hyoid apparatus, etc.; CHAINE (98-107): of *Chlamydomorphus*; CHAINE & KUNSTLER (108): of heart; BRAEUNIG (76), RETZER (381).

E. OSTEOLOGY.

- Cranial abnormalities; FRASSETTO (164), HRDLÍČKA (212 & 212a).
 Astragalar perforation; AMEGHINO (24).
 Development of mandibular articulation; KJELLBERG (237): mandibular articulation and carpus and tarsus of Theriodonts and Mammals; BROOM (81 & 82).
 Craniology of *Primates*; MACNAMARA (292); WALKOFF (485): premaxilla of *Primates*; ANDERSON (31).
 Brain-impression in skull; SCHWALBE (411).
 Specific characters in skull; BARTHOLD (50).
 Prefrontal; MAGGI (295): Parietal; ANDERSON (30).
 Manubrium sterni; EGGELING (146).
 Ulna and fibula not homologous; DAMANY (123).
 Cotyloid cavity; DAMANY (Addenda).
Macacus, divided frontal; KANTOR (226).
Megaladapis; LORENZ (258).
 Entepicondylar foramen in human humerus; DWIGHT (143).
 Zeuglodonts and Creodonts; FRAAS (163).
 External ear of Rodents; ALLEN (14).
 Limbs of *Dipus*; SCHUMANN (408).

Equus, trapezium ; BRADLEY (75).
Giraffa, skull ; RIDWOOD (382).
Merycodus ; MATTHEW (308).
Ursus ; ANDERSON (34), BIELER (57) ; HOLST (212).
Sirenia ; ABEL (1).
 Pelvis of *Sirenia* ; LORENZ (257).
 Limbs of *Halicore* ; FREUND (166).
Megatherium ; BOSCA (69).
Glyptodon ; JANENSCH (219).
Grampus, skull ; ANDERSON (32).
 Caudal vertebræ of *Lepus* ; MATSUOKA (306).

F. ALIMENTARY SYSTEM.

a. *Dentition*.

Tooth-change in adult ; LECHE (249).
 Abnormalities ; MAJOR (296), CATOULLARD (97), LANDOIS (243).
Sirenia ; ABEL (1).
 Trituberculum ; OSBORN (349).
 S. American Tertiary Mammals ; GAUDRY (170).
 Phylogeny of Ungulate Molars ; AMEGHINO (23).
 General ; CUNNINGHAM (120), STACK (435).

b. *General*.

Perineal sac of *Cavia* ; GROSZ (188).
 Stomach ; BARNABO (47) : Lymphatics ; DRZEWINA (141), SABIN (Addenda).
 Pancreas of *Canis* ; BARTELS (49).
 Liver, development of veins ; BONNE (67).
 Pancreatic bladder in *Felis* ; MILLER (329).
 Salivary glands ; ILLING (Addenda).
 Cæcum ; MAGNUS (Addenda).

G. CIRCULATORY AND RESPIRATORY SYSTEMS.

Heart ; BRAEUNIG (76), DEVEZ (133 & 134), RETZER (381), MACWILLIAM (293) : Pericardium, development ; ROUVIÈRE (396).
 Veins of liver ; BONNE (67).
 Capillaries of cerebellum ; ABY (3).
 Hæmo-lymph glands ; LEWIS (253).
 Arteries ; MÜLLER (Addenda).
 Lung ; BREMER (77A).

H. URINO-GENITAL ORGANS.

Copulatory organs ; GERHARDT (171) : *Phocæna* ; HEPBURN & WATERSTON (205) : *Sus* ; ANCEL & BOUIN (26) : *Equus* ; BOUIN & ANCEL (71) : *Monotremata* and *Marsupialia* ; DISSELHORST (137), KELBEL (232) : Genital cords of *Phalanger* ; BROCK (79) : Kidneys ; KRASUSKA (242) : Poison of genital glands ; LOISEL (255) : Testicle of *Equus* ; BOUIN & ANCEL (71) : of Lemuroids ; BRANCA (77) : Organ of Rosenmüller in *Cavia* ; SACCHETTI (397) : Prostate ; MÜLLER (Addenda).

I. DEVELOPMENT, incl. EMBRYOLOGY.

Ovum and placenta ; JENKINSON (221), ROBINSON (383).
 Ovum ; STRICHT (443) : Ovum and testis ; ALLEN (9).
 Ovary and regeneration ; PALADINO (355 & 356).
 Implantation of ovum ; REJSEK (379).
 Corpus luteum ; JANKOWSKI (220), VÖLKER (480).

- Oestrous cycle ; MARSHALL (301).
 Foetal appendages ; SCHWALBE (410).
 Placenta of *Primates* ; WALKOFF (485).
 Breeding-season of *Phocæna* ; NEHRING (339).
 Gestation of *Meles* ; COCKS (112).
 Of urino-genital organs of *Echidna* ; KELBEL (232).
 Of olfactory nerve ; BEDFORD (56).
 Of hepatic veins ; BONNE (67).
 Of pericardium ; ROUVIÈRE (396).
 Of teeth ; LECHE (249), COTOUILLARD (97), MAJOR (296).
 Of tympanum ; KAMPEN (225).
 Of mandibular articulation ; KJELLBERG (237).
 Of marsupium ; BRESSLAU (78).
 Of diaphragm ; VÖLKER (479).

K. VARIATION, AND VARIOUS NOTES.

- Habits and environment of Okapi ; DAVID (127).
 Habits of Rats ; HEWETT (209).
 Habits of Bats and Hedgehogs in winter ; MOFFATT (330).
 Habits of *Geomys* ; SETON (419).
 Habits of British Carnivora, etc. ; TREGARTHEN (462).
 Habits and extinction of various species ; RENSHAW (380).
 Habits of Whales ; RACOWITZA (370).
 Habits of Roe ; "SNAFFLE" (432).
 Coloration ; BONHOTE (65).
 Coloration of Lynxes ; LYDEKKER (277).
 Coloration of Cattle ; DAVIES (128), LYDEKKER (275).
 Colour-heredity in Greyhound ; BARRINGTON, LEE & PEARSON (48).
 Colour-heredity in Mice ; ALLEN (10), DARBYSHIRE (123) ; DAVENPORT (125), CUÉNOT (119A).
 Colour-heredity in eyes of Mice ; CUÉNOT (119).
 Winter whitening of hair ; HAMILTON (197).
 Abnormally coloured lion-cubs ; BOLTON (63).
 Heredity in colour ; ALLEN (10A), BARRINGTON, LEE & PEARSON (48), DARBYSHIRE (124), DAVENPORT (126), CUÉNOT (119).
 Heredity in intelligence ; DAVENPORT (126).
 Cursorial adaptation ; LULL (262).
 Artificial hibernation ; BRUMPT & WURZ (83).
 Hibernation ; AUERBACH (43).
 Sex of Mice ; COPEMAN & PARSONS (114).
 Food of Lion ; CRAWSHAY (117) : of Shrew ; RÖRIG (386) : of Squirrel ; WEMER (492).
 Hoof-structure in *Equidæ* ; LYDEKKER (281).
 Hybrids ; DARBYSHIRE (124), KNOTTNERUS-MEYER (240), POCOCC (364).
 Rudimentary horns in Horse ; CUNNINGHAM (120).
 Abnormalities in muscles ; BÖSE (62), CHAINE (99).
 Abnormalities in skull ; FRASSETTO (164), HRDLÍČKA (211 & 212), HANSEMAN (199).
 Abnormalities in teeth ; CATOUILLARD (98), LANDOIS (246), MAJOR (296).
 Abnormalities in antlers ; BOTEZAT (70), LANDOIS (247).
 Abnormalities in viscera ; BARNABÒ (47).
 Abnormalities in human humerus ; DWIGHT (143).
 Abnormalities in frontal of *Macacus* ; KANTOR (226).
 Inconstancy of trapezium in *Equus* ; BRADLEY (75).
 Presence of pancreatic bladder ; MILLER (329).
 Arboreal ancestry of Mammals ; MATTHEW (307).

- Ancestry of Mammals ; FÜRBRINGER (167).
 Relation of Theriodonts to Mammals ; BROOM (81 & 82).
 Phylogeny of *Primates* ; CHAPMAN (109), MACNAMARA (Addenda).
 Phylogeny of *Carnivora* ; LYDEKKER (265).
 Phylogeny of *Camelidae* ; LYDEKKER (264).
 Phylogeny of *Equidae* ; LYDEKKER (263).
 Phylogeny of *Proboscidea* ; WOODWARD (500).
 Phylogeny of *Sirenia* ; ABEL (1).
 Ancestry of Horse ; LYDEKKER (266 & 267), OSBORN (350).
 Ancestry of Arabs and Thoroughbreds ; LYDEKKER (284).
 Adaptation to aquatic life in *Cetacea* ; RÖMER (385).
 Speed ; SETON (420).
 Effects of barometric pressure ; AGGOZOTTI (5), MOSSO (332-333A),
 MOSSO & MARRO (334).
 Antler exhibition ; MATSCHIE (305).
 Seals swallowing stones ; LUCAS (260).
 Damage by Squirrels ; ARCHIBALD (41).
 Prehistoric portraits of Mammals ; NADAILLAC (337).
 Ancient representations and mummies ; LYDEKKER (272), BOUSSAC (72),
 SCHLOSSER (Addenda).
 Okapi in Egyptian frescoes ; GAILLARD (169), WIEDEMANN (495).
 Fur-trade ; LYDEKKER (273).
 Sealing and Whaling ; SOUTHWELL (434), TRUE (472).
 Mental powers of Apes ; OLIVIER (345), VASCHIDE (477).
 Poison of *Ornithorhynchus* ; NOC (343).
 Poison of genital gland ; LOISEL (255).
 Immunity to poison ; WILSON (Addenda).
 Record ; LEDERMANN (251).
 Text-book ; WEBER (487).
 Catalogues ; ELIOTT (150) ; PALMER (357), PREBLE (369), TROUESSART
 (471).
 Domesticated Mammals ; ANGLAIS (38) ; BYLANDT (88), CABRERA (89),
 LYDEKKER (276, etc.), OSBORN (350).
 Types ; MONTGOMERY (331).

GEOGRAPHICAL DISTRIBUTION.

General ; PACKARD (354).

1. EASTERN HOLARCTIC.

- British Isles ; GORDON (179), MILLAIS (325), FORREST, Salop (162), BON-
 HOTE, Cambridgeshire (66), TAYLOR, Cetacea (446).
 Spain (Bats) ; CABRERA (91).
 Germany ; IDZERODT (217), ULMER (475).
 Silesia ; ANDREAE (35).
 Bohemia ; KAFKA (224).
 Italy ; LUCIFERO (261), GHIDINI (172).
 Central Asia ; GYÖRGY (192).
 Poland ; DYBOWSKI (144).
 Balkans ; KNIES (238).
 Siberia ; KASTSCHENKO (228).

2. AFRICA and MADAGASCAR.

- General ; LYDEKKER (271).
 East Central ; POWELL-COTTON (116), SCHILLINGS (402).
 Gulf of Guinea ; BOCAGE (60).
 Angola, Somaliland, and Egypt ; THOMAS (454, 456 & 457).
 Namaqualand and Uganda ; THOMAS & SCHWANN (467 & 467A).

3. S.E. ASIA and ASIATIC ARCHIPELAGO.

India; AFLALO (4), BURKE (86).

Sumatra; SCHNEIDER (406).

Borneo; BECCARI (53).

4. NORTH AMERICA.

Big Game; GRINNELL (186), HUNTINGDON (214), WHITNEY (494).

Origin of fauna; GRANT (182).

Alaska; OSGOOD (353), ALLEN (17), ELLIOT (148), RADCLYFFE, big game (371).

Canada; HANBURY, big game (198).

Newfoundland; ALLEN, porquills (11).

New England; ALLEN (10).

Greenland; JENSEN (222).

California; STONE (441 & 442).

Mexico; GOLDMAN (178).

Whales of Atlantic coast; TRUE (472).

5. CENTRAL AND SOUTH AMERICA.

ALLEN (14-16), ELLIOT (150), THOMAS (445, etc.).

Chili, CABRERA (92).

São Paulo; PIRA (362).

Para; GOELDI & HAGMANN (177).

Guatemala; RODRIGUEZ (384).

Bermudas; VERRILL (478).

Falkland Islands; VALLENTIN (476).

6. AUSTRALASIA.

Australia; THOMAS (447 & 449).

New Guinea; THOMAS (461).

New Zealand; HUTTON (216 & 217).

†*Fossil Faunas.*

Pleistocene; FRECH & GEINITZ (165).

British Islands; (Cambridgeshire), LYDEKKER (274), HINTON & KENNARD (210).

Denmark; WINGE (498).

Sweden; MUNTHE (336A).

Italy; ALESSANDRI (6), MARIANI (300).

Savoy; DEPÉRET & DOUXAMI (132).

Alsace; DOEDERLEIN (138), DOEDERLEIN & SCHUMACHER (139).

Switzerland; STEHLIN (437), STUDER (444), NUESCH (344).

France; COUFFON (117).

Germany; NEHRING (338), STERZEL (439), ULMER (475).

Bavaria and Württemberg; ROGER (387), SCHLOSSER (404A).

Bohemia; KAFKA (224), WOLDRICH (499).

Thuringia; ZIMMERMANN (502).

Moravia; KNIES (239).

Rumania; SIMONIESCU (425).

Moldavia; SIMONIESCU (426).

Samos; SCHLOSSER (404).

- Egypt; ANDREWS (36).
 Madagascar; STANDING (436).
 India; PILGRIM (361).
 N. America; MATTHEW & GIDLEY (310), OSBORN (348), SINCLAIR (427),
 WORTMAN (501): Maryland (*Cetacea*); CASE (97).
 S. America; AMEGHINO (23-25A), GAUDRY (170), SCOTT (416).

III. SYSTEMATIC.

Supplement to Catalogue; TROUESSART (471).
 Genera of Mammals; PALMER (357).

I. PRIMATES.

Phylogeny, CHAPMAN, P. Ac. Philad. 1904, p. 148; cerebral arteries, BEDDARD, P. Zool. Soc. London 1904, i, p. 157; division of parietal bone, HRDLÍČKA, Amer. Natural. xxxviii, p. 301; division of malar, HRDLÍČKA, t. c. p. 361; premaxilla, ANDERSON, C.R. xivth Congr. Internat. Med. 1903, 7 pp.; mental powers of Apes, VASCHIDE & ROUSSEAU, Rev. Scient. (5) i, p. 583; foetal appendages, SCHWALBE, Zeitschr. Morphol. vii, p. 502, and Verh. Ges. deutsch. Naturf. lxxv, pt. ii, p. 214; brain, ZUCKERKANDL, Zeitschr. Morphol. vii, p. 223, viii, p. 100; cerebellum, BRADLEY, J. Anat. Physiol. norm. path. xxxviii, p. 448 and xxxix, p. 98; craniology, placenta, etc., WALKOFF (485); Man and Apes, MACNAMARA (Addenda).

ANTHROPOIDEA.

- Effects of diminished atmospheric pressure on, MOSO, Rend. Acc. Lincei xiii, pp. 201 & 212, and Arch. ital. Biol. xli, p. 384; brain, SMITH, Anat. Anz. xxiv, p. 436, P. R. Soc. London lxxiii, p. 59, and Rec. Egypt. School Med. ii, p. 125; ancestral Man and Apes, SCHWALBE (410); entepicondylar foramen in human humerus, DWIGHT, Amer. J. Anat. iii, p. 221.
 Craniology of Anthropoids, MACNAMARA, Rep. Smithson. Inst. 1902, p. 431; tripartite parietal, FRASSETTO, Monit. Zool. ital. xv, p. 385.
Gorilla castaneiceps Slack, 1862, stands for *G. mayema* Alix & Bouvier, p. 50, *diehli*, N. Cameruns, p. 52, **n. sp.**, MATSCHIE, SB. Ges. naturf. Berlin 1904; gorillas in London Zool. Gardens, ANON, Field civ, p. 459.
Anthropopithecus troglodytes, death of specimen "Consul," OLIVIER, Rev. Sci. Bourbonnais xvii, p. 46.
Simia replaces *Anthropopithecus*, the different species of the genus, MATSCHIE, SB. Ges. naturf. Berlin 1904, p. 55.
Siamanga syndactylus and *Hylobates agilis*, distribution in Sumatra, VOLZ, Biol. Centrbl. xxiv, p. 475; sulcus of Rolando in *syndactylus*, SERGI, Monit. Zool. ital. xv, p. 273.
Hylobates, biceps brachii, GRÖNROOS, Abh. Ak. Berlin 1903, i, p. 1.
Macacus rhesus, divided frontal, KANTOR, Zeitschr. Morphol. vii, p. 543.
Cercopithecus sclateri, Benin, W. Africa, Pocock, P. Zool. Soc. London 1904, i, p. 433, **n. sp.**
Pogonocetus, **n. nom.** for *Diadema* Reich. 1863, nec Schum, 1817, TROUESSART, Cat. Mamm. Suppl., p. 14.
Leptocebus, **n. nom.** for *Semnocebus* Gray, 1870, nec Lesson, 1840, TROUESSART, t. c. p. 15. [Antedated by *Lophocebus*, PALMER, 1903.]
Maimon, **n. nom.** for *Mormon* Lesson, 1840, nec Illiger, 1811, TROUESSART, Cat. Mamm. Suppl., p. 21.

- Alouatta seniculus rubicunda*, p. 460, *s. caucensis*, p. 462, Colombia, ALLEN, Bull. Amer. Mus. xx, n. subspp.
Saimiri cerstedii citrinellus, Costa Rica, THOMAS, Ann. Nat. Hist. (7) xiii, p. 250, n. subsp.
Tamarinus, **n. subg.** for *Midas labiatus* Geoffr., TROUESSART, Cat. Mamm. Suppl., p. 29.
Callithrix penicillata jordani, Minas Geraes, THOMAS, Ann. Nat. Hist. (7) xiv, p. 189, n. subsp.
Midas goeldii, Amazons, p. 189, *apiculatus*, Ecuador, p. 190, THOMAS, t. c., **n. spp.**
Hapale jacchus, myology, JAMIESON, P. Phys. Soc. Edinb. xv, p. 168.

LEMUROIDEA.

- North American Tertiary forms, WORTMAN, Amer. J. Sci. (4) xvii, pp. 23, 133, and 203; testicle and spermatic ducts, BRANCA, J. Anat. Physiol. xl, p. 35.
Perodicticus and *Nycticebus*, brain, BEDDARD, P. Zool. Soc. London 1904, i, p. 157.
Lemur, adductor muscles, ALEZAIS, C.R. Soc. Biol. lvi, p. 537.
†*Pronycticebus*, **n. g.** for *P. gaudryi*, Tertiary, France, **n. sp.**, GRANDIDIER, Bull. Mus. Paris 1904, p. 9.
†*Megaladapis edwardsi*, osteology, LORENZ, Anz. Ak. Wiss. 1904, p. 257, *grandidieri*, superficial, Madagascar, STANDING, Bull. Ac. Malgache ii, p. 229, **n. sp.**
†*Palaeopropithecus maximus*, *raybaudii*, Madagascar, STANDING, t. c. p. 231, **n. spp.**

II. CHIROPTERA.

- Bats of Chili, Revist. chilena iv, p. 278, of Spain, Mem. Soc. Espan. ii, p. 250, CABRERA, of Cuba, MILLER, P. U. S. Mus. xxvii, p. 337, of São Paulo, PIRA, Zool. Anz. xxvii, p. 12, of Switzerland, GHIDINI, Bol. Soc. Ticinese i, p. 90; hibernation, MOFFAT, Irish Natural. xiii, p. 81; visual purple in eye, TRENDLENBURG, Arch. Physiol. 1904, Suppl. p. 228.
Pteropus medius, habits in Ceylon, WILLEY, Spolia Zeylan. ii, p. 50; *solomonis*, Solomon Group, THOMAS, Nov. Zool. xi, p. 597, **n. sp.**
Nyctymene (= *Cephalotes*) *robinsoni*, Queensland, p. 196, *major tullulæ*, Woodlark Is., New Guinea, p. 197, THOMAS, Ann. Nat. Hist. (7) xiv, **n. sp.** & subsp.
Scotonycteris bedfordi, Fernando Po, THOMAS, P. Zool. Soc. London 1904, i, p. 372, **n. sp.**
Rhinolophus phasma, p. 252, *carpetanus*, p. 254, *ferrum-equinum obscurus*, p. 257, Spain, CABRERA, Mem. Soc. Espan. ii; *denti*, Bechuanaland, xiii, p. 386, *andersoni*, Egyptian Desert, *dobsoni*, Kordofan, xiv, p. 156, THOMAS, Ann. Nat. Hist. (7); *empusa*, Nyasaland, p. 378, *augur*, Bechuanaland, p. 380, *a. zuluensis*, Zululand, *a. zambesiensis*, Zambesia, p. 383, *simulator*, Mashonaland, p. 384, ANDERSEN, t. c., **n. spp.** & subspp.; synonymy of African species, ANDERSEN, t. c. p. 451.
Euryalus, **n. subg.** for *Rhinolophus euryale* Blasius, 1853, MATSCHIE, SB. Ges. naturf. Berlin 1901, p. 227, *É. toscanus*, Mti. Pisani, *atlanticus*, Indre-et-Loire, p. 77, *cabrerae*, Madrid, p. 78, *barbarus*, Tangier, *meridionalis*, Algeria, p. 79, *judaicus*, Jerusalem, p. 80, ANDERSEN & MATSCHIE, ibid. 1904, **n. spp.**
Hipposiderus commersoni mostellum, B. E. Africa, Ann. Nat. Hist. (7) xiii, p. 385, *schneideri*, Sumatra, Zool. Anz. xxvii, p. 721, THOMAS, n. subsp. & **sp.**

- Vespertilio serotinus insularis*, p. 263, *boscai*, p. 265, *ochromixtus*, p. 267, Spain, CABRERA, Mem. Soc. Espan. ii, n. subsp. & spp.
- Vesperus melanopterus*, Paramaribo, W. Indies, JENTINK, Notes Leyden Mus. xxiv, p. 176, n. sp.
- Eptesicus fuscus melanopterus*, Mt Tallac, California, STONE, P. Ac. Philad. 1904, p. 590, n. subsp.
- Pipistrellus noctula* in Scotland, MILLAIS, Field civ, p. 780; *pipistrellus mediterraneus*, Spain, CABRERA, Mem. Soc. Espan. ii, p. 273, *hesperus apus*, Mexico, ELLIOT, Field Mus. Zool. iii, p. 269; *crassulus*, Cameroons, xiii, p. 206, *raptor*, Tonkin, p. 386, *ariel*, Egyptian Desert, xiv, p. 157, *nanulus*, Cameroons, p. 198, THOMAS, Ann. Nat. Hist. (7); n. spp. & subsp.
- Scotophilus nigrita colias*, B. E. Africa, p. 207, n. nux, Cameroons, p. 208, THOMAS, Ann. Nat. Hist. (7) xiii, n. subsp.
- Myotis escaleraei*, Spain, CABRERA, Mem. Soc. Espan. ii, p. 279; *chiriquensis*, Panama, ALLEN, Bull. Amer. Mus. xx, p. 77; *hildegardæ*, B. E. Africa, p. 209, *carissima*, Yellowstone, p. 383, *bocagei cupreolus*, Angola, p. 407, THOMAS, Ann. Nat. Hist. (7) xiii; n. spp. & subsp.: *dasygneme* in Hungary, ARMIN, Allatt. Kozl. Magyar Tars. 1904, p. 98.
- Kerivoula bicolor*, Jalor, Malay Peninsula, THOMAS, Ann. Nat. Hist. (7) xiv, p. 199, n. sp.; *picta*, from Sumatra, JENTINK, Notes Leyden Mus. xxiv, p. 174.
- Myzopoda aurita*, the type of a family to which may be allied *Mystacops*, THOMAS, P. Zool. Soc. London 1904, ii, p. 2.
- Mystacops tuberculatus*, impending, if not actual, extermination, HUTTON & DRUMMOND, "Animals of New Zealand," p. 32.
- Emballonura nigrescens solomonis*, New Britain and Solomon Ids., THOMAS, Ann. Nat. Hist. (7) xiv, p. 200, n. subsp.
- Saccopteryx bilineata centralis*, Mexico, THOMAS, Ann. Nat. Hist. (7) xiii, p. 251, n. subsp.
- Balantiopteryx io*, Guatemala, THOMAS, t. c., p. 522, n. sp.
- Molossus coibensis*, Coiba I. Panama, p. 227, *bondæ*, Bonda, Colombia, p. 228, ALLEN, Bull. Amer. Mus. xx, n. spp.
- Promops barbatus*, La Union, Venezuela, ALLEN, l. c., n. sp.
- Nyctinomus hindei*, B. E. Africa, THOMAS, Ann. Nat. Hist. (7) xiii, p. 210, n. sp.
- Chilonycteris macleayi inflata*, Porto Rico, p. 190, n. subsp.; key to the species, p. 181, REHN, P. Ac. Philad. 1904.
- Dermonotus suapurensis*, Suapure, Venezuela, ALLEN, Bull. Amer. Mus. xx, p. 229, n. sp.; key to the species, REHN, P. Ac. Philad. 1904, p. 250.
- Otopterus mexicanus* and *bocourtianus*, note on, ALLEN, Bull. Amer. Mus. xx, p. 235. *Macrotes* (= *Otopterus*), key to the species, p. 429, *M. waterhousei jamaicensis*, Jamaica, p. 432, *w. compressus*, Bahamas, p. 434, *pygmaeus*, Yucatan, p. 444, n. sp. & subsp., REHN, P. Ac. Philad. 1904.
- Phyllostomus hastatus panamensis*, Chiriqui, p. 233, *h. cauræ*, Caura Valley, Colombia, p. 234, ALLEN, Bull. Amer. Mus. xx, n. subsp.
- Lonchophylla thomasi*, Ciudad Bolivar, Venezuela, ALLEN, t. c. p. 230, n. sp.
- Artibeus rusbyi*, Yungas, Peru, p. 230, *insularis*, St Kitts, W. Indies, p. 231, *yucatanicus*, Chichenitza, Yucatan, p. 232, ALLEN, t. c. n. spp.

III. INSECTIVORA.

- Hibernation, MOFFAT, Irish Natural. xiii, p. 81; of Poland, DYBOWSKI, Kosmos polski. xxviii, p. 403.
- For alleged Patagonian extinct representative of *Galeopithecidae*, see Addenda.

- Tupaia*, cæcum, etc., CHAPMAN, P. Ac. Philad. 1904, p. 148; *ferruginea demissa*, Sumatra, THOMAS, Zool. Anz. xxvii, p. 723, n. subsp.
- +*Cordylodon schlosseri*, Miocene, Silesia, ANDRÆ, Mitt. Mus. Hildesheim, No. 20, p. 20, **n. sp.**
- Sorex* (+) *meyeri*, n. nom. for *pusillus* Meyer, nec Gmelin, TROUESSART, Cat. Mamm. Suppl., p. 131; +*pusillus grivensis*, additional molar in, MAJOR, P. Zool. Soc. London 1904, i, p. 422; *araneus*, food, RÖRIG, Arb. Geshundeit iv, p. 121.
- Crocidura hindei*, *velutina*, p. 237, *fumosa*, *jacksoni*, p. 238, *maurisca*, p. 239, *hildegardæ*, *cuninghamei*, p. 240, B. E. Africa, THOMAS, Ann. Nat. Hist. (7) xiv, **n. spp.**
- Talpa europæa*, eye, BRUTON, Mem. Manchester Soc. xlviii, No. 20; nerve-terminations, ROMERO, Boll. Soc. zool. Ital. (2) v, p. 65.
- Solenodon* unknown on the American mainland, BANGS, P. Soc. Washington xvii, p. 166.
- Potamogale velox*, specimens in Paris Museum, GRANDIDIER, Bull. Mus. Paris 1904, p. 45.
- Chrysochloris*, change of dentition in adult state, LECHE, Zool. Anz. xxvii, p. 219.
- +*Apternodus*, **n. g.** for *A. mediævus*, Miocene, Montana, **n. sp.**, MATTHEW, Bull. Amer. Mus. xix, p. 202, 1903.
- +*Micropternodus*, **n. g.** for *M. borealis*, *ibid.*, **n. sp.**, MATTHEW, t. c. p. 204.
- +*Ictops thomsoni*, *ibid.*, MATTHEW, t. c. p. 207, **n. sp.**
- +*Proterix*, **n. g.** for *P. loomisi*, Oligocene, Dakota, **n. sp.**, MATTHEW, t. c. p. 227.

IV. CARNIVORA.

Ancestry, LYDEKKER, Knowledge and Scient. News i, p. 61; of Bohemia, recent and fossil, KAFKA, Arch. Landesf. Bohmen x, p. 6.

A. CARNASSIDENTIA.

FELIDÆ and VIVERRIDÆ.

- Felis graysi*, n. nom. for *chinensis* Gray, 1867, nec 1837, p. 268; +*schmerlingi*, n. nom. for *minor* Schmerling, nec Temminck, p. 272; TROUESSART, Cat. Mamm. Suppl. *carrikeri*, Costa Rica, p. 47, **n. sp.**, *nearnsi*, n. nom. for *costaricensis* Mearns, nec Merriam, *panamensis*, Panama, p. 71, **n. sp.**, ALLEN, Bull. Amer. Mus. xx; *ocreatea* Gmelin, 1791, stands for *cafra* (= *caligata* Temm., *lybica* de Winton) Desm.; *o. rubida*, Monbuttu, p. 422, *o. mellandi*, Lake Mweru, p. 423, *o. ugandæ*, Uganda, p. 424, SCHWANN, Ann. Nat. Hist. (7) xiii; *daemon*, Transcaucasia, SATUNIN, P. Zool. Soc. London 1904, ii, p. 163; *lynx wardi*, Altai, LYDEKKER, Field civ, p. 576; *pardus nanopardus*, Somaliland, p. 94, *wiedii rigens*, near Parà, p. 192, THOMAS, Ann. Nat. Hist. (7) xiv; *maripensis*, Maripa, Venezuela, p. 331, *sanctæ-martæ*, Santa Marta, Colombia, p. 332, ALLEN, Bull. Amer. Mus. xx; **n. spp.** and subspp.: *chaus*, black phase in Ceylon, DRUMMOND-HAY, Spolia Zeylan. ii, p. 93; *leo*, in Greece, MEYER, Rep. Smithsonian. Inst. 1903, p. 161, in E. Yorkshire, SHEPPARD, Naturalist 1904, p. 102, prey, CRAWSHAY, P. Zool. Soc. London 1904, ii, p. 144, abnormally coloured cubs, BOLTON, P. Bristol Soc. 2 (x), p. 248; *tristis* allied to *pardalis*, LYDEKKER, Field civ, p. 907; *catus*, in Normandy, LETACQ, Bull. Soc. Rouen xxxix, p. 139, cerebellar capillaries of, ABY, J. Neurol. ix, p. 26 (1899); *domestica*, pancreatic bladder in, MILLER, Amer. J. Anat. iii, p. 269. See also Addendum, p. 50.
- Genetta vulgaris*, myology, CHAINE, Pr.-verb. Soc. Bordeaux 1902-3, p. 59.

- Herpestes ruddi*, figured, THOMAS & SCHWANN, P. Zool. Soc. London 1904 i, pl. vi; *albicaudus loandæ*, Angola, xiii, p. 408, *a. ibeanus*, E. Africa, p. 409, *ocraceus perfulvidus*, Central Somaliland, xiv, p. 96, *o. fulvidior*, S. of Berbera, p. 97, THOMAS, Ann. Nat. Hist. (7), n. subssp.
- Cynictis penicillata pallidior*, Namaqualand, THOMAS & SCHWANN, P. Zool. Soc. London 1904, ii, p. 175, n. subsp.
- Helogale hirtula*, Somaliland, THOMAS, Ann. Nat. Hist. (7) xiv, p. 98, **n. sp.**
- †*Cynodictis paterculus*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 209, **n. sp.**, 1903.

PROTELEIDÆ and CANIDÆ.

- Habits of *Proteles* and S. African *Canidæ*, DU TOIT, S. African Agricult. J. 1904, p. 569.
- Canis familiaris*, effects of diminished atmospheric pressure, MOSSE & MARRO, Arch. ital. Biol. xli, p. 356; *crotophite* muscle, ANTHONY, Bull. Mus. Paris 1903, p. 364; various breeds, BYLANDT (88); pancreas, BARTELS, Arch. Anat. 1904, p. 299; *præhistoricus*, prehistoric, Bohemia, KAFKA, Arch. Landesdf. Bohmen x, p. 67, n. subsp.; origin of St Bernhard, KRÆMER, Globus lxxxv, pp. 105 et seq.; *prichardi*, n. nom. for *montanus* Prichard, 1902, nec Pearson, TROUESSART, Cat. Mamm. Suppl. p. 234; *antarcticus*, extinct, VALENTIN, Mem. Manchester Soc. xlviii, No. 23, p. 45, LYDEKKER, Field civ, p. 613; *goldmani*, Chiapas, Mexico, MERRIAM, P. Soc. Washington xvii, p. 157, **n. sp.**; *aureus* in Egyptian paintings, BOUSSAC, Naturaliste xxvi, p. 245.
- Urocyon cinereo-argentatus inyoensis*, California, ELLIOT, Field Mus. Zool. iii, p. 268, n. subsp.
- Nyctereutes albus*, N. Japan, BEARD, Scientific American 1904, p. 287, **n. sp.**
- Lycan pictus somalicus*, Somaliland, *p. zuluensis*, Zululand, THOMAS, Ann. Nat. Hist. (7) xiv, p. 98, n. subssp.
- †*Ischyrocyon*, **n. g.** for *I. hyenodus*, Miocene, S. Dakota, **n. sp.**, MATTHEW & GIDLEY, Bull. Amer. Mus. xx, p. 246.
- †*Amphicyon socialis*, Miocene, Württemberg, SCHLOSSER, N. Jahrb. Min. xix, Suppl. p. 496, **n. sp.**

URSIDÆ and PROCYONIDÆ.

- Ursus arctus*, skull, BIELER, Arch. Sci. Nat. (4) xvii, p. 445; integument of embryo, MAURER, Denks. Ges. Jena, Haeckel's Festschrift, p. 507; canine from Bridlington Crag, SHEPPARD, Naturalist 1904, p. 142, fossil in Sweden, HOLST, Sveriges geol. Unders. Afh. (C), No. 189; *eulophus*, Admiralty Id. Alaska, p. 153, *kenaiensis*, W. Kenai Peninsula, *horribilis phæonyx*, near Eagle, Alaska, *americanus eremicus*, Coahuila, Mexico, p. 154, MERRIAM, P. Soc. Washington xvii; †*deningeri*, Tertiary, Mosbach, REICHENAU, Jahrb. Nassau. Ver. lvii, p. 1; **n. spp.** & subsp.; *ornatus*, skull, ANDERSON, Rep. Brit. Ass. 1903, p. 692.
- Æluropus melanoleucus*, hair-arrangement on nose, KIDD, P. Zool. Soc. London 1904, i, p. 373.
- Procyon proteus*, Colombia, ALLEN, Bull. Amer. Mus. xx, p. 333, **n. sp.**
- Nasua narica bullata*, Costa Rica, p. 48, *n. panamensis*, Panama, p. 51, *n. yucatanica*, Yucatan, p. 52, *n. pallida*, Mexico, p. 53, *phæocephala*, Venezuela, p. 334, ALLEN, t. c. n. subssp. & **sp.**
- Potos flavus chiriquensis*, Panama, p. 74, *f. caucensis*, Colombia, p. 75, *chapadensis*, Matto Grosso, p. 77, ALLEN, t. c. n. subssp. & **sp.**

MUSTELIDÆ.

- Mustela putorius*, œstrous cycle, MARSHALL, Quart. J. Micr. Sci. xlviii, p. 323.
- Putorius nivalis atlas*, Atlas Mts., p. 323, *sibiricus noctis*, China, p. 390, *s. miles*, E. Siberia, p. 391, *audax*, N. Greenland, *arcticus*, *imperialis*, B. Columbia, p. 392, *a. polaris*, N. Greenland, p. 393, *ermineus stabilis*, Britain, p. 394, HAMILTON, Ann. Nat. Hist. (7) xiii, **n. spp.** & subspp.; *africanus*, from St Thomas and Azores, HAMILTON, t. c. p. 325; *ermineus*, Jura and Islay forms, HAMILTON, Ann. Scott. Nat. Hist. 1904, p. 203.
- Tayra barbara irara*, Colombia, ALLEN, Bull. Amer. Mus. xx, p. 36, n. subsp.
- Meles taxus*, gestation, COCKS, Zoologist (4) viii, p. 108; peritoneum, ANDERSON, Rep. Brit. Ass. 1903, p. 629; myology, CHAINE, Pr.-verb. Soc. Bordeaux 1901-2, p. 54.
- Helictis pierrei*, Cochinchina, BONHOTE, Ann. Nat. Hist. (7) xii, p. 592, 1903, **n. sp.**
- Pæcilogale doggetti*, Ankole, THOMAS & SCHWANN, P. Zool. Soc. London 1904, i, p. 460, **n. sp.**
- Latax lutris nereis*, S. California, MERRIAM, P. Soc. Washington xvii, p. 159, n. subsp.
- †*Potamotherium dacota*, Miocene, S. Dakota, MATTHEW & GIDLEY, Bull. Amer. Mus. xx, p. 254, **n. sp.**
- Lutra* (†)*pristina*, ibid., MATTHEW & GIDLEY, t. c. p. 256; *colombiana*, Santa Marta, Colombia, ALLEN, t. c. p. 452, **n. spp.**
- †*Bunælorus infelix*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 210, **n. sp.**, 1903.
- †*Promioclænus*, **n. g.** for *Mioclænus acolytus* Matthew, TROUESSART, Cat. Mamm. Suppl. p. 43.

B. PINNIPEDIA.

- Sealing, SOUTHWELL, Zoologist (4) viii, p. 57; seals of New Zealand, HUTTON & DRUMMOND (217); seals swallowing stones, LUCAS, Science xx, p. 537.
- Odobænus rosmarus*, tusk from Kelsey Hill, E. Yorks., SHEPPARD, Naturalist 1904, p. 317.
- Halichærus gryphus*, pelage-variation according to age, MILLAIS, P. Zool. Soc. London 1904, i, p. 374.
- Phoca barbata*, fossil in Sweden, MUNTHE, Sveriges geol. Unders. Afh. (C), No. 190.

C. †CREODONTIA.

- Pterodon macrognathus*, Eocene, Fayum, ANDREWS, Geol. Mag. (5) i, p. 211, **n. sp.**

V. RODENTIA.

- Outer ear-bone, ALLEN, Bull. Amer. Mus. xx, p. 135; masseter muscle, CHAINE, Pr.-verb. Soc. Bordeaux 1897-8, p. 161.

ANOMALURIDÆ and SCIURIDÆ.

- Anomalurus beecrofti argenteus*, Nigeria, SCHWANN, Ann. Nat. Hist. (7) xiii, p. 71, n. subsp.

- Sciurus*(†) *vetustus*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 213, 1903; *rufobrachiatus ruvenzorii*, p. 71, *r. pasha*, p. 72, Tropical Africa, SCHWANN, Ann. Nat. Hist. (7) xiii; *aberti phæurus*, p. 205, *a. barberi*, p. 207, Durango, ALLEN, Bull. Amer. Mus. xx; *kaibabensis*, Arizona, p. 129, *aberti minus*, N. Mexico, p. 130, MERRIAM, P. Soc. Washington xvii; *flammiifer*, La Union, Orinoco, THOMAS, Ann. Nat. Hist. (7) xiv, p. 33; *poliopus senex*, S. Michoacan, Mexico, p. 148, *p. peregrinator*, Puebla, Mexico, p. 149, NELSON, P. Soc. Washington xvii: **n. spp.** & subsp.; *vulgaris*, damage by, ARCHIBALD, Tr. Edinb. Field Soc. v, p. 95, food of, WEMER, Jahresber. Westfal. Ver. xxxi, p. 217.
- Funisciurus congicus olivellus*, *c. flavinus*, xiii, p. 411, *pembertoni*, xiv, p. 201, Angola, THOMAS, Ann. Nat. Hist. (7), **n. subsp.**
- Sciuropterus volans goldmani*, Mexico, NELSON, P. Soc. Washington xvii, p. 148, **n. subsp.**
- Eutamias canescens*, Durango, ALLEN, Bull. Amer. Mus. xx, p. 208, **n. sp.**
- Xerus rutilus intensus*, Somaliland, THOMAS, Ann. Nat. Hist. (7) xiv, p. 100, **n. subsp.**
- Citillus nesioticus*, Santa Catalina Id., ELLIOT, Field Mus. Zool. iii, p. 261, **n. sp.**
- Spermophilus citillus*, implantation of ovum, REJSEK, Bull. Ceska Ak. (Med.) viii, p. 37; development of diaphragm and corpus luteum, VÖLKER, op. cit. vii, p. 26, and viii, p. 17; cochlear nerve, WEIGNER, op. cit. vii, p. 65, and Rozp. Ceske Ak. Praze xii, art. 12.

HAPLODONTIDÆ and CASTORIDÆ.

- Aplodontia*(†) *major*, Cavern, California, SINCLAIR, Publ. Calif. Univ. Archæol. & Ethnol. ii, p. 17 (nomen nudum), **n. sp.**
- †*Meniscomys*, a relative of *Haplodon*, MATTHEW & GIDLEY, Bull. Amer. Mus. xx, p. 263.
- Castor fiber*, notes on, MERTENS, Zool. Garten xlv, p. 57.

†ISCHYROMYIDÆ and GLIRIDÆ.

- †*Ischyromys veterior*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 211, **n. sp.**, 1903.
- Eliomys hortualis*, Valencia, CABRERA, Bol. Soc. espan. 1904, p. 183, **n. sp.**

MURIDÆ.

- Tatera fallax*, Ankole, THOMAS & SCHWANN, P. Zool. Soc. London 1904, i, p. 461, **n. sp.**
- Dipodillus mackilligini*, Egyptian desert, THOMAS, Ann. Nat. Hist. (7) xiv, p. 158, **n. sp.**
- Gerbillus dunni*, Somaliland, THOMAS, t. c. p. 101, **n. sp.**
- Ammodillus*, **n. g.** for *Gerbillus imbellis* de Winton, 1898, THOMAS, t. c. p. 102.
- Mus musculus tomensis*, *tscherga*, Siberia, KASTSCHENKO, Results of Zool. Exped. to Altai in 1898 (P. Tomsk. Univ. 1898), p. 46; *musculus faeroensis*, Faeroe group, CLARKE, P. Phys. Soc. Edinb. xv, p. 163; *tunneyi*, N. W. Australia, p. 223, *verecundus*, Brit. New Guinea, p. 598, *colletti*, N. Australia, p. 599, Nov. Zool. xi, *bocagei*, xiii, p. 416, *avunculus*, p. 417, *carillus*, p. 418, Angola, *mordax*, New Guinea, xiv, p. 398, Ann. Nat. Hist. (7), THOMAS; **n. spp.** & subsp.; *petterdi*, nom. nov. for *tetragonurus* Higgins and Petterd, nec Kelaart,

- TROUESSART, Cat. Mamm. Suppl. p. 373; *sylvaticus vintoni* in Essex, COLE, Essex Natural. xiii, p. 294; *musculus*, sex, COPEMAN & PARSONS, P. R. Soc. London lxxiii, p. 32, colour-heredity, G. M. ALLEN, P. Amer. Ac. xl, p. 61, DAVENPORT, Science xix, p. 110, heredity in colour of eyes, CUÉNOT, Arch. Zool. exp. ii, p. xlv, and C.R. Soc. Biol. lvi, p. 1050, placenta, JENKINSON, Brit. Med. J. 1904, ii, p. 1391; *norvegicus*, life history, etc., HEWETT (209); *rattus*, neurones, HATAI, Publ. Univ. Chicago x, p. 179, abnormal skull, HANSEMANN, Arch. Physiol. 1904, p. 376; popular account of European species, MANSION, Rev. Scient. (5) i, p. 169.
- (*Enomys*, **n.g.** for *Mus hypoxanthus*, Pucheran, THOMAS, Ann. Nat. Hist. (7) xiii, p. 416.
- Pogonomys dryas*, O. Stanley Range, Brit. N. Guinea, THOMAS, Nov. Zool. xi, p. 600, **n. sp.**
- Cricetomys ansorgei*, p. 412, *gambianus viator*, p. 413, Angola, THOMAS, Ann. Nat. Hist. (7) xiii, **n. sp.** & subsp.
- Acomys mullak*, Somaliland, THOMAS, op. cit. xiv, p. 103, **n. sp.**
- Arvicanthus pumilio cinereus*, Namaqualand, THOMAS & SCHWANN, P. Zool. Soc. London 1904, i, p. 179; *dorsalis griselda*, d. *rosalia*, Angola, THOMAS, Ann. Nat. Hist. (7) xiii, p. 414: **n. subspp.**
- Pelomys frater*, Angola, THOMAS, t. c. p. 415, **n. sp.**
- Uromys stalkerii*, p. 202, *moncktoni*, p. 399, New Guinea, *porculus*, Solomon Ids., p. 400, THOMAS, op. cit. xiv, **n. spp.**
- Liomys parviceps*, Mexico, GOLDMAN, P. Soc. Washington xvii, p. 82, **n. sp.**
- Onychomys torridus tularensis*, California, p. 124, *t. yakiensis*, *t. canus*, *leucogaster albescens*, Mexico, p. 124, MERRIAM, P. Soc. Washington xvii, **n. subspp.**
- Peromyscus montipinoris*, p. 264, *lasius*, p. 256, California, ELLIOT, Field Mus. Zool. iii; *sonoriensis blandus*, p. 57, *s. fulvus*, *texanus mesomelus*, p. 57, *t. castaneus*, p. 58, *melanotis zamelus*, *attwateri pectoralis*, p. 59, *a. eremioides*, p. 60, *polius*, *gratus gentilis*, p. 61, *amplus*, p. 62, *bullatus*, p. 63, *spicilegus evides*, *s. simulus*, p. 64, *melanophrys zamore*, p. 65, *m. consobrinus*, p. 66, *xenurus*, *zelotes*, p. 67, *banderanus vicinior*, p. 68, *b. angelensis*, *mexicanus teapensis*, p. 69, *yucatanicus badius*, p. 70, *allophylus*, p. 71, *lophurus simulatus*, p. 72, *melanocarpus*, p. 73, *atitlaneus*, p. 74, *goldmani*, *eremicus phæurus*, p. 75, *musculus nigrescens*, *allex*, p. 76, Mexico, OSGOOD, P. Soc. Washington xvii : **n. spp.** & subspp.
- Haplomylomys*, **n. subg.** for *Peromyscus eremicus* Baird, OSGOOD, t. c. p. 53.
- Rhipidomys venezuelae fervidus*, p. 34, *rosilla*, p. 35, La Union, Orinoco, *pictor*, Ecuador, p. 193, *paricola*, near Para, p. 194, THOMAS, Ann. Nat. Hist. (7) xiv, **n. spp.** & subsp.
- Holochilus venezuelae*, Venezuela, ALLEN, Bull. Amer. Mus. xx, p. 330, **n. sp.**
- Sigmodon borucae chiriquensis*, Panama, ALLEN, t. c. p. 68, **n. subsp.**
- Moschophoromys*, **n. nom.** for *Moschomys* (= *Megalomys*) Trouessart, 1903, nec Bellberg, 1828, ELLIOT, Field Mus. Zool. iii, p. 270.
- Megalomys*(+) *majori*, Pleistocene, Barbuda, TROUESSART, Cat. Mamm. Suppl. p. 415, **n. sp.**
- Oryzomys jalape apatelius*, Mexico, ELLIOT, Field Mus. Zool. iii, p. 266; *klagesi*, p. 327, *tenuipes*, p. 328, Venezuela, ALLEN, Bull. Amer. Mus. xx : **n. spp.** & subsp.
- Akodon irazu*, Costa Rica, p. 46, *meridensis*, Venezuela, p. 329, ALLEN, t. c. **n. spp.**
- Neotoma fuscipes cuemophila*, California, ELLIOT, Field Mus. Zool. iii, p. 267; *picta*, p. 79, *isthmica*, p. 80, *parvidens*, *tropicalis*, p. 81, Mexico, GOLDMAN, P. Soc. Washington xvii : **n. spp.**

Arvicola hatanadzumi, Japan, SASAKI, Bull. Coll. Agric. Tokyo vi, p. 52, **n. sp.**; *subterraneus* in Switzerland, GHIDINI, Boll. Soc. ticinese i, p. 41.

Microtus, chorda tympani and visceral arches, EMMEL, J. Neurology xiv, p. 441; *strelzovi*, Siberia, KASTSCHENKO, Results of Exped. to Altai, 1898 (P. Toms. Univ. 1898), p. 50 (made the type of *Platycranius* in 1901); *orcadensis*, Orkneys, MILLAIS, Zoologist (4) viii, p. 244 : **n. spp.**

Lemmus minusculus, Alaska, OSGOOD, North Amer. Fauna, No. 24, p. 36, **n. sp.**

JACULIDÆ and SPALACIDÆ.

Dipus aegyptius, osteology of hind-limb, SCHUMANN, Morphol. Jahrb. xxxii, p. 233.

Bathyergus janetta, Namaqualand, THOMAS & SCHWANN, P. Zool. Soc. London 1904, i, p. 180, pl. vi, **n. sp.**

Spalax hungaricus, notes on, GYULA, Allatt. Kozl. Magyar Tars. 1904, p. 69.

GEOMYIDÆ and HETEROMYIDÆ.

Effects of the work of pocket-gophers on the soil; SETON, Century Mag. lxxviii, p. 300.

Perodipus ingens, p. 141, *venustus*, p. 142, *goldmani*, *agilis tularensis*, California, *montanus utahensis*, Utah, p. 143, *steatori stimulanus*, *cabezonæ*, p. 144, *microps*, *m. levipes*, p. 145, California, MERRIAM, P. Soc. Washington xvii, **n. spp.** & subsp.

OCTODONTIDÆ.

Proechimys oris, near Pará, THOMAS, Ann. Nat. Hist. (7) xiv, p. 195, **n. sp.**
Thricomys laurentius, Pernambuco, THOMAS, op. cit. xiii, p. 254, **n. sp.**

HYSTRICIDÆ and ERETHIZONTIDÆ.

Hystrix leucura, additional molar in, MAJOR, P. Zool. Soc. London 1904, i, p. 416.

†*Anchitheriomys*, **n. g.** for *Hystrix wiedemanni* Roger, 1885, ROGER, Ber. Ver. Augsburg xxxiii, p. 7, 1900.

Erethizon(†) *godfreyi*, Tertiary, Arizona, ALLEN, Bull. Amer. Mus. xx, p. 383, **n. sp.**

Cœndou sanctæ-martæ, Santa Marta, Colombia, ALLEN, t. c. p. 441, **n. sp.**

DINOMYIDÆ and CAVIIDÆ.

Dinomys branicki, rediscovered, GOELDI, P. Zool. Soc. London 1904, ii, p. 158.

Cavia cobaya, perineal sac and glands, GROSZ, Zeitschr. wiss. Zool. lxxviii, p. 261; effects of atmospheric pressure, AGGOZOTTI, Arch. ital. Biol. xli, p. 402; organ of Rosenmüller, SACCHETTI, Boll. Soc. Napoli xvii, p. 225.

†EOMYIDÆ.

Rhodanomys, **n. g.** for *R. schlosseri*, Oligocene, Savoy, **n. sp.**, DEPÉRET & DOUXAMI, Abh. Schweiz. pal. Ges. xxix, Art. 1, p. 69, 1902.

LEPORIDÆ and OCHOTONIDÆ.

Classification, osteology, dentition, etc., LYON, Smithson. Collect. xlv, p. 321.

Pæcilolagus, for *Lepus americanus* Erxl., p. 395, *Pronolagus*, for *L. crassicaudatus* Geoffr., p. 416, *Pentalagus*, for *Caprolagus furnessi* Stone, p. 428, LYON, t. c. **n. subg.** and **g.**

Lepus lugubris, Siberia, KASTSCHENKO, Results of Zool. Exped. to Altai in 1898 (P. Tomsk. Univ. 1898), p. 57; *russatus*, p. 31, *parvulus*, p. 32, Mexico, ALLEN, Bull. Amer. Mus. xx; *insonus*, p. 103, *veræcrucis pacificus*, p. 104, *floridanus connectans*, p. 105, *f. chiapensis*, p. 106, *arizonæ goldmani*, p. 107, *festinus*, p. 108, *merriami altamiræ*, p. 109, Mexico, NELSON, P. Soc. Washington xvii; *capensis granti*, Nainauqualand, THOMAS & SCHWANN, P. Zool. Soc. London 1904, i, p. 182; *angolensis*, Angola, THOMAS, Ann. Nat. Hist. (7) xiii, p. 420; *campes- tris sierræ*, Alpine Valley, California, p. 123, *tularensis*, Tulare Co. Calif., p. 136, *texianus wallawalla*, Washington, p. 137, MERRIAM, P. Soc. Washington xvii: **n. spp.** & subspp.; *cuniculus*, visceral abnormality, BARNABÒ, Bol. Soc. zool. Ital. (2) v, p. 227, dental abnormality, CATOULLARD, Bull. Soc. Rouen xxxviii, p. 217, caudal vertebrae, MATSUOKA, Arch. Entwicklmech. xviii, p. 253. hepatic veins, BONNE, J. Anat. Physiol. xl, p. 225, development of pericardium, ROUVIÈRE, t. c. p. 610; *europæus*, unknown in Brit. Pleistocene, MAJOR, Geol. Mag. (5) i, p. 143, abnormal dentition, LANDOIS, Arch. Entwicklmech. xviii, p. 265.

Sylvilagus meridensis, Sierra de Merida, Venezuela, THOMAS, Ann. Nat. Hist. (7) xiv, p. 36, **n. sp.**

Conothoa, **n. subg.** for *Lagomys roylei* Ogilby, LYON, Smithson. Collect. xlv, p. 438.

†*Palæolagus brachyodon*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 217, **n. sp.**, 1903.

See also Addenda, p. 50.

VI. UNGULATA.

Evolution and morphology of molars, AMEGHINO, An. Mus. Buenos Aires (3) iii, p. 1; histology of central nervous system, DEXLER, Morphol. Jahrb. xxxii, p. 288.

A. ARTIODACTYLA.

Berlin horn and antler exhibition, MATSCHIE, Waidwerk in Wort und Bild 1904, p. 169.

BOVIDÆ and ANTILOCAPRIDÆ.

Bos taurus, brain, FAVARO, Monit. Zool. ital. xv, p. 111; Spanish breeds, CABRERA, Bol. Soc. espan. 1904, p. 71; colour of European breeds, LYDEKKER, p. 180, DAVIES, p. 739, *ægyptiacus*, ancient Egyptian breed, **n. sp.**, LYDEKKER, p. 654, Field civ; (*Bubalus*) *bubalis macrocercus*, Hodgson, probably extinct, LYDEKKER, t. c. p. 643; (*Bubalus*) *caffer raddcliffei*, S.W. Uganda, THOMAS, i, pp. 371 & 464, *c. matthewsi*, E.C. Africa, LYDEKKER, ii, p. 166, P. Zool. Soc. London 1904, n. subspp.; (*Bubalus*) *caffer planiceros* (?), specimens at Amsterdam, RENSHAW, P. Zool. Soc. London 1904, ii, p. 130; (*Bison*) *bison*, numbers surviving, PEEL, Field civ, p. 407; (*Bibos*) *gaurus* and *frontalis*, BAKER, J. Bombay Soc. xv, p. 227, 1903; *sondaicus*, Malay form, BUTLER, op. cit. xiii, p. 192, 1900; *tetriscus* from Peperini,

- PORTIS, Bol. Soc. geol. Ital. xxiii, p. 171; *taurus*, nerves, WEIGNER, Bull. Ceska Ak. (Med.) vii, p. 65.
- Ovibos moschatus*, in captivity, HERZ, Rep. Smithson. Inst. 1903, p. 611.
- Ovis aries*, brain, FAVARO, Monit. Zool. ital. xv, p. 395, WILDER (496); *a. studei*, Prehistoric, Europe, DUERST, Vierteljahrschr. Ges. Zurich xlix, p. 17, *storcki*, Kamchatka, ALLEN, Bull. Amer. Mus. xx, p. 293, *gmellini erskinei*, Elburz Mts. N. Persia, LYDEKKER, Field civ, p. 1031, **n. sp.** and subsp.; *vignei*, races of, LYDEKKER, t. c. p. 1110; *trag-elaphus*, extinction of introduced herd in Teutoburger forest, SCHACHT, Zool. Garten xlv, p. 276.
- Ovis-Capra hybrid* (?), 4-horned skull from the Apennines, GURRIERI, Monit. Zool. ital. xv, p. 287.
- †*Euceratherium*, **n. g.** for *E. collinum*, Cavern, California, **n. sp.**, FURLONG & SINCLAIR, Publ. Calif. Univ. Archæol. & Ethnol. ii, p. 18, and Bull. Geol. California iii, p. 411, pts. 1 & li.
- Oreamnus montanus columbianus*, B. Columbia, *m. missoulæ*, Montana, ALLEN, Bull. Amer. Mus. xx, p. 20, **n. subsp.**
- †*Oioceros proaries*, Pliocene, Samos, SCHLOSSER, Beitr. Pal. Oesterr.-Ung. xvii, p. 73, **n. sp.**
- †*Prodamuliscus*, **n. g.** for *P. gracilidens*, *ibid.*, **n. sp.**, SCHLOSSER, t. c. p. 29.
- †*Protragelaphus zitteli*, *ibid.*, SCHLOSSER, t. c. p. 31, **n. sp.**
- †*Tragoreas oryxoides*, *ibid.*, SCHLOSSER, t. c. p. 34, **n. sp.**
- †*Paleoryx stutzeli*, p. 41, *ingens*, p. 43, *ibid.*, SCHLOSSER, t. c. **n. spp.**
- †*Protoryx hentscheli*, *ibid.*, SCHLOSSER, t. c. p. 49, **n. sp.**
- †*Pseudotragus*, **n. g.** for *P. capricornis*, *ibid.*, **n. sp.**, SCHLOSSER, t. c. p. 51.
- †*Pachytragus*, **n. g.** for *P. crassicornis*, *ibid.*, **n. sp.**, SCHLOSSER, t. c. p. 56.
- †*Tragoceros rugosifrons*, *ibid.*, SCHLOSSER, t. c. p. 64, **n. sp.**
- Cobus defassa* and *C. ellipsiprymnus*, hybrid, POCKOCK, P. Zool. Soc. London 1904, i, p. 3.
- Bubalis jacksoni insignis*, Uganda, THOMAS, P. Zool. Soc. London 1904, i, p. 455, **n. subsp.**
- Antidorcas euchore*, foetal canines in upper jaw, MAJOR, P. Zool. Soc. London 1904, i, p. 419.
- Gazella tgaudryi*, Pliocene, Samos, SCHLOSSER, Beitr. Pal. Oesterr.-Ung. xvii, p. 73; *soemmerringi butteri*, N. E. Africa, THOMAS, P. Zool. Soc. London 1904, i, p. 4: **n. sp.** & subsp.; *dorcas*, myology, CHAINE, Pr.-verb. Soc. Bordeaux 1902-3, p. 12.
- Cephalophus nyasæ defriesi*, N. Rhodesia, ROTHSCHILD, P. Zool. Soc. London 1904, i, p. 229, **n. subsp.**
- Hippotragus leucophæus*, history of extinction and specimens remaining, RENSHAW, Natural History Essays, p. 38.
- †*Merycodus* (= *Cosoryx*), affinities, p. 101, *osborni*, Miocene, Colorado, **n. sp.**, p. 107, MATTHEW, Bull. Amer. Mus. xx.

GIRAFFIDÆ, and CERVIDÆ.

- Giraffa camelopardalis*, myology, CHAINE, Pr.-verb. Soc. Bordeaux 1902-3, pp. 9 & 89, skull, RIDWOOD, p. 150, subspecies, LYDEKKER, p. 202, *c. cottoni*, S. of Lado, p. 207, *c. wardi*, N. Transvaal, p. 221, **n. subsp.**, P. Zool. Soc. London 1904, i.
- Ocapia*, represented in ancient Egyptian paintings, as the "schè," WIEDEMANN, Orient. Literatur. Zeitung. 1902, p. 222, GAILLARD (who doubts the evidence), Bull. Soc. Anthropol. Lyon xxii, p. 1, 1903; habits and protective nature of coloration, DAVID, Globus lxxxvi, p. 385.
- †*Sivatherium giganteum* from Adrianopolis, ABEL, Anz. Ak. Wiss. 1904, p. 195, and SB. Ak. Wien cxiii, p. 1, pl.

- Cervidæ* of Italian Pliocene, ALESSANDRI, Atti Acc. Torino xxxviii, p. 845 ; morphology of antlers, HOFFMANN (211).
- Cervus elaphus*, abnormal antlers, LANDOIS, Arch. Entwicklmech. xviii, p. 289, hyperplasy in antlers, BOTEZAT, t. c. p. 593 ; *e. barbarus*, DREWITT, p. 130, *canadensis*, HOLDING, p. 131, antlers, P. Zool. Soc. London 1904, ii ; †*phiotarandoides*, Pliocene, Piedinont, ALESSANDRI, Atti Acc. Torino xxxviii, p. 853, **n. sp.**, 1903.
- Cervulus muntjac grandicornis*, Burma, LYDEKKER, Field civ, p. 780, **n. subsp.**
- Elaphodus ichangensis*, Ichang, *michianus fociensis*, Fokien, LYDEKKER, P. Zool. Soc. London 1904, ii, p. 170, **n. sp.** & subsp.
- Capreolus caprea*, a sporting account, "SNAFFLE" (432).
- †*Palaemeryx parvulus*, p. 38, *pumilio*, p. 39, Miocene, Bavaria, ROGER, Ber. Ver. Augsburg xxxiii, 1900, *simplicicornis*, Miocene, Württemberg, SCHLOSSER, N. Jahrb. Min. xix, Suppl. p. 497, **n. spp.**

TRAGULIDÆ and CAMELIDÆ.

- For alleged Patagonian fossil *Tragulidæ*, see Addenda, p. 50.
- Ancestry of *Camelidæ*, LYDEKKER, Knowledge and Scient. News i, p. 25.
- †*Oxydactylus*, **n. g.** for *O. longipes*, p. 434, *brachyodontus*, p. 469, Pliocene, Nebraska, **n. spp.**, PETERSON, Ann. Carnegie Mus. ii.
- †*Leptotragulus profectus*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 224, **n. sp.**, 1903.
- †*Pseudolabis*, **n. g.** for *P. dakotensis*, Oligocene, Dakota, **n. sp.**, MATTHEW, op. cit. xx, p. 211.
- †*Miolabis (Paratylopus) primævus*, Oligocene, Dakota, MATTHEW, l. c., **n. subg. & sp.**

SUIDÆ, DICOTYLIDÆ, HIPPOPOTAMIDÆ, &c.

- Sus oi*, Sumatra, MILLER, P. Soc. Washington xv, p. 52, **n. sp.** ; identified by VOLZ, Zool. Jahrb. Syst. xx, p. 518, with *barbatus*, the cranial characters of the latter and *vittatus* being also described, p. 509, et seq. ; *scrofa* in Britain, WALLACE, Tr. Inverness Soc. v, p. 296, genital organs, ANCEL & BOUIN, C.R. Soc. Biol. lvi, p. 281 ; myology, CHAINE, Pr.-verb. Soc. Bordeaux 1900-1, p. 75 ; development of olfactory nerve, BEDFORD, J. Neurology xiv, p. 390.
- Hylochaerus*, **n. g.** for *H. meinertzhageni*, Central Africa, **n. sp.**, THOMAS, Nature lxx, p. 577.
- †*Stibarus montanus*, Miocene, Montana, MATTHEW, Bull. Amer. Mus. xix, p. 219, **n. sp.**, 1903.
- †*Prosthennops*, **n. g.** for *P. crassigenis*, Miocene, S. Dakota, **n. sp.**, MATTHEW & GIDLEY, op. cit. xx, p. 265.
- †*Geniohyus*, **n. g.** for *G. mirus*, p. 160, *fajumensis*, p. 162, *major*, p. 212, Eocene, Fayum, **n. spp.**, ANDREWS, Geol. Mag. (5) i.
- †*Anthracothehium magnum* from Majorca, MAJOR, P. Zool. Soc. London 1904, i, p. 456, pl. xxix ; *minus* from Turkey, NEWTON, Quart. J. Geol. Soc. lx, p. 286.
- Hippopotamus amphibius* in ancient Egypt, BOUSSAC, Rev. Scient (5) i, p. 425.

B. PERISSODACTYLA.

- Equide*, homology of internal pillars of upper molars, AMEGHINO, An. Mus. Buenos Aires ix, pp. 1 et seq.; ancestry, LYDEKKER, Knowledge xxvii, p. 16, OSBORN, Century Mag. lxix, p. 1; hoof-structure, LYDEKKER, Field civ, p. 819.
- Equus caballus*, ancestry, OSBORN, op. cit., EWART, Tr. Highland Soc. 1904, p. 1, Nature lxix, p. 590, LYDEKKER, Knowledge and Scientific News i, pp. 16 & 171; rudimentary horns in, CUNNINGHAM, Field ciii, p. 777; *c. celticus* (Ewart), relationship to Tarpan, STEJNEGER, Naturen 1904, p. 161, LYDEKKER, Field civ, p. 276; rudimentary larmial cavity in, LYDEKKER, P. Zool. Soc. London 1904, i, p. 427, and J. Bombay Soc. xv, p. 703; functional larmier in an Arab, LYDEKKER, Field, op. cit. p. 276; inconstancy of trapezium, BRADLEY, P. Phys. Soc. Edinb. xvi, p. 8; prehistoric race and its employment in equitation, LANDOIS, Jahresb. Westfal. Ver. xxx, pp. 11 & 14, xxxi, p. 158; skulls from Italy, MAGGI, Rend. Ist. Lombardo (2) xxxvii, p. 792; heredity of intelligence, DAVENPORT, Science xix, p. 151; muscular abnormality, CHAINE, Pr.-verb. Soc. Bordeaux 1898-9, p. 111; testicle, BOUIN & ANCEL, Arch. Zool. exp. (4) ii, p. cxli; *przewalskii*, affinities, EWART, P. R. Soc. Edinb. xxiv, p. 460 (1903); *quagga*, extinction and specimens remaining, RENSCHAW, Natural History Essays, p. 169, skull and markings, LYDEKKER, P. Zool. Soc. London, op. cit. p. 426, do. and local races, with *q. danielli*, Cape Colony, n. subsp., p. 319, Pocock, Ann. Nat. Hist. (7) xiv, p. 313; *hemionus* and *h. kiang*, figured, LYDEKKER, op. cit. p. 431, pls. xxvii & xxviii; *onager* and its races, with *o. castaneus*, Kobdo, p. 590, n. subsp., and the two wild forms of *asinus*, figured, LYDEKKER, Nov. Zool. xi, p. 583, pls. xvii-xx; *hemionus* (= *onager*) from Kesslerloch, NÜESCH & STUDER, Denk. Schweiz. Ges. xxxix, pt. 2, p. 95, pl. ii; *caballus asiaticus*, the name for the Arab, with note on its ancestry, LYDEKKER, Field civ, p. 1073; *tstenonis*, mandible from Mosbach, REICHENAU, Notizbl. Ver. geol. Landesanst. Darmstadt (4) xxiv, p. 48.
- +*Hipparion* and allied forms, proper generic names and characteristics, GIDLEY, Bull. Amer. Mus. xx, p. 191.
- +*Meshippus hypostylus*, p. 170, *proteulophus*, p. 171, *obliquidens*, *eulophus*, p. 173, *meteulophus*, p. 174, *brachystylus*, p. 175, *validus*, p. 177, *gidleyi*, *crassiscuspis*, p. 178, Oligocene, N. America, OSBORN, Bull. Amer. Mus. xx, n. spp.
- +*Paratapirus*, n. g. for *P. helveticus* Meyer, DEPÉRET & DOUXAMI, Abh. Schweiz. pal. Ges. xxix, art. 1, p. 34, 1902.
- Rhinocerotidae*, American fossil forms, OSBORN, Bull. Amer. Mus. xx, p. 307.
- Rhinoceros* +*goldfussi* and list of other fossil species of the family, ROGER, Ber. Ver. Augsburg xxxiv, p. 1, 1901, and xxxv, p. 1, 1902, species from the Pliocene of Samos, WEBER, Bull. Soc. Moscou 1903, p. 477; *Diceratherium* +*asphaltense*, Oligocene, Savoy, DEPÉRET & DOUXAMI, Abh. Schweiz. pal. Ges. xxix, art. 1, p. 11, 1902, n. sp.
- +*Cænopus persistans*, p. 318, *Teleoceras medicornutus*, p. 319, *Aphelops planiceps*, p. 321, *brachyodus*, p. 322, Tertiary, N. America, OSBORN, Bull. Amer. Mus. xx, n. spp.
- +*Lophiodon* and *Chasmotherium*, dentition and taxonomy, STEHLIN, Abh. Schweiz. pal. Ges. xxx, art. 1.

C. HYRACOIDEA, †BARYPODA and †AMBLYPODA.

Procavia bettoni, Kikuyu, Brit. E. Africa, THOMAS & SCHWANN, P. Zool. Soc. London 1904, i, p. 464, **n. sp.**; *brucei*, anatomy, *syriaca*, is it the "Coney" of the Bible?, CHAPMAN, P. Ac. Philad. 1904, p. 476.

†*Megalohyrax minor*, Eocene, Fayum, ANDREWS, Geol. Mag. (5) i, p. 213, **n. sp.**

†*Saghatherium magnum*, Eocene, Fayum, ANDREWS, t. c. p. 214, **n. sp.**
A new ordinal group, *Barypoda* for *Arsinoëtherium*, ANDREWS, t. c. p. 481.

†*Arsinoëtherium andrewsi*, Eocene, Fayum, **n. sp.**, LANKESTER, The Sphere Sept. 12, 1903, and Geol. Mag. (4) x, p. 529, 1902, where skull of *A. zitteli* is figured; the genus referred to *Amblypoda*, ANDREWS, Geol. Mag. (5) i, p. 115, but later to *Barypoda*.

†*Barytherium* represents a distinct sectional group, ANDREWS, t. c. p. 482.

D. PROBOSCIDEA.

Ancestry, WOODWARD, Knowledge and Scient. News i, p. 11, LYDEKKER, Indian Field v, p. 116, see also EWART, P. Phys. Soc. Edinb. xv, p. 143; popular account of Elephants, EVANS (152); Italian fossil, BORTOLOTTI, Riv. ital. Pal. x, p. 83.

Elephas tantiquus and †*meridionalis*, in Sicily and Calabria, SEGUENZA, Riv. ital. Pal. x, p. 41; †*primigenius*, in Italy, FLORES, Bull. Soc. geol. Ital. xxii, p. 348, 1903, skull, STINGELIN, Abh. Schweiz. pal. Ges. xxix, art. 5, p. 1, 1902; †*tantiquus*, at Blackpool, DAWKINS, Mem. Manchester Soc. xlviii, No. 17; *africanus*, hairy young, RENSHAW, P. Zool. Soc. London 1904, ii, p. 1; †*cypriotes*, teeth figured, BATE, Phil. Trans. cxvii, p. 347; †*primigenius*, frozen carcass in Siberia, HERZ, Rep. Smithson. Inst. 1903, p. 611, dentition, POUTIER, Naturaliste xxvi, p. 248, in Belgium, MOURION, Bull. Ac. Belgique 1904, p. 1046; †*meridionalis* at Dewlish, FISHER, Geol. Mag. (5) i, p. 621.

†*Mastodon angustidens* from Vogelsberg, SCHOTTLER, Notizbl. Ver. geol. Landesanst. Darmstadt (4) xxiii, p. 26; *arvernensis* at Ostheim, BLANCKENHORN, Jahrb. geol. Landesanst. Berlin xxii, p. 364; *americanus*, in New York, CLARKE, Bull. Geol. Soc. Amer. xiv, p. 537; sp. from Moravia, MAŠKA, Verh. geol. Reichsanst. 1904, p. 304, from Russia, PAVLOW, Ann. Geol. Min. Russ. vi, p. 123.

†*Paleomastodon minus*, Eocene, Fayum, ANDREWS, Geol. Mag. i, p. 115, **n. sp.**, skull figured, p. 113.

†*Meritherium trigodon*, Eocene, Fayum, ANDREWS, t. c. p. 112, **n. sp.**, skull figured, p. 110.

VII. and VIII. CETACEA and SIRENIA.

Whaling, SOUTHWELL, Ann. Scott. Nat. Hist. 1904, p. 77, and Zoologist (4) viii, p. 57; spinal nerves of *Phocaena*, HEPBURN & WATERSTON, J. Anat. Physiol. norm. path. xxxviii, p. 295; identification of ancient Norwegian names of whales, GULDBERG, Zool. Ann. i, p. 29; migrations of *Balaenoptera* and *Megaptera*, GULDBERG, Biol. Centrbl. xxiv, pp. 371 & 391; Cetaceans of New Zealand, HUTTON & DRUMMOND (217); do. (recent and fossil) of Russia, GREVÉ, CB. Ver. Riga xlvii, p. 67; habits, RACOVITZA, Rep. Smithson. Inst. 1903, p. 627; hearing, MEISENHEIMER, Naturw. Wochenschr. (2) iii, p. 1016; of Scotland, TAYLOR, Tr. Inverness Soc. v, p. 236, 1902; Cetacean bones from the Pacific bed, EASTMAN, Mem. Mus. Harvard xxvi, p. 163; adaptation to aquatic life by *Cetacea*, RÖMER, Ber. Senckenberg. Ges. 1904, p. 77*;

- histology of ditto, RAWITZ, Int. J. Anat. xxi, p. 22; extinct *Cetacea* and *Sirenia* of Maryland, CASE, Geol. Surv. Maryland, Miocene, Pal. p. 1.
- Balenide* of Western North Atlantic, TRUE, Smithson. Contr., 4to, vii, p. 1; skeletons of fossil from Hungary, KAROLY, Termes. Kozl. Magyar Tars. 1904, p. 277.
- Balæna mysticetus*, fossil in Sweden, MUNTHE, Sveriges geol. Unders. Afh. (C), No. 190.
- Balænoptera musculus* at Livorno, SALLE, Mem. Soc. Toscana xx, p. 167; in Firth of Forth, EVANS, Ann. Scott. Nat. Hist. 1904, p. 71; "spouting" of various species, ALLEN, Amer. Natural. xxxviii, p. 613.
- †*Aulocetus*, cf. *calaritanus*, from Miocene of Barbolya, Hungary, CAPELLINI, Atti Acc. Lincei (4) xiii, p. 667.
- Mesoplodon bidens*, description of specimen stranded at Rugsund, Norway, Nov. 1901, GRIEG, Bergens Mus. Aarbog 1904, art. 3.
- Berardius*, cf. *bairdi*, from N. Pacific, TRUE, Science (2) xx, p. 888.
- Orcinus orca*, specimen from Maine, TRUE, P. U. S. Mus. xxvii, p. 227.
- Phocæna communis*, auditory organ, BOENINGHAUS, Zool. Jahrb. Anat. xix, p. 189; breeding season, NEHRING, Zool. Anz. xxvii, p. 713; urino-genital apparatus, HEPBURN & WATERSTON, P. Phys. Soc. Edinb. xv, p. 112.
- Delphinus delphis*, ovary and regeneration of tissue, PALADINO, Arch. ital. Biol. xlii, p. 95, and Rend. Acc. Napoli (3) ix, p. 289.
- Tursiops catalania*, from Madras, LYDEKKER, J. Bombay Soc. xv, p. 408.
- Sotalia fergusonii*, Madras, LYDEKKER, t. c. p. 411, **n. sp.**
- Lagenorhynchus albirostris*, at Aberdeen in October, SIM, Zoologist (4) viii p. 383.
- Prodelphinus euphrosyne*, at Elba, DAMIANI, Atti Soc. Ligustica xiv, p. 165.
- Globiceps*?, ear-bone from Pacific, EASTMAN, Mem. Mus. Harvard xxvi, p. 163.
- Grampus griseus*, skull, ANDERSON, Rep. Brit. Ass. 1903, p. 691.
- †*Priscodelphinus crassangulum*, Miocene, Maryland, CASE, op. cit. p. 12, **n. sp.**
- The group †*Archæoceti* an offshoot from the *Carnivora Creodontia*, and in nowise related to *Cetacea*, FRAAS, Geol. Pal. Abhandl. (2) vi, p. 199.
- †*Protocetus*, **n. g.** for *P. atavus*, Eocene, Egypt, **n. sp.**, FRAAS, t. c. p. 201.
- †*Mesocetus*, **n. g.** for *M. schweinfurthi*, Eocene, Egypt, **n. sp.**, FRAAS, t. c. p. 217.
- †*Zeuglodon isis*, Eocene, Fayum, ANDREWS, Geol. Mag. (5) i, p. 214, **n. sp.**; absence of bony armour in genus, LUCAS, Science xix, p. 436.
- Osteology of extinct Sirenians, ABEL, Abh. geol. Reichsanst. xix, pt. 2.
- Rhytina stelleri*, pelvis, LORENZ, Abh. geol. Reichsanst. xix, pt. 3, and Verh. Ges. Wien 1904, p. 142.
- Halicore* and *Manatus*, osteology of limbs, FREUND, Zeitschr. wiss. Zool. lxxvii, p. 363.
- Manatus australis*, notes on, FERREIRA, Arch. Mus. Janeiro xii, p. 169.
- †*Metaxitherium petersi*, Hainburg, *meyeri*, Baltringen, Tertiary, ABEL, Abh. geol. Reichsanst. xix, pt. 2, p. 15, **n. spp.**
- †*Protosiren*, **n. g.** for *P. fraasi*, Eocene, Egypt, and *P. dolloi* [*dolli*], Eocene, Italy, **n. spp.**, ABEL, t. c. p. 214.

IX. and X. EDENTATA and EFFODIENTIA.

Distribution, etc., GREVÉ, SB. Ges. Dorpat xiii, p. 77 (1902); not derived from Ganodonts, SCOTT, Rep. Princeton Exped. v, pt. 3; Glyptodonts and Megalotherioids of Patagonia described by SCOTT, op. cit. pts. 2 & 3.

- Tamandua tetradactyla chapadensis*, Chapada, Matto Grosso, *t. instabilis*, Santa Marta, p. 392, *t. tenuirostris*, Vera Cruz, Mexico, p. 394, *t. chiriquensis*, Chirique, Panama, p. 395, ALLEN, Bull. Amer. Mus. xx, n. subsp.
- Myrmecophaga jubata*, Eustachian tube, DENKER, Zeitschr. Morphol. viii, p. 1.
- +*Matschiella*, n. nom. for *Sphenodon* Lund 1837, nec Gray 1831, Poche, Zool. Ann. i, p. 48.
- +*Hapalops longiceps*, p. 182, 1903, *ponderosus*, p. 236, *vulpiceps*, p. 253, *platycephalus*, p. 275, Tertiary, Patagonia, SCOTT, Rep. Princeton Exped. v, n. spp.
- +*Megalonychotherium*, n. g., p. 278, for *M. atavus*, p. 279, *ibid.*, n. sp., SCOTT, t. c.
- +*Planops magnus*, *ibid.*, SCOTT, t. c. p. 323, n. sp.
- +*Mylodon*, from W. Patagonia, CORDOVEZ, Act. Soc. Chili xii, p. 1, 1903.
- +*Megatherium*, osteology, BOSCA, Bol. Soc. espan. iii, p. 211.
- +*Grypothorium*, at Ultima Esperanza, notes on, HAUTHAL, Ber. Senckenberg. Ges. 1904, p. 89*.
- +*Eucinepeltus crassus*, Tertiary, Patagonia, SCOTT, Rep. Princeton Exped. v, p. 152, n. sp., 1903.
- +*Metopotoxus anceps*, *ibid.*, SCOTT, t. c. p. 158, n. sp.
- Chlamydophorus truncatus*, myology, CHAINE & KUNSTLER, Pr.-verb. Soc. Bordeaux, 1902-3, p. 4.
- Metacheiromys*, an armadillo, p. 163, *M. dasypus*, p. 164, *tatusia*, p. 165, Bridger Eocene, N. America, n. spp., OSBORN, Bull. Amer. Mus. xx.
- Glyptodon*, etc., structure of skeleton, JANENSCH, Zeitschr. Deutsch. geol. Ges. lvi, Protok. p. 56.
- Orycteropus* and *Manis*, anatomy and bionomics, CARRUCCIO, Boll. Soc. zool. Ital. (2) v, p. 209.

XI. MARSUPIALIA.

- Identity of dental formula in Marsupials and Placentals, AMEGHINO, An. Mus. Buenos Aires ix, p. 1 et seq.; origin of marsupium, BRESSLAU, Zeitschr. Deutsch. zool. Ges. 1904, p. 212; urino-genital organs, DISSELHORST, Denk. Ges. Jena—Semon's Reise iii, *Monotremata*, ii, p. 121; genital cords of *Phalanger*, BROCK, P. Ac. Amsterdam 1904, p. 87; heart, DEVEZ, Bull. Soc. Philom. v, p. 105, Bull. Mus. Paris 1903, p. 227.
- Macropus robustus alligatoris*, N.W. Australia, THOMAS, Nov. Zool. xi, p. 224, n. subsp.
- Peradorcas*, n. g. for *Petrogale concinna* Gould, THOMAS, t. c. p. 266.
- Petrogale rothschildi*, N.W. Australia, THOMAS, t. c. p. 366, n. sp.
- Pseudochirus canescens gyrrator*, New Guinea, THOMAS, Ann. Nat. Hist. (7) xiv, p. 401, n. sp.
- Dromicia*, in New South Wales, WAITE, Rec. Austral. Mus. v, p. 134.
- Dasyurus demonellus*, New Guinea, THOMAS, Rec. Austral. Mus. v, p. 402, n. sp.
- Phascogale penicillata pirata*, p. 228, *bella*, p. 229, THOMAS, Nov. Zool. xi; *blythi*, WAITE, Rec. Austral. Mus. v, p. 122, N.W. Australia; n. spp. & subsp.
- Notoryctes typhlops*, anatomy and systematic position, CARLSSON, Zool. Jahrb. Anat. xx, p. 81, SWEET, P. Soc. Victoria (2) xvii, p. 76.
- Anuromeles* Heller, 1897, founded on a tailless specimen of *Perameles*, HELLER, Zool. Anz. xxvii, p. 675.
- Caluromys trinitatis leucurus*, Maripa, Low. Orinoco, THOMAS, Ann. Nat. Hist. (7) xiv, p. 36, n. sp.

- Didelphys*, lymphatics, DRZEWINA, Bull. Mus. Paris 1903, p. 281; lung, BREMER, Amer. J. Anat. iii, p. 67.
Peramys brevicaudatus dorsalis, Venezuela, ALLEN, Bull. Amer. Mus. xx, p. 327, n. subsp.
 †*Amphiperatherium rhodanicum*, Oligocene, Savoy, DEPÉRET & DOUXAMI, Abh. Schweiz. pal. Ges. xxix, art. 1, p. 80, 1902, n. sp.

XII. MONOTREMATA.

- Male generative organs, DISSELHORST, Denk. Ges. Jena—Semon's Reise iii, *Monotremata*, ii, p. 121; see also infra; heart, DEVEZ, Bull. Soc. Philom. v, p. 105, Bull. Mus. Paris 1903, p. 231.
Echidna, auditory organ, ALEXANDER, Denk. Ges. Jena—Semon's Reise iii, *Monotremata*, ii, p. 1; development of urino-genital apparatus, KELBEL, t. c. p. 151.
Ornithorhynchus, poison of spur, Noc, C.R. Soc. Biol. lvi, p. 451.
 †*Hypsiprymnopsis* Dawkins, 1864, stands for *Microlestes* Plieninger, 1847, nec Goebel 1846, Poche, Zool. Ann. i, p. 47.

†INCERTÆ SEDIS.

- †*Karoomys*, n. g. for *K. browni*, Trias, Aliwal North, BROOM, Geol. Mag. (4) x, p. 345, 1903, n. sp.

ADDENDA.

The following new names for extinct Argentine Mammals are stated to have been proposed by AMEGHINO in An. Soc. Argent., vols. lvi–lviii. These vols., so far as known, have not reached this country, and the names are quoted from a tract published at Buenos Aires entitled “Nuevas Especies de Mamíferos, Cretáceos y Terciarios de la República Argentina (No. 25A):—

- (?) PRIMATES.—*Acropithecus* (n. g.) *tersus*, p. 4; *Antepithecus innexus*, *interassus*, p. 5, *gradatus*, p. 6; *Gonopithecus* (n. g.) *trigonodontooides*, p. 6; *Henricosbornia alouatina*, p. 7, *subconica*, p. 8.
 (?) HYRACOIDEA.—*Oldfieldthomasia plicata*, p. 9; *Paracaelodus* (n. g. for *O. marginialis*), p. 9; *Eohyrax platyodus*, *isotemnoides*, p. 10.
 TYPOTHERIA.—*Phanophilus* (n. g.) *dorsatus*, p. 12; *Epipatriarchus* (n. g.) *bifidens*, p. 13, *innexus*, p. 16; *Cænophilus* (n. g.) *tripartitus*, p. 16; *Getohetherium* (n. g.) *tournoueri*, p. 17; *Tegehotherium* (n. g.) *burmeisteri*, p. 18; *Pseudotypotherium* (n. g.) *pulchrum*, p. 19; *Trachytypotherium superans*, *rectum*, p. 22, *disparile*, *vietum*, p. 23; *Xenotherium* (n. g.) *immersum*, p. 24; *Typotherium pseudopachygnathum*, p. 26, *eguiari*, p. 27; *Progalæopithecus* (n. g.) p. 28, *fissurellatus*, p. 29, *tournoueri*, p. 30. [N.B. The *Galæopithecidae* are placed in the *Typotheria* !]
 TOXODONTIA.—*Stereotoxodon* (n. g.) *tehuelche*, p. 31.
 HIPPOIDEA.—*Nesohippus* (n. g.) *insulatus*, p. 33; *Interhippus phorcus*, p. 34; *Stilhippus* (n. g.) *deterioratus*, p. 35; *Perhippidion* (n. g.) *tetragonoides*, p. 36.
 CONDYLARTHRA.—*Didolodus dispar*, p. 38; *Periacrodon* (n. g. for *Polyacrodon lanciformis* Roth.), p. 39; *Oroacrodon*, for *Polyacrodon* Roth., 1898, nec *Polyacrodon* Jaecel, 1889, p. 40; *Notoprotopogonia* (n. g. for *Euprotopogonia patagonica*), p. 41; *Argyrolambda* (n. g.) *conidens*, p. 43; *Heterolambda* (n. g.) *lunulata*, p. 43; *Eulambda* (n. g. for *Josepholeidea aculea*), p. 45; *Ricardolydekkeria cinctula*, p. 46; *Lopho-* 1904. [VOL. XLI.]

lambda (n. g. for *R. profunda*), p. 47; *Propantostylops* (n. g. for *Pantostylops minutus*), p. 48; *Hemistyllops* (n. g. for *Pantostylops incompletus*), p. 49, *paucicuspidatus*, *trigonostyloides*, p. 50; *Polystyllops* (n. g.) *progrediens*, p. 51.

PERISSODACTYLA.—*Adiantus patagonicus*, p. 52; *Theosodon karaikensis*, p. 54; *Paranauchenia* (n. g. for *Scalibrinitherium denticulatum*), p. 55; *Phenizauchenia* (n. g.) *tehuelcha*, p. 57; *Promacrauchenia* (n. g. for *Macrauchenia antiqua*), p. 58; *Euprotherotherium* (n. g.) *inaequifacies*, p. 59; *Protherotherium karaikense*, p. 60, *dichotomum*, *politum*, p. 61; *Lophogododon* (n. g.) *paranensis*, p. 62; *Licaphrium pyramidatum*, p. 63; *proximum*, p. 64; *Licaphrops* (n. g. for *Prolicaphrium festinum*), p. 64, *coalescens*, p. 65; *Prothoatherium plicatum*, p. 65; *Thoatherium velatum*, *karaikense*, p. 66, *bilobatum*, p. 67; *Diadiaphorus caelops*, p. 67; *Proectocion* (n. g.), p. 68, *argentinus*, p. 69, *precisus*, p. 70; *Aragonia* (n. g.) *insulata*, p. 71.

ARTIODACTYLA.—*Listriodon bonariensis*, p. 71, *tarijensis*, p. 73; *Catagonus* (n. g.) *metropolitanus*, p. 73; *Dicotyles platensis*, p. 75; *Microtragulus* (n. g.) *argentinus*, p. 76.

AMBLIPODA.—*Trigonostylops columnifer*, p. 77, *coryphodontoides*, *germinalis*, p. 78; *Scabellia cyclogona*, p. 79; *Albertogaudrya separata*, *oxygona*, p. 80; *Astrapotherium karaikense*, p. 81; *Astrapothericulus emarginatus*, p. 82.

ANCYLOPODA.—*Colpodon plicatus*, p. 83; *Henricofilholia intercineta*, p. 84; *Pyrallorhodon* (n. g.) *pyriformis*, p. 85; *Amphitemnus* (n. g.) *nucleatus*, *transitorius*, p. 86; *Dialophus recticrista*, p. 87; *Toxotemnus* (n. g. for *Isotemnus lophiodontoides*), p. 87; *Plexotemnus* (n. g.) *complicatissimus*, p. 88; *Pleurostylodon irregularis*, p. 90, *limpidus*, *obscurus*, p. 91, *bifidus*, *neglectus*, p. 92; *Paratemnus* (n. g.) *geminatus*, p. 93; *Tychostylops simus*, p. 95; *Lophocelus* (n. g.) *macrostomus*, p. 96.

TILLODONTA.—*Notostylops brachycephalus*, p. 97, *promurinus*, p. 98; *Catastylops deflexus*, p. 99.

RODENTIA.—*Eosteiomys medianus*, p. 100; *Parasteiomys* (n. g.) *uniformis*, p. 101; *Protoacaremys amplus*, p. 101; *Disteiomys* (n. g.) *graciloides*, p. 102; *Paramyocastor* (n. g.) *intactus*, p. 103; *Eoctodon crassiusculus*, p. 103; *Sigmomys* (n. g.) *oppositus*, p. 103; *Simplimus* (n. g.) *indivisus*, p. 104; *Tetrastylus araucanus*, p. 104, *giganteus*, p. 105; *Archæocardia mustersiana*, p. 106; *Argyrolagus* (n. g.) *palmeri*, p. 106.

(?) PLAGIAULACOIDEA.—*Polydolops simplex*, p. 107; *Archæodolops* (n. g. for *P. clavulus*), p. 108; *Anisodolops* (n. g. for *P. serrifer*), p. 108; *Anadolops* (n. g.) *thylacoleoides*, p. 109.

MARSUPIALIA.—*Pilchenia* (n. g.) *lucina*, *lobata*, p. 110; *Progarzonia* (n. g.) *notostyloensis*, p. 111; *Clenia* (n. g.) *minuscule*, p. 111; *Didelphys abrupta*, *biforata*, p. 112, *perplana*, p. 113; *Hyperdidelphys* (n. g.) *acutidens*, p. 113; *Paradidelphys* (n. g.) *nodosa*, p. 114; *Cladodidelphys* (n. g.) *crucialis*, p. 115.

CREODONTIA, etc.—*Arminhierungia contigua*, p. 116; *Parahyænodon* (n. g.) *argentinus*, p. 117; *Acrohyænodon* (n. g.) *pungens*, p. 118.

CARNIVORA.—*Pachynasua* (n. g.) *clausa*, p. 119; *Pararctotherium* (n. g.) *enectum*, p. 120, *pamparum*, p. 121; *Proarctotherium* (n. g. for *A. vetustum*), p. 121; *Amphicyon argentinus*, p. 122; *Notamphicyon* (n. g.) *paranensis*, p. 122; *Smilodon crucians*, p. 123; *Felis propuma*, p. 123, *proplatensis*, p. 124.

EDENTATA.—*Rathymotherium* (n. g.) *perfectum*, p. 126; *Protamandua* (n. g.) *rothi*, p. 128; *Promyrmephus* (n. g.) *euryarthrus*, p. 128, *dolichoarthrus*, p. 129; *Argyromanis* (n. g.) *patagonica*, p. 129; *Orthoarthrus* (n. g.) *mixtus*, p. 130; *Propreotherium* (n. g.) *desendense*, p. 131; *Prepothierops* (n. g.) *megatheroides*, p. 132; *Megathericulus* (n. g.) *patagonicus*, p. 132; *Neonematherium* (n. g.) *flabellatum*,

p. 133; *Scelidothériops* (n. g.) *avunculus*, p. 134; *Eumylodon bonariense*, p. 136; *Octomyodon* (n. g.) *aversus*, p. 137; *Palæhoplophorus meridionalis*, p. 137; *Plophorus cuneiformis*, p. 138, *araucanus*, p. 139; *Dædicurus ensenadensis*, p. 139; *Eutatus præpampæus*, p. 140; *Epipeltephilus* (n. g.) *recurvus*, p. 140.

The following were recorded too late to be included in the list of Titles.

504. ALCOCK, N. H. On Mammalian non-medullated nerve. J. Physiol. xxx, pp. xxxv & xxxvi.
505. BACKMUND, C. Entwicklung der Haare und Schweissdrüsen der Katze. Anat. Hefte. Arb. xxvi, pp. 315-383, pls. xi-xiv. [*Felidæ*.]
506. DAMANY, P. La cavité cotyloïde, evolution ontogénique comparée de sa profondeur chez l'Homme et les Animaux. J. Anat. Physiol. xl, pp. 387-413, figg.
507. DENNSTEDT, A. Die Sinus duræ matris der Haussäugethiere. Anat. Hefte. Arb. xxv, pp. 1-96, pls. i-iii.
508. GLAS, E. Ueber die Entwicklung und Morphologie der inneren Nase der Ratte. Anat. Hefte. Arb. xxv, pp. 273-341, pls. x-xxiv.
509. ILLING, G. Vergleichende Untersuchungen über die submaxillaren Speicheldrüsen der Haussäugethiere. Anat. Hefte. Arb. xxvi, pp. 385-526, pls. xv-xviii.
510. MACNAMARA, N. C. Beweisschrift betreffend die gemeinsame Abstammung der Menschen und der Anthropoiden Affen. Arch. Anthropol. xxxi, pp. 77-93, fig. [*Primates*.]
511. MAGNUS, R. Versuche am überlebenden Dünndarm von Säugethiere. Pt. I. Arch. Ges. Physiol. cii, pp. 123-151, figg.
512. MÜLLER, C. Beiträge zur vergleichenden Anatomie und Histologie der Prostata der Haussäugethiere, etc. Anat. Hefte. Arb. xxvi, pp. 527-572, pls. xix-xxiii.
513. MÜLLER, E. Beiträge zur Morphologie des Gefässsystems: II. Die Arterien der Säugethiere. Anat. Hefte. Arb. xxvii, pp. 71-242, pls. v-xvi.
514. SABIN, [Miss] F. R. On the development of the superficial lymphatics in the skin of the Pig. Amer. J. Anat. iii, pp. 183-195, figg.
515. SCHLOSSER, M. Die mumifizierte Tierwelt des alten Ägyptens. Arch. Anthropol. xxx, pp. 202-207.
516. VALEDINSKY, I. A. Zur Frage über die Nervenknotten im Herzventrikel einiger Säugethiere. Anat. Hefte. Arb. xxvii, pp. 285-294, pls. xix & xx.
517. WILSON, W. H. The immunity of certain desert Mammals to Scorpion venom. J. Physiol. xxxi, pp. 1-lii.

III. AVES.

BY

R. BOWDLER SHARPE, LL.D., &C.

CONTENTS.

| | Page | | Page |
|-----------------------------------|------|-------------------------------------|------|
| I. TITLES | 2 | Passeriformes (<i>continued</i>). | |
| II. SUBJECT INDEX. | | Tyrannidæ | 53 |
| Faunistic | 35 | Pittidæ | 54 |
| Anatomy & Miscellaneous | 36 | Xenicidæ | 54 |
| III. SYSTEMATIC— | | Hirundinidæ | 54 |
| Ratitæ. | | Muscicapidæ | 55 |
| Rheiformes | 37 | Campophagidæ | 55 |
| Casuariiformes | 37 | Pycnonotidæ | 55 |
| Æpyornithiformes | 37 | Timeliidæ | 56 |
| Carinata. | | Panuridæ | 57 |
| Tinamiformes | 38 | Troglodytidæ | 57 |
| Galliformes | 38 | Cinclidæ | 57 |
| Hemipodii | 39 | Mimidæ | 57 |
| Pteroclidiformes | 39 | Turdidæ | 57 |
| Columbiformes | 40 | Sylviidæ | 59 |
| Opisthocomiformes | 40 | Vireonidæ | 60 |
| Ralliformes | 41 | Ampelidæ | 60 |
| Podicipediformes | 41 | Dulidæ | 60 |
| Colymbiformes | 41 | Ptilogonatidæ | 61 |
| Spheniciformes | 41 | Prionopidæ | 61 |
| Procellariiformes | 41 | Laniidæ | 61 |
| Alciformes | 42 | Paridæ | 61 |
| Lariformes | 42 | Chamæidæ | 62 |
| Charadriiformes | 42 | Regulidæ | 62 |
| Gruiformes | 44 | Sittidæ | 62 |
| Ardeiformes | 44 | Certhiidæ | 62 |
| Anseriformes | 44 | Zosteropidæ | 63 |
| Pelecaniformes | 45 | Dicaeidæ | 63 |
| Cathartiformes | 45 | Nectariniidæ | 63 |
| Accipitriformes | 46 | Meliphagidæ | 63 |
| Strigiformes | 48 | Mniotiltidæ | 64 |
| Psittaciformes | 49 | Motacillidæ | 64 |
| Coraciiformes | 49 | Alaudidæ | 64 |
| Trogones | 51 | Fringillidæ | 66 |
| Coccyges | 51 | Tanagridæ | 68 |
| Scansores | 51 | Ploceidæ | 68 |
| Piciformes | 52 | Icteridæ | 69 |
| Eurylæmiformes | 52 | Oriolidæ | 69 |
| Passeriformes. | | Dicuridæ | 70 |
| Formicariidæ | 53 | Eulabetidæ | 70 |
| Dendrocolaptidæ | 53 | Sturnidæ | 70 |
| | | Ptilonorhynchidæ | 70 |
| | | Paradisæidæ | 70 |
| | | Corvidæ | 70 |

INTRODUCTION.

ALTHOUGH the number of titles is somewhat less than in 1903, their perusal shews that some excellent memoirs have been published, while the standard works by Dr HARTERT, Prof. RIDGWAY, Prof. REICHENOW, and Captain SHELLEY, have all been advanced. The Recorder has again to thank Mr Chubb for his assistance.

I.—TITLES.*

1. *ADAMS, C. C. The migration route of Kirtland's Warbler (*Dendroica kirtlandi*). Bull. Michigan Ornith. Club v, pp. 14-21. [*Mniotiltidae*.]
2. ALDERSON, R. Nesting of the Rufous Dove (*Leptoptila reichenbachi*). Avicult. Mag. (2) ii, pp. 270-275. [*Columbiformes*.]
3. *ALLEN, G. M. The birds of New Hampshire. P. Manchester Inst. Arts & Sci. iv, pp. 23-222.
4. ALLEN, J. A. The case of *Megalestris* vs. *Catharacta*. Auk xxi, pp. 345-348. [*Lariformes*.]
5. —. Black-capped Petrel (*Æstrelata hesitata*) in New Hampshire. T. c. p. 383, pl. xxii. [*Procellariiformes*.]
ALLÉON, A. [Comte]. Obituary. [See LEVERKÜHN, P. (349).]
6. ALLISON, A. The birds of West Baton Rouge Parish, Louisiana. Auk xxi, pp. 472-484.
7. ANDERSON, M. P. & GRINNELL, J. Birds of the Siskiyou Mountains, California: a problem of distribution. P. Ac. Philad. 1903, pp. 4-15.
8. ANDRÉ, E. A Naturalist in the Guianas. London, 1904, 8vo, xiv + 310 pp. with thirty-four illustrations and a map.
9. ANDREWS, C. W. On the pelvis and hind-limb of *Mullerornis betsilei* M.-Edw. & Grand.: with a note on the occurrence of a Ratite bird in the Upper Eocene beds of the Fayum, Egypt. P. Zool. Soc. London 1904, i, pp. 163-171, pl. v, text-fig. 15. [*Æpyornithiformes*.]
10. APLIN, O. V. *Emberiza pusilla* near Rugby. Ibis 1904, pp. 306 & 307. [*Fringillidae*.]
11. —. Birds of Oxfordshire or Buckinghamshire. Zoologist 1904, pp. 75 & 76.
12. —. Notes on the ornithology of Oxfordshire. T. c. pp. 361-372.
13. —. On the breeding of the Black-necked Grebe (*Podiceps nigricollis*) in the British Islands. T. c. pp. 417-420. [*Podicipediformes*.]
14. ARRIGHI-GRIFFOLI, G. Note ed appunti di un cacciatore sui nostri uccelli migratori. Part II. Avicula viii, pp. 6-12, 75-77, 98-102, 135-140, 148-150.
15. —. Caccia alle Anitre con reti. T. c. pp. 20-23.
16. ARRIGONI DEGLI ODDI, E. Manuale di Ornitologia Italiana. Elenco descrittivo degli Uccelli stazionari o di passaggio finora osservati in Italia. Milano, 1904, 908 pp.
17. ARUNDEL, W. B. Ferruginous Duck (*Fuligula nyroca*) in Yorkshire. Zoologist 1904, p. 33. [*Anseriformes*.]
BAER, G. A. [See OUSTALET, E. (448).]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

18. BAILEY, F. M. Additional notes on the birds of the Upper Pecos. Auk xxi, pp. 349-363. [*Charadriiformes*, *Galliformes*, *Trochili*, *Tyrannidae*, *Fringillidae*, *Motacillidae*, *Mimidae*, *Turdidae*.]
19. ———. Additions to Mitchell's list of the summer birds of San Miguel County, New Mexico. T. c. pp. 443-449. [*Tyrannidae*, *Fringillidae*.]
20. ———. Twelve Rock Wren Nests in New Mexico. Condor vi, pp. 68-70.
21. ———. A Dusky Grouse and her brood in New Mexico. T. c. pp. 87-89 cum fig.
22. BANGS, O. Two new subspecies of tropical American Tyrant-birds. P. Soc. Washington xvii, pp. 113 & 114. [*Tyrannidae*.]
23. BANNERMAN, D. A. Ornithological notes made during a trip to the West Indies. Zoologist 1904, pp. 228-230.
24. BARBOZA DU BOCAGE. Contribution à la Faune des quatre îles du Golfe de Guinée. J. Sci. Lisb. (2) vii, No. xxvi, Oiseaux, pp. 72-90.
25. BARNARD, C. A. Coomoooolaroo notes. Emu iv, pp. 67 & 68.
26. BARRETT-HAMILTON, G. E. H. A physiological theory to explain the winter-whitening of birds and mammals in snowy countries, and the most striking points in the distribution of white in vertebrates generally. Rep. Brit. Ass. 1903, pp. 698 & 699.
27. ———. On the sound produced by the wings of birds in flight. Ibis 1904, pp. 474 & 475.
- BARTELS, M. [See FINSCH, O. (188).]
28. BARTSCH, P. Notes on the Herons of the District of Columbia. Smithson. Collect. xlv, pp. 104-111, pls. xxxii-xxxviii.
- BATES, G. L. [See SHARPE, R. B. (592).]
29. BAU, A. Die Eier von *Larus audouini*. Ornith. Jahrb. xv, pp. 1-10, Taf. i. [*Lariformes*.]
30. ———. Nochmals *Erithacus cairii*. Ornith. Monber. xii, pp. 4-6. [*Turdidae*.]
31. BECK, R. H. Bird life among the Galapagos Islands. Condor vi, pp. 1-11. [*Mimidae*, *Pelecaniformes*.]
32. BEDDARD, F. E. A note upon the tongue and windpipe of the American Vultures, with remarks on the interrelations of the genera *Sarcorhamphus*, *Gypagus* and *Cathartes*. P. Zool. Soc. London 1903, ii, pp. 386-392, text-figg. 45-48. [*Cathartiformes*.]
33. ———. Exhibition and remarks on the brain of a Troupial (*Quiscalus versicolor*). Op. cit. 1904, ii, p. 2. [*Icteridae*.]
- 33A. ———. On the skull of the Cape Crowned Crane (*Balearica chrysopelegus*). T. c. p. 131. [*Ardeiformes*.]
34. BEEBE, C. W. Breeding of Lawrence's Warbler (*Helminthophila lawrencei*) in New York City. Auk xxi, pp. 387 & 388. [*Mniotiltidae*.]
35. BENSON, C. W. Some notes on Swiss birds observed in June, 1904. Zoologist 1904, pp. 423 & 424.
36. BENT, A. C. Nesting habits of the *Herodiones* in Florida. Auk xxi, pp. 20-29, 259-270, pls. ix & x, xix-xxi. [*Ardeiformes*.]

37. BERGE, R. Die Ringamsel im Erzgebirge. Ornith. Monber. xii, pp. 160-162. [*Turdidæ*.]
38. BERNARD, P. Réapparition du Jaseur de Bohème (*Ampelis garrulus*) dans le pays de Montbéliard. Ornith. xii, No. 4, pp. 565-567.
39. BERNEY, F. L. North Queensland notes on some migratory birds (March 1902-July 1904). Emu iv, pp. 43-47. [*Timeliidæ*, *Meropes*.]
40. BERRY, W. On the nesting of the Hawfinch (*Coccothraustes coccothraustes*) in Fifeshire. Ann. Scott. Nat. Hist. 1904, pp. 11-14. [*Fringillidæ*.]
41. BERTLING, A. E. L. On the hatching and rearing of the Brush Turkeys (*Talegalla lathamii*) at the Zoo. Avicult. Mag. (2) ii, pp. 294-297. [*Galliformes*.]
- 41A. BERTONI, A. DE W. Contribución para el conocimiento de las Aves del Paraguay. Anales Cient. Parag. Ser. I, No. 3, pp. 1-10, 1904. [*Turdidæ*, *Tanagridæ*, *Dendrocolaptidæ*, *Formicariidæ*, *Strigiformes*, *Columbiformes*.]
42. BESSERER, F. VON. *Numenius arcuatus* L. als Brutvogel in Bayern. Ornith. Jahrb. xv, pp. 108-113. [*Charadriiformes*.]
43. BETHAM, R. M. Notes on birds-nesting from Poona. J. Bombay Soc. xv, pp. 709-712.
44. BIANCHI, V. Compte-rendu du Musée Zoologique de l'Académie Impériale des Sciences pour l'année 1902. Annuaire Mus. St. Petersb. viii, pp. 1-52, 1903. [*Corvidæ*, *Emberizidæ*, *Alaudidæ*, *Certhiidæ*, *Timeliidæ*, *Accipitriformes*.]
- 44A. —. Note sur les formes du genre *Dendrocoptes*. Op. cit. ix, pp. 1-4. [*Pici*.]
45. —. Revision des genres et des espèces de la famille *Accentoridæ*. T. c. pp. 108-156. [*Turdidæ*.]
46. —. Note préliminaire sur les formes paléarctiques orientales du genre *Alauda* Linn. T. c. pp. xxii-xxxi. [*Alaudidæ*.]
47. —. Key to the Palearctic species of Larks of the genus *Otocoris*. Ibis 1904, pp. 370-372. [*Alaudidæ*.]
48. —. Uebersicht der Formen der Gattung *Ithaginis* Wagler. [Translation by R. Schmidt.] J. Ornith. 1904, pp. 70-86.
49. —. On a new species of Bunting. Bull. B. O. C. xiv, p. 80. [*Fringillidæ*.]
50. BICKERTON, W. A review of Hertfordshire Ornithology. Tr. Hertfordsh. Soc. xii, pp. 26-32.
51. —. Notes on birds observed in Hertfordshire during the year 1902. T. c. pp. 33-40.
- 51A. BIEDERMANN, W. Die Schillerfarben bei Insekten und Vögeln. Denk. Ges. Jena 1904, pp. 215-300, Mit 16 Figuren im Text.
52. BIRTWELL, F. J. Observations on color changes in the genus *Buteo*, apparently due to aptosochromatism. Bull. Univ. New Mexico iii, No. 7, pp. 3-14 (1903). [*Accipitriformes*.]
53. BLAAUW, F. E. On the breeding of some of the Waterfowl at Gooilust in the year 1903. Ibis 1904, pp. 67-75. [*Anseriformes*.]
54. BLASIUS, R. Gustav Radde [obituary]. J. Ornith. 1904, pp. 1-49 [portrait].

55. BLATHWAYT, F. L. "Xanthochroism" in the Greenfinch (*Ligurinus chloris*). Zoologist 1904, p. 32. [*Fringillidæ*.]
- 55A. —. Little Owl (*Athene noctua*) and Waxwing (*Ampelis garrulus*) in Lincolnshire. T. c. pp. 74 & 75. [*Strigiformes*, *Ampelidæ*.]
56. —. Notes on the birds found on the coast of Somerset. T. c. pp. 81-95.
57. *BOARDMAN, S. L. The Naturalist of Saint Croix. Memoir of George A. Boardman, a selection from his correspondence and published writings, notices of friends and contemporaries, with his List of Birds of Maine and New Brunswick. Bangor, Maine, 1903, 8vo, xv + 311 pp.
BOCAGE. [See BARBOZA (24).]
58. BONHOTE, J. L. The European Goldfinch (*Carduelis elegans*). Avicult. Mag. (2) iii, pp. 21-23, with coloured plate. [*Fringillidæ*.]
59. —. The Bahama Amazon Parrot (*Chrysotis bahamensis*). Op. cit. ii, pp. 239-241, cum tab. [*Psittaci*.]
- 59A. BOTEZAT, E. Geschmacksorgane und andere nervöse Endapparate im Schnabel der Vögel. Biol. Centrbl. xxiv, pp. 722-736.
BOURDILLON, T. F. [See FERGUSON, H. S. (175).]
60. BOUSSAC, P. H. Les Anséridés dans l'Égypte Pharaonique. Le Naturaliste (2) No. 421, pp. 209-211. [*Anseriformes*.]
61. BOWDISH, B. S. An abnormal bill of *Melanerpes portoricensis*. Auk xxi, pp. 53-55, pl. xi. [*Pici*.]
62. —. Mortality among young birds due to excessive rains. T. c. pp. 284-286.
63. BOWDITCH, H. A list of the Bermudian birds seen during July and August 1903. Amer. Natural. 1904, pp. 555-563.
64. BOWLES, J. N. Nesting of the Western Golden-crowned Kinglet (*Regulus satrapa olivaceus*) in Western Washington. Condor vi, pp. 163-165. [*Regulidæ*.]
BRAGANÇA, DOM CARLOS DE (King of Portugal). [See PORTUGAL (475B).]
65. BRAISLIN, W. C. Notes concerning certain birds of Long Island, N. Y. Auk xxi, pp. 287-289.
66. BRAUN, F. Ornithologisches aus Konstantinopel. Ornith. Monber. xii, pp. 17-21, 79-81, 118-122, 179-183.
67. —. Zugvogel und Florenwechsel. J. Ornith. 1904, pp. 443-454.
68. BRENINGER, G. F. San Clemente island and its birds. Auk xxi, pp. 218-223.
69. BROOKS, A. British Columbia notes. T. c. pp. 289-291.
70. BROWN, H. The Elf Owl (*Micropallas whitneyi*) in California. Condor vi, pp. 45-47. [*Strigiformes*.]
71. —. Masked Bob-white (*Colinus ridgwayi*). Auk xxi, pp. 209-213. [*Galliformes*.]
72. BROWNSON, W. H. Myrtle Warblers (*Dendraeca coronata*) wintering in Maine. Auk xxi, pp. 388-390.

73. BRUCH, C. Enumeración de una colección de Aves de las Provincias de Salta y Jujuy y descripción de un nuevo Tiránido. *Revist. Mus. La Plata* xi, p. 245. [*Tyrannidæ*.]
74. BRUNELLI, G. Sulle cause che hanno determinato la riduzione della laringe superiore e lo sviluppo della siringe negli uccelli. *Avicula* viii, pp. 1-6.
75. BRYAN, W. A. A monograph of Marcus Island. An account of its physical features and geology, with descriptions of the Fauna and Flora. Honolulu, 1903, 8vo, 140 pp. Aves, pp. 95-116. [*Lariformes*.]
76. —. Wilson's Snipe, *Gallinago delicata* (Ord.), in the Hawaiian Islands. *Condor* vi, p. 78. [*Charadriiformes*.]
77. BRYANT, O. Dates of nesting of Bermuda birds. *Auk* xxi, p. 91.
78. BUCHANAN, K. & R. M. On the measurements and weights of the eggs of the commoner *Charadriidæ*. *Zoologist* 1904, pp. 281-290. [*Charadriiformes*.]
79. BUCKERS, P. H. De Vogels van Nederland, 1903. 164 pp., 4 pls.
80. BUDGETT, J. S. Obituary. *Ibis* 1904, p. 311.
81. *BULLEN, F. T. Creatures of the Sea; being the life-stories of some Sea-birds, beasts and fishes. 8vo, London, 141 pp.
82. BULLER, W. L. On a new species of Owl from New Zealand. *Ibis* 1904, p. 639. [*Strigiformes*.]
- BUNNELL, A. S. [See STONE, W. (615).]
83. BUTLER, A. G. More attempts to breed the Tambourine Dove (*Tympanistria tympanistria*). *Avicult. Mag.* (2) ii, pp. 100 & 101. [*Columbiformes*.]
84. —. Notes on melanism and albinism in birds. *T. c.* pp. 242-245.
85. —. Notes on the nesting of the Red-headed or Dominican Cardinal (*Paroaria larvata*). *T. c.* pp. 267-269. [*Fringillidæ*.]
86. —. Characters in birds' wings. *T. c.* pp. 319 & 320.
87. —. The Orange-billed Tanager *Saltator aurantiirostris*. *T. c.* pp. 335-339, with coloured plate.
88. —. On the development of the adult colouring in the Yellow-billed Cardinal (*Paroaria capitata*) from S. America. *P. Zool. Soc. London* 1903, pp. 350 & 351. [*Fringillidæ*.]
89. BUTLER, A. L. On the migration of the Snow Bunting across the Atlantic. *Ibis* 1904, pp. 304 & 305. [*Fringillidæ*.]
90. BUTTERFIELD, W. RUSKIN. Bulwer's Petrel in Sussex. *Bull. B. O. C.* xiv, pp. 50 & 51. [*Procellariiformes*.]
- 90A. —. *Æstrelata fæa* from Madeira. *T. c.* p. 51. [*Procellariiformes*.]
91. —. Photographs of a Welsh Kite's nest, etc. *T. c.* p. 76.
92. —. On the characters of *Carthia familiaris*, *C. f. britannica*, and *C. f. brachydactyla*. *Ibis* 1904, pp. 306 & 307.
93. BUTURLIN, S. A. Über neue Formen der echten Stare. *Ornith. Jahrb.* xv, pp. 205-213. [*Sturnidæ*.]
94. —. On the geographical distribution of the True Pheasants. (Genus *Phasianus* sensu stricto.) *Ibis* 1904, pp. 377-414. [*Galliformes*.]

95. [BUTURLIN, S. A.] Mandschurischer Ringsfasan. Ornith. Monber. xii, pp. 3 & 4. [*Galliformes*.]
96. —. Turgaisches Rebhuhn, *Perdix arenicola*, n. sp. T. c. pp. 148 & 149. [*Galliformes*.]
97. —. The correct name of the Pacific Dunlin. Auk xxi, pp. 50–53. [*Charadriiformes*.]
98. —. A preoccupied generic name. T. c. p. 80. [*Alaudidæ*.]
99. CAMERON, J. On the origin of the epiphysis cerebri as a bilateral structure in the Chick. P. Scott. Micr. Soc. iv, pp. 11–17, 3 figg.
100. CAMPBELL, A. J. Remarks on certain *Melithrepti*. Emu iv, pp. 70 & 71. [*Meliphagidæ*.]
101. —. Another decade in Australian Oology. Emu iii, pp. 168–171.
102. *CAMPBELL, J. M. Notes on the Natural History of the Bell Rock. With an introduction by James Murdoch, late Secretary to the Board of Northern Lighthouses. Edinburgh, 1904, 8vo, xv + 112 pp.
103. CARLIER, E. WACE. The elastic tissue of the eye in birds. Brit. Med. J. 1904, ii, p. 740. Lancet 1904, ii, p. 538.
104. CARROLL, C. J. The Little Bunting (*Emberiza pusilla*) in England. Zoologist 1904, pp. 312 & 313. [*Fringillidæ*.]
105. CARTER, T. Birds occurring in the region of the North-west Cape. Part III. Emu iii, pp. 171–177 and 207–213. [*Ardeiformes*.]
107. —. The birds of Wongan Hills, West Australia. Op. cit. iv, p. 69.
108. *CHAPMAN, F. M. Color key to North American birds. Pp. vi + 312.
109. —. A new Grouse from California. Bull. Amer. Mus. xx, pp. 159–161. [*Galliformes*.]
110. —. List of birds collected in Alaska by the Andrew J. Stone Expedition of 1903. T. c. pp. 399–406.
- 110A. CHAPMAN, F. M. Birds' nests and eggs. New York, 1904, 8vo, 31 pp., with photographic illustrations.
111. CHARRINGTON, A. C. Notes on some birds of the White Nile. Avicult. Mag. (2) ii, pp. 315–318.
112. CHIGI, F. Contributo allo studio dell Avifauna Romana. Boll. Soc. Ital. (3) v, pp. 223–226.
113. —. Notizie Ornithologiche per la Provincia di Roma. T. c. pp. 58–64.
114. —. Gli uccelli del Lazio. Note al Manuale di Ornitologia Italiana del Conte Prof. E. Arrigoni degli Oddi. Avicula viii, pp. 121–126.
115. CHILDS, J. L. Curlew Sandpiper (*Erolia ferruginea*) in New Jersey. Auk xxi, p. 485. [*Charadriiformes*.]
116. CHUBB, E. C. Occurrence of the Bluethroat (*Cyanecula suecica*) near London. Zoologist 1904, pp. 262 & 263. [*Turdidæ*.]
117. CLARK, J. H. Curved-billed Thrasher (*Harporhynchus curvirostris*) and Palmer's Thrashers (*Harporhynchus curvirostris palmeri*). Auk xxi, pp. 214–217, pl. xviii, figg. 1 & 2. [*Mimidæ*.]

118. CLARKE, A. H. The birds of St. Vincent. West Ind. Bull. v, pp. 75-95.
119. CLARKE, S. R. Field-notes on birds obtained or observed at Bloemfontein, O. R. C., and at Ingogo, Natal, in 1901 and 1902. Ibis 1904, pp. 519-541.
120. CLARKE, W. EAGLE. On the migrations of the Starling (*Sturnus vulgaris*) and the Rook (*Corvus frugilegus*). Rep. Brit. Ass. 1903, pp. 291-304. [*Sturnidæ*, *Corvidæ*.]
121. —. On the occurrence of the Short-toed Lark (*Calandrella brachydactyla*) and the Lapland Bunting (*Calcarius lapponicus*) in the Outer Hebrides. Ann. Scott. Nat. Hist. 1904, pp. 206 & 207. [*Fringillidæ*, *Alaudidæ*.]
122. —. On the occurrence of the Little Bunting (*Emberiza pusilla*) in Orkney: an addition to the Scottish Avifauna. T. c. pp. 14-16. [*Fringillidæ*.]
123. —. Studies in Bird-migration. II. The results of observations made at the Kentish Knock Lightships in the autumn of 1903. Ibis 1904, pp. 112-142.
124. —. On the short-toed Lark in the Flannan Islands. Bull. B. O. C. xv, p. 11. [*Alaudidæ*.]
125. COCKS, A. H. Birds of Oxfordshire or Buckinghamshire. Zoologist 1904, pp. 34-36.
126. COLLIER, C. The Birds of the Island of Raasay. Ibis 1904, pp. 490-512.
127. COLTART, H. N. The occurrence of the Malay Fish-Owl (*Ketupa javanensis*) in Assam. J. Bombay Soc. xv, p. 719. [*Strigiformes*.]
128. *COOKE, W. M. Some new facts about the migration of birds. Yearb. U. S. Dep. Agric. 1903, pp. 371-386.
129. —. The effect of altitude on bird migration. Auk xxi, pp. 338-341.
130. —. Some new facts about the migration of birds. Condor vi, pp. 115-126.
- 130A. CORAINVILLE, E. C. DE. Observations sur les Guillemot Troïle (*Uria troile* Lath.) et Guillemot bridé (*Uria ringvia* Brünn.). Bull. Soc. Rouen (4) xxiii, pp. 30 & 31. [*Alciformes*.]
131. CORBIN, G. B. Wildfowl on the Hampshire Avon during the winter of 1903-04. Zoologist 1904, pp. 145 & 146.
132. CORDS, ELISABETH. Beiträge zur Lehre vom Kopfnervensystem der Vögel. Anat. Hefte. Arb. xxvi, pp. 49-100, pls. 1-4.
133. *COUES, E. Key to North American Birds. Containing a concise account of every species of living and fossil bird at present known from the continent north of the Mexican and United States Boundary, inclusive of Greenland and Lower California. With which are incorporated General Ornithology: an outline of the structure and classification of birds: and field Ornithology, a Manual of collecting and preserving birds. 2 vols., 1904.
134. COWARD, T. A. & OLDHAM, C. Notes on the birds of Anglesea. Zoologist 1904, pp. 7-29.
135. CRAIG, W. The voices of Pigeons. I. The voice of the Ring-Dove (*Turtur risorius*). Biol. Bull. vi, pp. 323 & 324.

- 135A. CRÉE, V. v. D. Viaje ornitológico por Andalucía (provincias de Sevilla, Huelva, y Granada) durante los meses de Abril, Mayo y Junio de 1902. Bol. Soc. espan. iii, pp. 366-383.
136. CSIKI, E. Positive Daten über die Nahrung unserer Vögel. Aquila xi, pp. 270-317, with map.
137. CSÖRGEY, T. Vorläufiger Bericht über die Landesuntersuchung der Saatkrahe. Aquila xi, pp. 353-359.
138. CURRIER, E. S. Summer birds of the Leech Lake region, Minnesota. Auk xxi, pp. 29-44. [*Podicipediformes*, *Lariformes*.]
139. DALGLEISH, G. Notes on the Indian *Anatidæ*. Zoologist 1904, pp. 447-451.
140. DAMIANI, G. Il nuovo Manuale di Ornitologia Italiana del Conte Dott. Ettore Arrigoni degli Oddi. Avicula viii, pp. 33-41.
141. DAWSON, W. L. The Birds of Ohio, a complete, scientific and popular description of 320 species of birds found in the State. With introduction and analytical keys by Lynds Jones. Columbus, 1903, 4to, xlvii + 671 pp., 80 coloured plates.
142. DEANE, R. Unpublished letters of John James Audubon and Spencer F. Baird. Auk xxi, pp. 255-259.
143. —. Extracts from an unpublished journal of John James Audubon. T. c. pp. 334-338.
144. DEGEN, E. Remarks on new species of Australian Magpies, *G. longirostris* Milligan, and *G. dorsalis* Campbell, with reflections on the revision of the genus *Gymnorhinæ* (sic) Hall. Emu iii, pp. 201-207. [*Laniidæ*.]
- 144A. D'HOLLANDER, F. Recherches sur l'oogenèse et sur la structure et la signification du noyau vitellin de balbiani chez les oiseaux. Arch. anat. micr. vii, pp. 115-180, pls. iv-vi.
145. DEWAR, D. Sexual colour-dimorphism in birds. J. Bombay Soc. xvi, pp. 27-36.
146. DOGGETT, W. Death of. Bull. B. O. C. xiv, p. 35. Obituary. Ibis 1904, p. 312.
147. DRESSER, H. E. On some rare or unfigured eggs of Palæarctic birds. Ibis 1904, pp. 106-111, pl. iii. [*Turdidæ*, *Fringillidæ*.]
148. —. On the late Dr Walter's Ornithological researches in the Taimyr Peninsula. T. c. pp. 228-235. [*Charadriiformes*.]
149. —. On some rare and unfigured eggs of Palæarctic birds. T. c. pp. 280-283, pl. vii. [*Turdidæ*, *Pycnonotidæ*, *Accipitriformes*, *Galliformes*.] T. c. pp. 485-489, pl. x. [*Sylviidæ*, *Motacillidæ*, *Oriolidæ*, *Muscicapidæ*, *Campophagidæ*, *Laniidæ*.]
150. DREWITT, F. D. Autograph letter of John Latham. Bull. B. O. C. xiv, p. 41.
151. —. Exhibition of drawings of British Birds' Eggs by William Jones. Id. t. c. p. 41.
152. DUBOIS, A. Synopsis Avium. Nouveau Manuel d'Ornithologie. Fascic. xvi & xvii, pp. 1171-1340. Title-page and index.
153. DUKE, H. J. Winter care of the Quail (*Colinus virginianus*). Pennsylv. Dep. Agric. i, No. 10, pp. 30 & 31. [*Galliformes*.]

154. DUTCHER, W. Supplement. Report of the A. O. U. Committee on the protection of North American birds for the year 1903. *Auk* xxi, pp. 97-208, pls. xii-xviii. [Cf. *Zool. Rec.* xl. Aves, p. 11, No. 180.]
155. DWIGHT, J. The exaltation of the subspecies. *Auk* xxi, pp. 64-66.
156. —. The rapidity of the wing-beats of birds. *T. c.* p. 286.
157. EASTMAN, C. R. Fossil plumage. *Amer. Natural.* 1904, pp. 666-672.
158. EATON, E. H. Spring bird migrations of 1903. *Auk* xxi, pp. 341-345.
159. EHMEKE, A. Beschreibung einiger neuer Lerchenarten aus den Museen von Sarajevo und Budapest. *Ann. Mus. Hungar.* ii, pp. 296-301. [*Alaudidae.*]
160. —. *Alauda cinerascens*, nom. emend. *J. Ornith.* 1904, p. 313. [*Alaudidae.*]
161. EIFRIG, G. Birds of Allegany and Garrett counties, Western Maryland. *Auk* xxi, pp. 234-250.
162. ELLIOT, E. A. S. Twenty years' record of the arrival of spring migratory birds in the neighbourhood of Kingsbridge. *Rep. Devon. Ass.* (2) vi, pp. 173-180.
163. ELLISON, A. Robin (*Erithacus rubecula*) nesting in a tree. *Zoologist* 1904, pp. 190 & 191. [*Turdidae.*]
164. ELMS, E. F. M. Observations and notes on birds in the neighbourhood of New Romney and Littlestone-on-Sea, May 16th-20th, 1902. *Zoologist* 1904, pp. 250-255.
165. —. Notes on the nesting of the Moorhen (*Gallinula chloropus*) and the Little Grebe (*Podiceps fluviatilis*) on the river Isis, Bablockhythe, Oxon, May 20th-24th, 1904. *T. c.* pp. 255-258.
166. EMERSON, W. O. The Farallone Islands revisited, 1887-1903. *Condor* vi, pp. 61-68.
167. ERLANGER, CARLO FREIHERR VON. Beiträge zur Vogelfauna Mitostafrikas mit besonderer Berücksichtigung vor Zoogeographie. *J. Ornith.* 1904, pp. 1-244, Taf. i-xviii. [*Accipitriformes, Strigiformes.*]
168. —. Neue afrikanische Arten. *Ornith. Monber.* xii, pp. 97 & 98. [*Galliformes, Columbiformes.*]
169. EVANS, A. H. The Birds of Cambridgeshire. Handbook to the Natural History of Cambridgeshire. Edited by J. E. Marr and A. E. Shipley, Cambridge, 1904, 8vo, viii+258 pp. Birds, pp. 75-99.
170. —. Field-notes on birds from the Western Pyrenees. *Ibis* 1904, pp. 452-456.
171. EVANS, G. H. The nidification of the Little Blue-winged Pitta (*Pitta cyanoptera*) in Upper Burma. *J. Bombay Soc.* xvi, pp. 171 & 172.
172. EVANS, W. Wryneck (*Iynx torquilla*) in East Lothian. *Ann. Scott. Nat. Hist.* 1904, p. 244. [*Pici.*]
173. FATIO, P. VICTOR. Faune des Vertébrés de La Suisse. Volume ii. Histoire naturelle des oiseaux. ii^{me} Partie; Gyrateurs, Sarcleurs, Échassiers, Hérodions, Lamellirostres, Totipalmes, Longipennes et Uropodes. Genève et Bale, 1904, 8vo. 841-1708 pp. Avec 1 planche en couleurs, hors texte, 120 figures originales, dans le texte, 23 tableaux et un 2^e appendice à la première partie. [Cf. *Zool. Rec.* xxxvi, Aves, p. 11, No. 199.]

174. FAWCETT, J. W. The Capercaillie (*Tetrao urogallus*). Tr. Weaverdale Club i, part ii, pp. 229-231. [*Galliformes*.]
175. FERGUSSON, H. S. The birds of Travancore, with notes on their nidification by T. F. Bourdillon. J. Bombay Soc. xv, pp. 654-673. Op. cit. xvi, pp. 1-18. [*Bucerotes*, *Podargi*, *Trogones*, *Psittaci*, *Accipitriformes*, *Columbiformes*.]
- 175A. FERRET, P. Influence tératogénique des lésions des enveloppes secondaires de l'œuf de Poule. Arch. anat. micr. vii, pp. 1-116, pls. i-iii.
176. FINLEY, W. L. Two Oregon Warblers (*Dendroica nigrescens* and *Geothlypis trichas arizela*). Condor vi, pp. 31-35 cum tab. [*Mniotiltidae*.]
177. —. The Lutescent Warbler (*Helminthophila celata lutescens*). T. c. pp. 131-133. [*Mniotiltidae*.]
178. —. The Black-headed Grosbeak (*Zamelodia melanocephala*). T. c. pp. 145-148. [*Fringillidae*.]
179. FINN, F. The Himalayan Goldfinch (*Carduelis caniceps*). Avicult. Mag. (2) iii, pp. 24-26, pl. to p. 21, fig. 2. [*Fringillidae*.]
180. —. The Summer or Carolina Duck (*Æx sponsa*). Op. cit. ii, pp. 89-94 with coloured plate. [*Anseriformes*.]
181. FINSCH, O. Notiz über die Wollhalsstörche (*Dissoura*). Ornith. Monber. xii, p. 94. [*Ardeiformes*.]
182. — & BARTELS, M. Über eine neue Finkenart von Java. J. Ornith. 1904, pp. 122 & 123, Taf. A. [*Fringillidae*.]
183. FISHER, A. K. In memoriam: Thomas McIlwraith. Auk xxi, pp. 1-7, pl. i (portrait).
184. FISHER, W. K. Birds of Laysan and the Leeward Islands, Hawaiian Group. Bull. U. S. Fish Comm. 1903, pp. 1-30, pls. i-x.
185. —. On the habits of the Laysan Albatross (*Diomedea immutabilis*). Auk xxi, pp. 8-20, pls. ii-vii. [*Procellariiformis*.]
186. —. The home life of a Buccaneer. Condor vi, pp. 57-61. [*Pelecaniformes*.]
187. —. Three Boobies interviewed. T. c. pp. 89-94. [*Pelecaniformes*.]
188. —. Albatross pictures. T. c. pp. 151-159, figg. 1-11. [*Procellariiformes*.]
189. FLETCHER, J. A. Bird notes from Wilmot, Tasmania. Emu iv, pp. 14-17, pl. iii.
- 189A. FORBES, S. A. The food of birds. Bull. Illinois Lab. i, pp. 86-161.
190. FORD, J. B. C. Survey Camp notes, 1903-14th July. Emu iv, pp. 71-73.
191. FORREST, H. E. The birds of North-west Wales and South-east Ireland. Tr. Caradoc Club iii, pp. 92-97: No. 13, pp. 28-36.
192. FOSTER, N. H. The birds of a neighbourhood [Co. Down]. Irish Natural. xiii, pp. 53-55.
193. FOWLER, W. WARDE. The Marsh Warbler (*Acrocephalus palustris*) in Oxfordshire: a new position for the nest. Zoologist 1904, pp. 346 & 347. [*Sylviidae*.]
194. FRAISSE, P. Liste de quelques oiseaux étrangers a la région sud-est de la France qui y ont été observés en 1903. Ornith. xii, No. 4, p. 582.

195. FRITSCH, A. Notizen über die Vogelwelt der Elbeniederung bei Podiebrad in Böhmen. Ornith. Jahrb. xv, pp. 50-54.
196. FRITZE, A. Bastard von Birkhuhn und Fasan. Jahrb. Mus. Hannover 1904, pp. 1 & 2, Tafel vii. [*Galliformes*.]
197. FROHAWK, F. W. On the sexual variation in the Lapwing. Bull. B. O. C. xiv, p. 62. [*Charadriiformes*.]
198. —. On sexual variation in the wing of the Lapwing (*Vanellus vulgaris*). Ibis 1904, pp. 446-451. [*Charadriiformes*.]
199. FÜHRER, L. VON. Einige Beobachtungen über den Seidenschwanz in Siebenbürgen. Ornith. Jahrb. xv, pp. 48-50.
200. —. Ein Ausflug in das Negoi-Gebiet. T. c. pp. 56-62.
201. FULTON, H. T. Notes on the birds of Chitral (October 1901 to October 1902). J. Bombay Soc. xvi, pp. 44-64. [*Paridæ, Ploceidæ, Fringillidæ, Galliformes*.]
202. FULTON, R. The Kohoperoa or Koekoea Long-tailed Cuckoo (*Urodynamis taitensis*): an account of its habits, description of a nest containing its (supposed) egg, and a suggestion as to how the parasitic habit in birds has become established. Tr. New Zealand Inst. (2) xix, pp. 113-148. [*Cuculi*.]
- 202A. GADEAU DE KERVILLE, H. Note sur l'interessant plumage d'un Fou de Bassan (*Sula bassana* (L.)). Bull. Soc. Rouen (4) xxiii, pp. 367-369, pl. iii.
203. GALBRAITH, J. J. & SIMPSON, S. Temperature variation in nocturnal and other Birds. J. Physiol. xxx, p. xix.
GEAY, M. [See MENEGAUX, A. (388).]
204. GENGLER, J. *Erithacus cairii* zum letztenmal. Ornith. Monber. xii, pp. 21 & 22.
205. —. Zugbeobachtungen in Regensburg von 1774-1834. T. c. pp. 78 & 79.
206. —. Wiederum ein scheinbar brütender Kuckuck. Ornith. Jahrb. xv, pp. 148-151.
207. GEYR VON SCHWEPPEBURG, H. *Locustella luscinioides* (Savi) ein Brutvogel der Rheinprovinz. Ornith. Monber. xii, p. 145. [*Sylviidæ*.]
208. —. Kleine notizen zum Vogelzuge, 1903. J. Ornith. 1904, pp. 506-547.
209. GHIGI, A. Studi sul genere *Tragopan* Cuvier. Mem. Acc. Bologna (5) x, pp. 151-156, tav. 2. [*Galliformes*.]
210. —. Sui generi *Gallus* L. e *Creagrius* Gloger. Monit. Zool. ital. xiv, pp. 319-322. [*Galliformes*.]
211. GILL, E. L. The Condor's sense of smell. Tr. Nat. Hist. Northumb. (2) i, p. 40. [*Cathartiformes*.]
212. GILMAN, M. F. The Leconte Thrasher (*Toxostoma lecontei*). Condor vi, pp. 95-98. [*Mimidæ*.]
213. GLADSTONE, HUGH S. Note on the decrease in the weight of eggs as incubation advances. Ibis 1904, p. 376.
214. GODMAN, F. D. Biologia Centrali-Americana; or Contributions to the knowledge of the Fauna and Flora of Mexico and Central America. London, 1904, 4to, Aves, vol. iii. Parts clxxxi, clxxxii, clxxxiii, clxxxv,

- pp. 425-510, pls. lxxviii & lxxix. [*Procellariiformes*, *Colymbiformes*, *Podicipediformes*, *Alciiformes*, *Tinamiformes*.]
 Introduction, Title-pages and Contents (vols. i-iii), part clxxxv, pp. i-xliv.
215. *GOEBEL, H. Zur Ornithologie Lapplands und der Solowetzky'schen Inseln. Trav. Soc. St. Petersb. 1903, vol. 23, pp. 21-62.
216. GOELDI, E. A. A story about the Giant Goatsucker of Brazil. Ibis 1904, pp. 513-518. [*Caprimulgi*.]
217. GOODWIN, S. H. About the Utah Gull (*Larus californicus*). Condor vi, pp. 99 & 100. [*Lariformes*.]
218. —. Pelicans nesting at Utah Lake. T. c. pp. 126-129. [*Pelecaniformes*.]
219. GRANDIDIER, G. Note au sujet du squelette de l'*Æpyornis ingens*. Bull. Mus. Paris 1903, pp. 318-323, cum figg. [*Æpyornithiformes*.]
220. GRANT, W. R. OGILVIE. On the Birds collected during a recent expedition through Somaliland and Abyssinia to Lake Tsana, with field-notes by the collector E. Degen. Ibis 1904, pp. 250-258, pls. v & vi. [*Oriolidae*, *Alaudidae*, *Capitones*, *Strigiformes*, *Accipitriformes*.]
221. —. On the trachea of *Phonygama purpureoviolacea*. Bull. B. O. C. xiv, pp. 40 & 41. [*Paradisidae*.]
222. —. Description of two new species from Fernando Po. T. c. pp. 55 & 56. [*Sylviidae*, *Cypseli*.]
223. —. Remarks on *Pipile nattereri*. T. c. pp. 60 & 61. [*Galliformes*.]
224. —. Sabine's Gull near Christchurch. T. c. p. 63. [*Lariformes*.]
225. —. Asserted breeding of the Goshawk in Gloucestershire. T. c. p. 74. [*Accipitriformes*.]
226. —. On a new species of *Pterythius* from South China. T. c. pp. 91 & 92. [*Timeliidae*.]
227. —. On a new *Trochalopteron* from Karennee. T. c. pp. 92 & 93. [*Timeliidae*.]
228. —. On the species of *Xenicus*. Op. cit. xv, p. 15. [*Xeniscidae*.]
229. GRAVES, F. S. Great Grey Shrike (*Lanius excubitor*) in Cheshire. Zoologist 1904, p. 31. [*Laniidae*.]
 GRAY, G. [See WEBB, S. (662).]
230. GRINNELL, J. The status of *Melospiza lincolni striata* Brewster. Auk xxi, pp. 274-276. [*Fringillidae*.]
231. —. The origin and distribution of the chestnut-backed Chickadee. T. c. pp. 364-382, maps i-iii. [*Paridae*.]
232. —. The Ashy Kinglet (*Regulus calendula cineraceus*). Condor vi, p. 25. [*Regulidae*.]
233. —. Midwinter birds at Palm Springs, California. T. c. pp. 40-45.
 —. [See also ANDERSON & GRINNELL (7).]
234. GROTE, H. Über *Parus pallidus*. J. Ornith. 1904, p. 307. [*Paridae*.]
235. —. Spekulationen über Nordische Blaumeisenformen. Ornith. Monber. xii, pp. 175-177. [*Paridae*.]
236. GRÜNWARD, J. Plethysmographische Untersuchungen über die Athmung der Vögel. Arch. Physiol. 1904, Suppl. pp. 182-192, 14 figg. 1904. [VOL. XLI.]

237. GRUVEL, A. Description d'un œuf à double enveloppe. Pr. verb. Soc. Sci. Bordeaux 1900-1901, pp. 20-23.
- 237B. —. Sur un cas spécial d'œuf tératologique. T. c. pp. 72-76.
238. GÜNTHER, A. Exhibition of hybrid pheasants. P. Zool. Soc. London 1904, ii, pp. 129 & 130. [*Galliformes*.]
239. —. On the breeding in captivity of the Red-backed Shrike (*Lanius collurio*). Avicult. Mag. (2) ii, pp. 339-346. [*Laniidæ*.]
240. GURNEY, J. H. Ornithological notes from Norfolk and the East coast of England for 1903. Zoologist 1904, pp. 201-219.
241. —. On the birds of the Pembrokeshire Islands. Tr. Norfolk Soc. vii, pp. 627-634.
242. — & SOUTHWELL, T. Fauna and flora of Norfolk. T. c. (Birds), pp. 733-740.
243. GYNGELL, W. Late breeding of the Martin (*Chelidon urbica*). Zoologist 1904, p. 73. [*Hirundinidæ*.]
244. —. The singing haunts and habits of some British Birds. T. c. pp. 445 & 446.
245. HAIGH, G. H. CATON. Migration of birds in North-east Lincolnshire in the Autumn of 1903. Zoologist 1904, pp. 291-300.
246. HALL, R. The birds of a garden in Melbourne. Ibis 1904, pp. 218-222.
247. —. Description of a new subspecies of *Mirafra*. Emu iii, pp. 231 & 232. [*Alaudidæ*.]
- [See also HARTERT, E. (258).]
248. HALLIBURTON, W. D. The influence of Adrenalin on the nitrogenous metabolism of the Bird. Brit. Med. J. 1904, i, p. 549.
249. HAMOND, C. A. A short trip to Spain, with notes on birds observed. Tr. Norfolk Soc. vii, pp. 701-705.
250. HANNA, W. C. Nevada notes. Condor vi, pp. 47 & 48, 76 & 77.
251. HANTZSCH, B. Der islandische Leinfink. Ornith. Monber. xii, pp. 32-34. [*Fringillidæ*.]
252. —. Über die Stimmlaute von *Gallinago gallinago* (L.). T. c. pp. 173-175. [*Charadriiformes*.]
253. HARPER, E. H. The fertilization and early development of the Pigeon's Egg. Amer. J. Anat. iii, pp. 349-386, 4 pls., 6 diagrams.
254. HARRINGTON, H. H. Notes on the nesting of some birds in the Upper Chindwin District, Burma. J. Bombay Soc. xvi, pp. 166-169.
255. HARTERT, E. Die Vögel der paläarktischen Fauna. Systematische Übersicht der in Europa, Nord-Asien und der Mittelmeerregion vorkommenden Vögel. Berlin, 1904, 8vo, Helf ii, pp. 113-240, Mit 22 Abbildungen. [Cf. Zool. Rec. XL, Aves, p. 15, No. 275.] [*Fringillidæ*, *Alaudidæ*.] Cf. REICHENOW, J. Ornith. 1904, pp. 309-312.
256. —. The Birds of the South-west Islands, Wetter, Roma, Kisser, Letti, and Moa. Nov. Zool. xi, pp. 174-221. [*Columbiformes*, *Ralliformes*, *Accipitriformes*, *Strigiformes*, *Halcyones*, *Caprimulgi*, *Cuculi*, *Muscicapidæ*, *Turdidæ*, *Sylviidæ*, *Laniidæ*, *Zosteropidæ*, *Nectariniidæ*, *Meliphagidæ*, *Ploceidæ*, *Oriolidæ*, *Eulabetidæ*.]

257. [HARTERT, E.] *Miscellanea Ornithologica*. Part i. Critical, nomenclatorial and other notes, mostly on Palæarctic Birds. T. c. p. 456. [*Fringillidæ*.]
258. —. On the birds collected by Mr Robert Hall, of Melbourne, on the banks of the Lena River between Gigalowa and its mouth. With an introduction and field-notes by Robert Hall. *Ibis* 1904, pp. 415–446.
259. —. Some anticriticisms. T. c. pp. 542–551. [*Alaudidæ*, *Pycnonotidæ*.]
260. —. On a new species of *Dicæum* from Mindanao. *Bull. B. O. C.* xiv, p. 8. [*Diceidæ*.]
261. —. Remarks on rare Australian species of Birds. T. c. p. 10. [*Muscicapidæ*, *Sylviidæ*, *Certhiidæ*, *Meliphagidæ*, *Laniidæ*, *Paridæ*.]
262. —. A new subspecies of *Certhia* from Cyprus. T. c. pp. 50 & 51. [*Certhiidæ*.]
263. —. On the Dipper of Sardinia. T. c. p. 51. [*Cinclidæ*.]
- 263A. —. On birds from the Canary Islands. T. c. p. 51. [*Fringillidæ*, *Sylviidæ*.]
264. —. On a new *Zosterops* from the Solomon Islands. T. c. p. 61. [*Zosteropidæ*.]
265. —. On new species of birds from Angola and Mindanao. T. c. pp. 72–74. [*Sylviidæ*, *Muscicapidæ*, *Hirundinidæ*, *Timeliidæ*.]
266. —. Nest and eggs of *Pratincola dacotie*. T. c. p. 79.
267. —. Eggs of *Parus montanus kleinschmidti*. T. c. p. 79. [*Paridæ*.]
268. —. New species from the Philippine Isl. T. c. pp. 79 & 80. [*Diceidæ*, *Muscicapidæ*.]
269. —. Antikritik. *J. Ornith.* 1904, pp. 555–563.
270. —. *Genera Avium*. I. 4to, 1904. [*Eurylæmiformes*.]
271. —. Einige nomenklatorische Betrachtungen. *Zool. Anz.* xxviii, No. 4.
272. HARVIE-BROWN, J. A. Approaching extinction of the Osprey in Scotland. *Ibis* 1904, p. 664.
- 272A. —. On the nomenclature of the Barn-owls. T. c. pp. 664 & 665.
273. —. Heron (*Ardea cinerea*) nesting in the Outer Hebrides. *Ann. Scott. Nat. Hist.* 1904, p. 57. [*Ardeiformes*.]
274. —. Great Grey Shrike in "Forth" (*Lanius excubitor*). T. c. p. 244. [*Laniidæ*.]
275. —. Migration in 1903. *Zoologist* 1904, pp. 115 & 116.
276. — & MACPHERSON, H. A. A Fauna of the North-west Highlands and Skye. Edinburgh, 1904, 8vo, cvi+380 pp. with map and illustrations. *Aves*, pp. 49–361.
277. HAUER, B. Lebensweise und landwirthschaftliche Bedeutung der Saatkrähe auf meinem Landgute bei Kisharta (Mit 1 Karte). Mit Vorwort von O. Herman. *Aquila* xi, pp. 318–327.
278. HEAD, A. Nesting habits of the Black-headed Grosbeak (*Zamelodia melanocephala*). *Condor* vi, pp. 35–37. [*Fringillidæ*.]
279. HEGYFOKY, K. Das Wetter zur Zeit des massenhaften Wegzuges der Rauchschwalbe im Jahre 1898. *Aquila* xi, pp. 250–256. [*Hirundinidæ*.]

HELLER, E. [See SNODGRASS & HELLER (609).]

280. HELLMAYR, E. C. Beschreibung einer neuen *Phlegopsis*-Art aus Brasilien. Ornith. Monber. xii, pp. 53-55. [*Formicariidæ*.]
281. —. Über *Iynx ruficollis* Wagl. J. Ornith. 1904, pp. 307 & 308. [*Pici*.]
282. —. Five new species of South American birds. Bull. B. O. C. xiv, pp. 51-55. [*Dendrocolaptidæ*, *Formicariidæ*, *Tyrannidæ*.]
283. —. On *Pipile pipile* and *Copurus funebris*. T. c. pp. 59-61. [*Galliformes*, *Tyrannidæ*.]
284. —. Über neue und wenig bekannte Fringilliden Brasiliens, nebst Bemerkungen über Änderungen in der Nomenklatur einiger Arten. Verh. Ges. Wien liv, pp. 516-537. [*Fringillidæ*.]
285. —. Bericht über die Leistungen in der Naturgeschichte der Vögel während des Jahres 1895. Arch. Naturg. 1896. (Ausgegeben im Dezember 1904), pp. 1-84.
286. HELM, F. Weitere Beiträge zu der Gätkeschen Hypothese über den Zug der Vögel nach Alter und Geschlecht. J. Ornith. 1904, pp. 50-69.
287. —. Ornithologische Beobachtungen. T. c. pp. 411-431.
288. HELMS, O. Fortsatte ornithologiske Meddelelser (1903) fra Gronland. Vid. Medd. 1904, pp. 79-135. Review, HAASE, Ornith. Monber. xii, pp. 65-72.
289. —. Nachtigall und Sprosser. T. c. pp. 58-60. [*Turdidæ*.]
290. HENDERSON, J. Additional list of Boulder County Birds, with comments thereon. Stud. Univ. Colorado ii, pp. 107-112.
291. HENNICKE, C. K. Naumann's Naturgeschichte der Vögel Mittel-Europas. Gera-Untermhaus, 1904, 4to, Lief. 143-149 b.
292. HEPBURN, T. The birds of North Kent. Zoologist 1904, pp. 161-179.
293. HERMAN, O. Nahrung der Vögel. (Bericht für den iv. Internat. Ornithologischen Congress zu London.) Aquila xi, pp. 257-269.
294. —. Vom Blick des Vogels. T. c. pp. 360-366.
295. —. *Nisaetus fasciatus* (Vieill.) in der ungarischen Fauna. T. c. pp. 367 & 368, Tabula 1. [*Accipitriiformes*.]
— [See also HAUER, B. (277).]
296. HESSE, E. Beobachtungen in den Gundorfer Sümpfen bei Leipzig. Ornith. Monber. xii, pp. 137-141.
297. HILL, H. E. Notes from Guildford, West Australia. Emu iii, pp. 226-229.
- 297A. HILLEL, E. Ueber die Vorderextremität von *Eudyptes chrysocome* und deren Entwicklung. Jena. Zeitschr. (2) xxxi, pp. 725-770, Tafel xxiv & xxv. [*Sphenisciformes*.]
298. *HOFFMANN, R. A guide to the birds of New England and Eastern New York, containing a key for each season and short descriptions of over 250 species with particular reference to their appearance in the field. Boston and New York, 1904, 12mo, xiii+357, pp. iv pls.
- HOLLISTER, N. [See KUMLIEN, L. (341*).]
299. HORSBRUGH, C. B. Some field notes in South Africa. Avicult. Mag. (2) ii, pp. 94-99. [*Ploceidæ*.]

300. HOWARD, H. E. Richard's Pipit (*Anthus richardi*) in Cornwall. Zoologist 1904, p. 115. [*Motacillidæ*.]
301. HOWARD, R. J. Nesting of the Long-eared Owl (*Asio otus*) on the ground. Zoologist 1904, pp. 259-261. [*Strigiformes*.]
302. HUGHES, G. B. Note on birds now rare in the British Isles. Rep. Brit. Ass. 1903, p. 696. [*Ardeidæ*, *Gruiformes*.]
- 302A. HUGUES, A. De l'adoption des œufs étrangers chez les Oiseaux. Bull. Soc. Nîmes xxxi, pp. 44-47.
303. HUNTER, J. S. Records from the vicinity of Watsonville, California. Condor vi, pp. 24 & 25.
304. HUTTON, F. W. Index Faunæ Novæ Zealandiæ. London, 1904, 8vo, viii+372 pp. Aves, pp. 27-39.
305. IHERING, H. VON. Estudio comparativo das Avifaunas do Paraguay e de S. Paulo. Revist. Mus. Paulista vi, pp. 310-384.
- 305A. —. Aves do Rio Juruá. T. c. pp. 430-452. [*Troglodytidæ*, *Tyrannidæ*, *Dendrocolaptidæ*, *Formicariidæ*.]
306. —. The biology of the *Tyrannidæ* with respect to their systematic arrangement. Auk xxi, pp. 313-322.
307. INGLIS, C. M. The birds of the Madhubani sub-division of the Darbhanga District, Tirhut, with notes on species noticed elsewhere in the district. Part viii. J. Bombay Soc. xvi, pp. 70-75.
308. JACKSON, F. J. On a new *Macronyx* from Mau. Bull. B. O. C. xiv, p. 74. [*Motacillidæ*.]
309. —. On a new species of Sunbird from Ruwenzori. T. c. p. 94. [*Nectariniidæ*.]
310. —. On two new species of birds from Equatorial Africa. Op. cit. xv, p. 11. [*Muscicapidæ*, *Sylviidæ*.]
- 310A. JACOBI, A. Die Aufnahme von Steinen durch Vögel. Arb. Biol. Land and Forst. Berlin i, pp. 223-255. [1900.]
311. *JACOBS, J. W. Gleanings, No. iii. The haunts of the Golden-winged Warbler (*Helminthophila chrysoptera*). With notes on migration, nest-building, song, food, young, eggs etc. Waynesburg, Pa. 1904, 8vo, 30, pp. 5 pls.
312. —. Notes on the Purple Martin (*Progne subis*) and bird houses for its summer home. Pennsylv. Dep. Agric. i, No. 10, pp. 27-30 pls. i & ii. [*Hirundinidæ*.]
313. JÄGERSKIÖLD, L. A. Birds from the White Nile. Swedish Zoological Expedition to Egypt and the White Nile 1901. Upsala, 1904, pt. i. Aves, pp. 1-18.
314. JAMMES, L. Zoologie pratique basée sur la dissection des animaux les plus répandus. Paris, 1904, 8vo, vi+563 pp., text-figg. 317, Oiseaux, pp. 452-485, figg. 264-281.
315. JARDINE, F. L. The Nutmeg (Torres Strait) Pigeon (*Carpophaga luctuosa*). Emu iii, pp. 181-185. [*Columbiformes*.]
316. JOHANSEN, H. Wichtigere Ergebnisse während der Jahre 1900-1903 im Gouvernement Tonsk ausgeführter ornithologischer Beobachtungen. Ornith. Jahrb. xv, pp. 81-93.

317. [JOHANSEN, H.] Vorläufiger Bericht über eine Sommer 1902 in die Kulundinsche Steppe und die angrenzenden Teile des Ssemipalatinsker Gebietes unternommene Reise. T. c. pp. 161-205.
318. JOHNSON, A. W. Notes on unusual nesting sites of the Pacific Yellow-throat (*Geothlypis trichas arizela*). Condor vi, pp. 129-131. [*Mniotiltidae*.]
319. JOHNSTONE [Mrs]. The nesting of Fraser's Touracou (*Turacus macrorhynchus*). Avicult. Mag. (2) iii, pp. 26-29 cum. fig. [*Musophagi*.]
320. JONES, L. The birds of Ohio. A revised catalogue. Ohio State Acad. Sci., Special Papers, No. 6, 141 pp. with map.
See also DAWSON (141).
321. —. Nestling and juvenile plumages of *Sterna hirundo* and *S. dougalli*. Biol. Bull. vi, pp. 318 & 319.
JONES, WILLIAM. [See DREWITT, F. D. (151).]
322. JOURDAIN, F. C. R. Rough notes on Derbyshire Ornithology, 1902-1903. Zoologist 1904, pp. 103-107.
323. —. Unusual nesting-site of the Nuthatch (*Sitta cæsia*) in Dorset. T. c. p. 384. [*Sittidae*.]
324. —. On the nesting habits of the Pied Wagtail (*Motacilla lugubris* Temm.). T. c. pp. 421 & 422, 456 & 457. [*Motacillidae*.]
325. JUDD, S. D. The economic value of Bobwhite (*Colinus virginianus*). Yearb. U. S. Dep. Agric. 1903, pp. 193-204, pl. xvi. [*Galliformes*.]
326. KEARTLAND, G. A. Ornithological notes—the Grass-Wrens (*Amytornis*). Victorian Natural. xx, pp. 133-139. [*Sylviidae*.]
327. KERSHAW, J. C. List of the Birds of the Quangtung coast, China. Ibis 1904, pp. 235-248.
328. KILGOUR, J. F. A trip to the Ord river (N. W. A.). Emu iv, pp. 37-43, pls. iv-vi.
329. KINNEAR, N. B. Notes on some birds observed in the Loch Arkaig district, Western Inverness-shire. Ann. Scott. Nat. Hist. 1904, pp. 150-154.
330. KLEINSCHMIDT, O. Über die geographische Verbreitung und den Zug der rosternigen Blaukelchen. J. Ornith. 1904, pp. 302-306. [*Turdidae*.]
331. —. Einiges über Spatzen. Ornith. Monber. xii, p. 7. [*Fringillidae*.]
332. —. Ein streit um namen? T. c. pp. 42-46. [*Turdidae*.]
333. —. Zur letztenmal *Erithacus cairii*. T. c. pp. 55 & 56. [*Turdidae*.]
334. —. Die wichtigsten Ergebnisse der zweitem algerischen Reise von E. Flückiger. T. c. pp. 196-198. [*Alaudidae*, *Turdidae*, *Fringillidae*.]
335. KOLLIBAY, P. Die Vogelfauna der Bocche di Cattaro. J. Ornith. 1904, pp. 80-121. [*Turdidae*.]
336. —. Vogelfauna der Bocche di Cattaro. T.c. pp. 457-506.
337. —. *Stercorarius parasiticus* in Tunis. Ornith. Monber. xii, p. 101. [*Lariformes*.]
338. KOPMAN, H. H. Bird migration phenomena in the extreme Lower Mississippi valley. Auk xxi, pp. 45-50.

339. KORMÓS, T. Versuch einer Avifauna der Umgebung von Ménés-Magyarád in Ungarn. Ornith. Jahrb. xv, pp. 24-36.
340. KRAUSE, G. Die Eier von *Larus ridibundus* L. im Lichte meiner spezial Sammlung. Ornith. Monber. xii, pp. 122-127. [*Lariformes*.]
- 341*. KUMLIEN, L. & HOLLISTER, N. The birds of Wisconsin. Bull. Wisconsin Soc. (2) iii, pp. 1-143, pls. i-viii.
342. LAIDLAW, T. G. Report on the movements and occurrence of birds in Scotland during 1902. Ann. Scott. Nat. Hist. 1904, pp. 207-217.
343. ——. Report on the movements and occurrence of birds in Scotland during 1903. T. c. pp. 158-160.
344. LAMEERE, A. L'évolution des ornements sexuels. Bull. Ac. Belgique xii, pp. 1327-1364.
- 344A. LAMPE, E. Katalog der Vogel-Sammlung des naturhistorischen Museums zu Wiesbaden. Jahrb. nassau. Ver. lvii, pp. 195-275.
- LATHAM, JOHN. [See DREWITT, F. D. (150).]
345. LEGGE, W. V. Some rectifications in Tasmanian Ornith. Emu iii, pp. 179-181. [*Sylviidae*, *Cypseli*.]
346. LE ROI, OTTO. Die Verbreitung von *Emberiza cia* L. in der Rheinprovinz. Ornith. Monber. xii, pp. 153-158. [*Fringillidae*.]
347. LE SOUËF, D. The extinct Tasmanian Emu (*Dromæus ater*). Emu iii, pp. 229-231. [*Struthioniformes*.]
348. LETACQ, A. L. Notes sur quelques Oiseaux du département de l'Orne, rédigées d'après la collection et les manuscrits de M. Abel Martin, de Bellême. Bull. Soc. Normandie (5) vii, pp. 72-92.
- 348A. ——. Sur les migrations du Corbeau Choucas (*Corvus monedula*) dans le département de l'Orne. Bull. Soc. Rouen (4), xxiii, pp. 27-29. [*Corvidæ*.]
- 348B. ——. L'Odicnème dans les plaines de Chambois et de Montmerrei (Orne). T. c. pp. 319-321. [*Charadriiformes*.]
349. LEVERKÜHN, P. Notice biographique sur le Comte Amédée Alléon. Ornith. xii, No. 4, pp. 573-581.
350. LINDNER, F. Im Brutgebiete der schwarzschwänzigen Limose und des schwarzen Storches. Ornith. Jahrb. xv, pp. 11-24.
351. ——. Zum letztwintrigen Erscheinen des Seidenschwanzes. Ornith. Monber. xii, pp. 96 & 97. [*Ampelidæ*.]
352. LITTLEJOHN, C. The capture of *Totanus glareola* in Alaska. Condor vi, p. 138. [*Charadriiformes*.]
353. LITTLER, F. M. From a Tasmanian notebook. Emu iii, pp. 213-217.
- 353A. ——. The school in wild life. Op. cit. iv, pp. 57-59.
354. ——. Tasmania: ornithologically considered. Zoologist 1904, pp. 321-338.
355. LISTON, W. G. Note on sexual dimorphism. J. Bombay Soc. xvi, pp. 39-42.
356. LÖNNBERG, E. On the homologies of the different pieces of the compound rhamphotheca of birds. Arkiv Zool. i, pp. 479-512, text-figg. 1-13.

357. [LÖNNBERG, E.] Ein Beitrag zur Kenntnis der geographischen Variation des Birkwilds (*Tetrao (Lyrurus) tetrix* L.). Ornith. Monber. xii, pp. 105–109. [*Galliformes*.]
358. —. Habits of the Willow Grouse. Zoologist 1904, pp. 430 & 431.
359. LOOS, K. Eine Grünspechtbeobachtung. Ornith. Jahrb. xv, pp. 151–153.
360. LORENZ, TH. *Lagopus albus* (L.) n. subsp. *major*. Ornith. Monber. xii, pp. 177–178. [*Galliformes*.]
361. LOUDON, H., Baron. Über zwei neue palaearktische Formen. Ornith. Jahrb. xv, pp. 54–56. [*Strigiformes*, *Hirundinidæ*.]
362. LUCAS, F. A. A skeleton of *Hesperornis*. Smithson. Collect. xlv, p. 95, pl. xxvii. [*Hesperornithiformes*.]
363. LUCIFERO, A. Brevi osservazioni su poche specie di uccelli sedentari o di passaggio in Calabria enumerate dal sig. Conte Arrigoni degli Oddi nel suo Manuale di Ornitologia Italiana. Avicula viii, pp. 77–82.
364. MACKAY, H. Bird-life in Jersey. Zoologist 1904, pp. 339–344, 378–382. [*Anseriformes*.]
- MACPHERSON, H. A. [See HARVIE-BROWN, J. A. (276).]
366. MADARASZ, J. VON. Über neue formen von *Halcyon smyrnensis* und *Alcedo ispida*. Ann. Mus. Hungar. ii, pp. 1 & 2. [*Halcyones*.]
367. —. Neue Vogelarten aus Venezuela. T. c. pp. 115 & 116, Taf. xii. [*Galliformes*, *Strigiformes*, *Troglodytidæ*.]
368. —. Zur Ornith. deutsch-Ostafrikas. T. c. pp. 203–206. [*Timeliidæ*, *Sylviidæ*, *Laniidæ*, *Indicatores*.]
369. —. An extraordinary discovery in ornithology. T. c. pp. 396–398 with 3 text-figg. [*Motacillidæ*.]
370. —. Über die Vögel Cyperns. T. c. pp. 499–501, Taf. xv. [*Sturnidæ*.]
371. —. Ueber eine wahrscheinlich neue Form der Nebelkrähe. Ornith. Monber. xii, pp. 28 & 29. [*Corvidæ*.]
372. —. *Cisticola humilis*, n. sp. T. c. p. 168. [*Sylviidæ*.]
373. —. *Spiloptila reichenowi*, n. sp. Id. t. c. p. 179. [*Sylviidæ*.]
374. —. *Sitta bifasciata*, n. sp. T. c. pp. 183 & 184. [*Sittidæ*.]
375. —. Die Ceylon-Krähe. T. c. pp. 195 & 196. [*Corvidæ*.]
376. —. *Montifringilla margaritacea*, n. sp. Id. t. c. p. 196. [*Fringillidæ*.]
377. MAILLARD, J. A few records supplementary to Grinnell's Check-list of California birds. Condor vi, pp. 14–16.
378. MARQUAND, E. D. The birds of Alderney. Rep. Guernsey Soc. 1903, pp. 238–244.
379. MARINUZZI, T. *L'Aëdon lusciniæ* (Linn.) in Sicilia. Avicula viii, pp. 17–20. [*Sylviidæ*.]
380. MARTIN, R. Die vergleichende Osteologie der Columbiformes unter besonderer Berücksichtigung von *Didunculus strigirostris*. Ein Beitrag zur Stammesgeschichte der Tauben. Zool. Jahrb. xx, pp. 167–352, Taf. 11–12 und 96 Abbildungen im Text. [*Columbiformes*.]

381. MASCHA, E. Über die Schwungfedern. Zeitschr. wiss. Zool. lxxvii, pp. 606-651, Taf. xxix-xxxi und 9 Figuren im Text.
382. MAZIMANN, E. Observations sur la nidification de quelques oiseaux. Ornith. xii, No. 4, pp. 569 & 570.
383. McCLYMONT, J. R. Notes on a few birds, chiefly migratory and nomadic, observed in the vicinity of Hobart. Zoologist 1904, pp. 307-310.
McDAKIN [Captain]. [See WEBB, S. (662).]
384. MCGREGOR, R. C. Birds from Benguet Province, Luzon, and from the islands of Lubang, Mindoro, Cuyo, and Cagayancillo. Bull. Philippine Mus. No. 3, pp. 1-16.
385. —. The Birds of Calayan and Fuga, Babuyan Groups. Op. cit. No. 4, pp. 1-34. [*Galliformes*, *Columbiformes*, *Gruiformes*, *Procellariiformes*, *Hirundinidae*, *Turdidae*, *Laniidae*, *Pycnonotidae*, *Fringillidae*, *Zosteropidae*.]
386. MEADE-WALDO, E. G. B. Nesting boxes for wild birds. Avicult. Mag. (2) ii, pp. 259-262.
387. MEARNS, E. E. Birds of Fort Custer, Montana. Condor vi, pp. 20 & 21.
388. MENEGAUX, A. Catalogue des Oiseaux rapportés par M. Geay de la Guyane française et du Contesté franco-brésilien. Bull. Mus. Paris 1904, pp. 107-119.
389. MEYER, A. B. Vögel von Südost Celebes. Notes Leyden Mus. xxiv, pp. 232-235. [*Zosteropidae*.]
390. MILLER, L. H. The birds of the John Day Region, Oregon. Condor vi, pp. 100-106.
- 391*. MILLER, O. T. With the birds in Maine. Boston and New York 1904, 16mo, ix+300 pp.
392. MILLIGAN, A. W. Observations on the Western *Gymnorhinæ*. Emu iii, pp. 177-179, pl. x. [*Laniidae*.]
393. —. Notes on a trip to the Wongan Hills, Western Australia, with a description of a new *Ptilotis*. T. c. pp. 217-226, pls. xiii-xv. [*Meliphagidae*.]
394. —. Description of a new Kestrel from Western Australia. Op. cit. iv, pp. 1 & 2. [*Accipitriformes*.]
395. —. Notes on a trip to the Wongan Hills, Western Australia. T. c. pp. 2-11, pls. i & ii.
396. —. Notes on some Western Australian and allied species. T. c. pp. 48-52. [*Laniidae*, *Muscicapidae*, *Meliphagidae*, *Sylviidae*.]
397. MITCHELL, P. CHALMERS. On the occasional transformation of Meckel's diverticulum in birds into a gland. P. Zool. Soc. London 1903, ii, pp. 352-354, text-figg. 44. [*Charadriiformes*.]
398. —. Exhibition and remarks on *Trachelotis barrovii*. P. Zool. Soc. London 1904, i, pp. 2 & 3. [*Charadriiformes*.]
399. MÖBIUS, K. Die Formen, Farben und Bewegungen des Vögel ästhetisch betrachtet. SB. Ak. Berlin viii, 1904, pp. 270-281.
400. MONTAGU, E. S. Photographs of Birds. Bull. B. O. C. xiv, p. 75.
401. —. On the nesting of *Acanthis rufescens* in Norfolk. T. c. p. 91. [*Fringillidae*.]

402. MORGAN, W. C. & TALLMON, M. C. A Fossil Egg from Arizona. Univ. Calif. publ. Geol. iii, pp. 403-410, pls. xlviii & xlix.
403. — & —. A peculiar occurrence of bitumen and evidence as to its origin. Amer. J. Sci. xviii, pp. 363-377.
404. MORRIS, R. Late appearance of the House-Martins (*Chelidon urbica*) at Eastbourne. Zoologist 1904, p. 32. [*Hirundinidæ*.]
- MURDOCH, J. [See CAMPBELL, J. M. (102).]
405. NEHRING, A. *Perdix barbata* (Verr. (*P. daurica*, Pall.) aus der Kirgisen-steppe. Ornith. Monber. xii, pp. 142 & 143. [*Galliformes*.]
406. NELSON, E. W. Descriptions of four new birds from Mexico. P. Soc. Washington xvii, pp. 151 & 152. [*Ralliformes*, *Tyrannidæ*, *Tanagridæ*, *Troglodytidæ*.]
407. —. Revision of the North American mainland species of *Myiarchus*. T.c. pp. 21-50. [*Tyrannidæ*.]
408. NELSON, T. H. British examples of the White-spotted Bluethroat (*Cyanecula wolfei*). Zoologist 1904, p. 31. [*Turdidæ*.]
409. NEUMANN, O. Vögel von Schoa und Süd Äthiopien. J. Ornith. 1904, pp. 321 etc. [*Anseriformes*, *Charadriiformes*, *Ralliformes*, *Columbiformes*, *Galliformes*, *Accipitriformes*, *Strigiformes*, *Psittaciformes*, *Cuculi*, *Capitones*, *Pici*, *Coli*.]
410. —. Über *Crateropus*. T. c. pp. 548-555. [*Timeliidæ*.]
411. —. Die Rotflügelglanzstare. T. c. pp. 567-569. [*Eulabetidæ*.]
412. —. Drei neue Formen aus Süd-Arabien. Ornith. Monber. xii, pp. 29 & 30. [*Nectariniidæ*, *Timeliidæ*, *Columbiformes*.]
413. —. Über einige Formen von *Turtur vinaceus* und *T. roseogriseus*. T. c. pp. 81-84. [*Columbiformes*.]
414. —. Über die afrikanischen gelbbäuchigen *Zosterops*-Formen. T. c. pp. 109-118. [*Zosteropidæ*.]
415. —. Neue afrikanische Vögel (Vorläufige Diagnosen). T. c. pp. 143-145. [*Caprimulgi*, *Hirundinidæ*, *Oriolidæ*.]
416. —. Fünf neue Vögel von Nordost-Afrika. T. c. pp. 162-164. [*Zosteropidæ*, *Ploceidæ*, *Turdidæ*, *Sylviidæ*.]
417. NEWMAN, T. H. On some Turtle Dove hybrids and their fertility. Avicult. Mag. (2) ii, pp. 191-198, pls. i & ii. [*Columbiformes*.]
- 417A. NEWTON, A. Further discovery of Dodos' Bones. Nature lxx, p. 626.
418. NICOLL, M. J. Ornithological Journal of a voyage round the World in the 'Valhalla' (November, 1902 to August, 1903). Ibis 1904, pp. 32-67. [*Sylviidæ*.]
419. —. On a collection of Birds made during the cruise of the 'Valhalla' R. Y. S. in the West Indies (1903-4). T. c. pp. 555-591. [*Sylviidæ*, *Lariformes*, *Vireonidæ*, *Mniotiltidæ*, *Columbiformes*, *Procellariiformes*, *Tyrannidæ*, *Pelecaniformes*, *Turdidæ*, *Fringillidæ*.]
420. —. Cetti's Warbler in Sussex. Bull. B. O. C. xiv, p. 84. [*Sylviidæ*.]
421. —. *Motacilla borealis* in Sussex. T. c. p. 84. [*Motacillidæ*.]
422. —. On birds observed during the voyage of the 'Valhalla.' T. c. pp. 94-96. [*Psittaciformes*, *Tyrannidæ*, *Mniotiltidæ*, *Vireonidæ*.]
424. —. Tawny Pipit and Lapland Bunting in Sussex. Op. cit. xv, p. 12. [*Motacillidæ*, *Fringillidæ*.]

425. [NICOLL, M. J.] Broad-billed Sandpiper in Sussex. Id. t. c. p. 12. [*Charadriiformes*.]
426. —. Observations in natural history made during the voyage round the world of the R. Y. S. 'Valhalla,' 1902-3. Zoologist 1904, pp. 401-416.
427. —. The Tawny Pipit (*Anthus campestris*) as a visitor to England. T. c. pp. 452-454. [*Motacillidæ*.]
428. NINI, E. Sopra un esemplare di *Somateria spectabilis* L. ♀ colta in Laguna di Venezia. Avicula viii, pp. 159-161. [*Anseriformes*.]
429. NOBLE, H. Rare birds in Berkshire. Zoologist 1904, pp. 116 & 117. [*Alciiformes*, *Anseriformes*, *Accipitriformes*.]
430. NORTH, A. J. Nests and eggs of birds found breeding in Australia and Tasmania. Second edition of Catalogue No. xii, entirely re-written with additions. Australian Museum, Sydney. Special Catalogue No. i, Sydney, 1904, 4to, pp. 201-366, pls. A⁵-A⁸, B^v-B^{viii}. Cf. Zool. Rec. XL, Aves, p. 24, No. 465.
432. —. Description of a new species of *Pachycephala*. Rec. Austral. Mus. v, pp. 125 & 126. [*Laniidæ*.]
433. —. Description of the nest of the Guttated Bower-bird (*Chlamy-dodera guttata*, Gould). T. c. pp. 131 & 132, pl. xvi. [*Ptilonorhynchidæ*.]
434. —. On species of *Malurus*. Ibis 1904, p. 672. [*Sylviidæ*.]
435. OATES, E. W. On some new species of Silver-Pheasants from Burma. Ann. Nat. Hist. (7) xiv, pp. 283-287. [*Galliformes*.]
436. OBERHOLSER, H. A revision of the American Great Horned Owls. P. U. S. Mus. xxvii, pp. 177-192. [*Strigiformes*.]
437. —. A review of the Wrens of the genus *Troglodytes*. T. c. pp. 197-210, pl. v [map]. [*Troglodytidæ*.]
438. —. Description of a new African Weaver-bird. T. c. p. 683. [*Ploceidæ*.]
440. —. Description of two new birds from Somali Land. T. c. pp. 737-739. [*Accipitriformes*, *Meropes*.]
441. —. Monograph of the genus *Dendrocincla* Gray. P. Ac. Philad. 1904, pp. 447-463. [*Dendrocolaptidæ*.]
442. OGILVIE, F. M. On the Red-crested Pochard in Suffolk. Bull. B. O. C. xiv, p. 62. [*Anseriformes*.]
- OLDHAM, C. [See COWARD & OLDHAM (134).]
443. OLDYS, H. The rhythmical song of the Wood Pewee (*Contopus virens*). Auk xxi, pp. 270-274. [*Tyrannidæ*.]
444. OLSEN, R. J. Eier des Sperlingseule. Ornith. Monber. xii, pp. 60 & 61. [*Strigiformes*.]
445. OORT, E. D. VAN. Beitrag zur Osteologie des Vogelschwanzes. Leiden, 1904, 8vo, 144 pp., v Taf.
446. OSGOOD, W. H. A biological reconnaissance of the base of the Alaska Peninsula. North Amer. Fauna, No. 24. List of birds, pp. 51-81. [*Lariformes*, *Pelecaniformes*, *Anseriformes*, *Galliformes*, *Fringillidæ*, *Paridæ*.]

447. OTTO, B. Über *Phylloscopus viridanus* (Blyth) in den baltischen Provinzen Russlands. Ornith. Monber. xii, pp. 73-78. [*Sylviidæ*.]
448. OUSTALET, E. Description d'espèces d'Oiseaux rapportés par M. G.-A. Baer du Tucuman (République Argentine). Bull. Mus. Paris 1904, pp. 43-45. [*Tanagridæ*, *Dendrocolaptidæ*.]
449. —. Les oiseaux du Cambodge, du Laos, de L'Annam et du Tonkin. Arch. Mus. Paris (4) v, pp. 1-94, pls. v & vi (1903). [*Pittidæ*, *Pycnotidæ*, *Timeliidæ*.]
450. —. Les Pintades (*Numida*). Bull. Soc. d'Accl. France 1904, pp. 1-18. [*Galliformes*.]
451. PADDOCK, G. H. The oviposition in birds. Zoologist 1904, pp. 146 & 147.
452. PARKER, A. Notes on the birds of Lough Derg and its shores. Irish Natural. xiii, pp. 151-153.
453. PARKIN, T. Two Rook's eggs and one Moorhen's egg in the same nest. Zoologist 1904, p. 142. [*Ralliformes*.]
454. PARROT, C. Verhandlungen der ornithologischen Gesellschaft im Bayern (Fortsetzung der "Jahresberichte des ornithologischen Vereins München"). 1903. Band iv. München, 1904, 8vo, 184 pp. Mit 1 farbigen Tafel und 6 Abbildungen im Text.
455. —. Vom Liebesspiel der Bekassine (*Gallinago gallinago*). Ornith. Monber xii, pp. 37-41. [*Charadriiformes*.]
PATERSON, D. R. [See PROGER & PATERSON (480).]
456. PATERSON, J. The Ruby-crowned Wren in Lat. 53°24' N., Long. 30°15' W. Ann. Scott. Nat. Hist. 1904, p. 55. [*Regulidæ*.]
457. *PATTERSON, A. H. Notes of an East Coast Naturalist. London, 1904, 8vo.
458. —. Natural history notes from Yarmouth. Tr. Norfolk Soc. vii, pp. 726-730.
459. PATTERSON, R. Waxwings (*Ampelis garrulus*) in the North of Ireland. Zoologist 1904, p. 31. [*Ampelidæ*.]
- 459A. PAVECI, P. Esquisse d'une Faune Valdotaïne. Atti Soc. Ital. xliii, pp. 193-260. [Oiseaux, pp. 209-213.]
460. PAYNE, J. W. A question of interest in the life of the Cuckoo (*Cuculus canorus*). Zoologist 1904, p. 74. [*Coccyges*.]
461. PEARCE, G. W. Photographs of birds. Bull. B. O. C. xiv, p. 76.
462. PEARSON, CHARLES. The Twite breeding in North Devon. Bull. B. O. C. xiv, p. 91. [*Fringillidæ*.]
463. PEARSON, H. J. Three summers among the birds of Russian Lapland. London, 1904, 8vo, xvi+216 pp., 68 pls. and map.
464. —. Eggs of *Limonites minuta* from Dolgoi and Waigats. Bull. B. O. C. xiv, p. 41. [*Charadriiformes*.]
465. PHILLIPS, R. The Spotted Ground-bird (*Cincoloma punctatum*). Avicult. Mag. (2) ii, pp. 149-160. [*Timeliidæ*.]
466. —. The White-throated Ground-Thrush (*Geocichla cyanonota*). T. c. pp. 179-188 with plate. [*Turdidæ*.]
467. PICCHI, C. Elenco degli Uccelli conservati nella sua collezione ornitologica Italiana al 29 Febbraio 1904, con notizie intorno alla distribuzione e nidificazione in Italia. Ornith. xii, No. 4, pp. 381-562.

468. [PICCHI, C.] Anomalie nel colorito del piumaggio osservato in 85 individui della sua Collezione Ornitologica Italiana e breve cenno sull' Eterocrosi. *Avicula* viii, pp. 12-16, 47-52.
- 468A. PITZORNO, M. Ricerche di morfologia comparata sopra le arterie succlavia ed ascellare. II. Uccelli. *Atti Soc. Toscana*, pp. 224-242.
469. PLATHE, F. Zur Verbreitung und Naturgeschichte der Schellente (*Nyroca clangula* L.). *Ornith. Monber.* xii, pp. 158-160. [*Anseriformes*.]
470. POCHE, F. Über die Zulässigkeit der von Lesson in seiner "Traité d'Ornithologie" eingeführten Namen. *J. Ornith.* 1904, pp. 296-302.
471. ——. Einige notwendige Änderungen in der ornithologischen Nomenclatur. *Ornith. Monber.* xii, pp. 22-27.
472. ——. Kritische Bemerkungen über die bisher so genannten Arten *Tanyptera dea* (L.) und *Urogalba paradisea* (L.) *T. c.* p. 57.
473. ——. Zur Synonymie der Accipitres und der Bucerotidæ, nebst Bemerkungen über die Methodik des Eliminationsverfahrens überhaupt. *T. c.* pp. 89-93. [*Accipitriformes*, *Bucerotes*.]
474. ——. Zur Nomenclatur der Raubmöwen, nebst einigen allgemein nomenclatorischen Bemerkungen. *T. c.* pp. 189-195. [*Lariformes*.]
475. ——. Einige Ergänzungen und Berichtigungen zu Sherborn's "Index Animalium." *Zool. Anz.* xxvii, pp. 394-396.
- 475A. ——. Ein bisher nicht berücksichtigtes zoologisches Werk aus dem Jahre 1758, in dem die Grundsätze der binären Nomenclatur befolgt sind. *T. c.* pp. 495-510.
- 475B. PORTUGAL, KING OF (DOM CARLOS DE BRAGANÇA). *Catalogo Illustrado das Aves de Portugal* (Sedentarias, de arribação e accidentaes). Lisboa, 4to, Est. 1-20.
476. POULTON, E. B. The Vision of Birds. *Brit. Med. J.* 1904, ii, p. 1287.
477. PRÉCIGOU, A. *Ornithologie de la Haute-Vienne*. Limoges et Paris, 1904, 8vo, 72 pp.
478. PRICE, W. W. Some winter birds of the High Sierras. *Condor* vi, pp. 70-74.
479. PROCTOR, F. W. & SAUNDERS, W. RADCLIFFE. Eggs and young of *Limonites minuta* from Novaya Zemlya. *Bull. B. O. C.* xiv, p. 41. [*Charadriiformes*.]
480. PROGER, T. W. & PATERSON, D. R. Ornithological notes for 1902 & 1903. *Tr. Cardiff Soc.* xxxvi, pp. 126-131. [*Otides*, *Lariformes*, *Ardeiformes*, *Accipitriformes*.]
481. PUNGUR, G. Der Herbstzug der Rauchschwalbe in 1898 in Ungarn (Mit zwei Karten). *Aquila* xi, pp. 1-249. [*Hirundinide*.]
482. PYCRAFT, W. P. Some common errors in the representation of stuffed birds exhibited in Museums. *Museums J.* 1904, pp. 288-293.
483. ——. On the nestling of Fraser's Touracou (*Turacus macrorhynchus*). *Avicult. Mag.* (2) iii, pp. 55-63 with plate, figg. 1-4: id. *Bull. B. O. C.* xv, p. 14. [*Musophagi*.]
484. ——. Osprey plumes, real and artificial. *Knowledge* (2) i, pp. 128-131.
485. ——. Occurrence of the Kildeer Plover in Scotland. *T. c.* p. 187. *Ibis* 1904, pp. 669 & 670. [*Charadriiformes*.]

487. RAGGI, L. Monografia dei Rampicanti italiani. Avicula viii, pp. 65 & 66, 108-113, 130-134.
488. RALFE, P. Great Skua (*Stercorarius catarrhactes*) in the Isle of Man. Zoologist 1904, p. 33. [*Lariformes*.]
489. RAMÉ, E. Déviations périodiques de l'instinct sexuel chez le Canard domestique. Bull. Soc. sci. méd. Ouest France xiii, pp. 154-158.
490. RASPAIL, X. Développement asymétrique d'un crane de Poulet. Bull. Soc. zool. France xxix, pp. 60-63, text-figg. 1 & 2.
491. —. Existe-t-il deux espèces d'Effarvette? T. c. pp. 63-70, text-figg. 1-5. [*Sylviidæ*.]
492. RAY, M. S. A fortnight on the Farallones. Auk xxi, pp. 425-442, pls. xxiii-xxviii. [*Alciformes*, *Lariformes*, *Pelecaniformes*, *Troglodytidæ*.]
493. READ, ROBERT H. Photographs of birds. Bull. B. O. C. xiv, p. 75.
- 493A. REED, C. S. Las Aves de la Provincia de Concepcion y Algunas noticias acerca de su relacion con la Agricultura. Santiago, 1904, 8vo, 64 pp.
494. REICHENOW, A. Neue Vogelarten. J. Ornith. 1904, pp. 133 & 134. [*Pycnonotidæ*, *Zosteropidæ*, *Nectariniidæ*, *Timeliidæ*.]
495. —. Über *Hiaticula elegans* Licht. T. c. p. 307. [*Charadriiformes*.]
496. —. Neue Arten aus Afrika. T. c. p. 307. [*Sylviidæ*, *Alaudidæ*.]
497. —. Zur Berichtigung [re Dr Hartert's 'Antikritik']. T. c. pp. 563-564.
498. —. Zur Rettung zweier alteingebürgerten Namen. Ornith. Monber. xii, pp. 1-3. [*Turdidæ*.]
499. —. Neue afrikanische Arten. T. c. pp. 27 & 28. [*Paridæ*, *Turdidæ*, *Timeliidæ*, *Sylviidæ*.]
500. —. Neue Arten aus Südpolargebiets. T. c. pp. 46 & 47. [*Pelecaniformes*, *Anseriformes*, *Charadriiformes*, *Lariformes*.]
501. —. Neue Arten aus Ost-Afrika. T. c. p. 95. [*Timeliidæ*, *Turdidæ*.]
502. —. Die Vögel Afrikas. Dritter Band Erste Hälfte. Fünfter Halbband. Neudamm, 1904, 4to, 416 pp., 4 pls. [*Ploceidæ*, *Fringillidæ*, *Motacillidæ*, *Alaudidæ*, *Pycnonotidæ*, *Muscicapidæ*, *Turdidæ*, *Strigiformes*.]
Cf. Zool. Rec. XL, Aves, p. 27, No. 527.
503. —. Uebersicht der auf der deutschen Tiefsee-Expedition gesammelten Vögel. Jena, 1904, 4to, pp. 343-358, Tafeln xxiii & xxiv. [*Corvidæ*, *Dicruridæ*, *Charadriiformes*, *Columbiformes*.]
504. REISER, O. Nachrichten von O. Reisers Reise nach Brasilien. Ornith. Monber. xii, pp. 49-52.
505. —. Über das Auftreten des Seidenschwanzes (*Ampelis garrulus*) in Bosnien im Januar und Februar 1904. Ornith. Jahrb. xv, pp. 145-148.
506. —. Zur Kenntniss der Vogelwelt von Konstantinopel. T. c. pp. 153-156.
507. RENSHAW, G. The Amsterdam Zoological Gardens. Zoologist 1904, pp. 220-224.

508. REY, E. Die Eier der Vögel Mitteleuropas. Gera-Untermhaus, 8vo. Liefer. 17-20 [1900: received 1904], pp. 265-312, Tafeln 82-106: Liefer. 21-26, pp. 313-408, Tafeln 53-57, 84-128 [1904].
509. *RHOADS, S. N. Exit the Dickcissel (*Euspiza americana*). A remarkable case of local extinction. 8vo, pp. 12. (Reprinted from Cassinia 1903, pp. 17-28.) [*Fringillidæ*.]
510. RICHARDSON, C. H. A list of summer birds of the Piute mountains, California. Condor vi, pp. 134-137.
511. RIDGWAY, R. The birds of North and Middle America: a descriptive catalogue of the higher groups, genera, species and subspecies of birds known to occur in North America, from the Arctic lands to the Isthmus of Panama, the West Indies, and other islands of the Caribbean Sea and the Galapagos Archipelago. Bull. U. S. Mus. 50, Part III, xx+802 pp., xix pls. [Cf. Zool. Rec. xxxix, Aves, p. 27, No. 458.] [*Motacillidæ*, *Hirundinidæ*, *Ampelidæ*, *Ptilogonatidæ*, *Dulidæ*, *Laniidæ*, *Vireonidæ*, *Corvidæ*, *Paridæ*, *Sittidæ*, *Certhiidæ*, *Troglodytidæ*, *Cinclidæ*, *Chamæidæ*, *Sylviidæ*.]
512. RILEY, J. H. Catalogue of a collection of birds from Barbuda and Antigua, British West Indies. Smithson. Collect. xlvii, pp. 277-291. [*Accipitriformes*, *Coccyges*, *Mniotiltidæ*.]
513. —. Note on the generic names *Bellona*, *Orthorhynchus*, *Chrysolampis* and *Eulampis*. Auk xxi, pp. 485 & 486. [*Trochili*.]
- 513A. —. On the proper name of the Tody of Jamaica. T. c. p. 486. [*Todi*.]
514. RIPPON, G. On new species from the Southern Chin Hills. Bull. B. O. C. xiv, pp. 83 & 84. [*Nectariniidæ*, *Timeliidæ*, *Paridæ*, *Sittidæ*.]
515. ROBINSON, H. W. Lanner Falcon (*Falco feldeggii*) in Lancashire. Zoologist 1904, p. 75. [*Accipitriformes*.]
- 515A. RÖRIG, G. Magenuntersuchungen land und forstwirthschaftlich wichtiger Vögel. Arb. Gesund. Berlin i, pp. 1-85.
- 515B. —. Die Verbreitung der Saatkrähe in Deutschland. T. c. pp. 273-400, Taf. iv & v. [*Corvidæ*.]
- 515C. —. Die Krähen Deutschlands in ihrer Bedeutung für Land- und Forstwirthschaft. T. c. (1900), pp. 285-400. [*Corvidæ*.]
- 515D. —. Tabellen der Untersuchungen über die Nahrung der Krähen vom 13 November, 1897 bis 12 November, 1899. T. c. Heft. 3, pp. 1-151, 1900. [*Corvidæ*.]
516. ROTHSCHILD, N. CHARLES. On some rare species of birds from Egypt and the Soudan. Bull. B. O. C. xiv, pp. 90 & 91. [*Turdidæ*, *Caprimulgi*.]
517. —. On the occurrence of *Larus cachinnans* near Dover. T. c. p. 91. [*Lariformes*.]
520. ROTHSCHILD, W. *Paryphephorus duivenbodei* in British New Guinea. Bull. B. O. C. xiv, p. 7. [*Paradiseidæ*.]
521. —. A new *Pitta* from the Solomon Islands. T. c. pp. 7 & 8. [*Pittidæ*.]
522. —. On the genus *Phasianus*. T. c. pp. 36-38. [*Phasianidæ*.]
523. —. Exhibition of a skin of *Fulica cornuta*. T. c. p. 38. [*Rallidæ*.]

524. [ROTHSCHILD, W.] On some new species and subspecies of *Casuarus*. T. c. pp. 38-40. [*Casuariiformes*.]
525. —. Exhibition of hybrid Pheasants. T. c. p. 58.
526. —. On a new species of *Centropus*. T. c. p. 59. [*Cuculi*.]
527. —. On a new species of *Prioniturus*. T. c. pp. 71 & 72. [*Psittaci*.]
528. —. On a new genus of Pigeons. T. c. pp. 77 & 78. [*Columbiformes*.]
529. —. On a new species of *Pitohui*. T. c. p. 79. [*Prionopidæ*.]
532. —. On the various races of Barn owls. T. c. pp. 87-90. [*Striges*.]
533. —. Remarks on eggs of various species of Ratite Birds laid in confinement. T. c. p. 90. [*Casuariiformes*, *Rheiformes*.]
534. —. New species of Kingfishers from Bougainville Island, Solomon Archipelago and Asuncion Island, N. Mariannes. T. c. pp. 5-7. [*Halcyones*.]
535. *RUSS, K. Einheimische Stubenvögel, etc.
536. SALTER, J. H. Ornithological notes from Mid-Wales. Zoologist 1904, pp. 66-71.
537. —. On the nesting habits of the Common Buzzard (*Buteo vulgaris*). T. c. pp. 96-102. [*Accipitriiformes*.]
538. —. An unrecorded occurrence of the Scarlet Grosbeak (*Pyrrhula erythrina*). T. c. p. 228. [*Fringillidæ*.]
539. SALVADORI, T. The Linnean *Motacilla stapazina* identified and restored to use. Ibis 1904, pp. 75-78. [*Turdidæ*.]
540. —. On the *Melierax metabates* of Heuglin. T. c. pp. 248-250. [*Accipitriiformes*.]
541. —. Description of a new species of Dove of the Genus *Haplopelia*. T. c. pp. 367-369. [*Columbiformes*.]
542. —. On *Eafa maculata*. T. c. p. 473. [*Meliphagidæ*.]
543. —. On *Ammomanes assabensis*. T. c. pp. 473 & 474. [*Alaudidæ*.]
544. —. Note on *Tanyptera dea*. T. c. pp. 551-554. [*Halcyones*, *Turdidæ*.]
545. —. Nuova specie del genere *Cryptolopha*. Boll. Mus. Torino xix, No. 464. [*Muscicapidæ*.]
546. —. Notizie intorno al Beccofrusone in Piemonte. Avicula viii, p. 28. [*Ampelidæ*.]
547. SARUDNY, N. Beschreibung zweier neuen Formen aus Süd-West Persien. Ornith. Monber. xii, pp. 164 & 165. [*Paridæ*, *Turdidæ*.]
548. —. Über neue Arten und Formen. Ornith. Jahrb. xv, pp. 213-227. [*Turdidæ*, *Fringillidæ*, *Sittidæ*.]
549. —. Eine neue Grasmücke aus Persien. Ornith. Jahrb. xv, pp. 220 & 221. [*Sylviidæ*.]
550. — & LOUDON, H. [Baron]. Über eine neue *Saxicola* aus Persien. Ornith. Jahrb. xv, pp. 219 & 220. [*Turdidæ*.]

551. [SARUDNY & LOUDON, H.] Einige neue Subspecies aus Persien und dem transkaspischen Gebiet. Ornith. Jahrb. xv, pp. 221-227. [*Alaudidæ*, *Turdidæ*, *Galliformes*, *Pici*.]
552. SAUNDERS, W. RADCLIFFE. Remarkable nests of *Falco vespertinus* and *Anthus pratensis*. Bull. B. O. C. xiv, p. 42. [*Accipitriformes*, *Motacillidæ*.]
- . [See also PROCTOR, F. W. (479).]
553. SAXBY, T. E. Ornithological notes from Shetland. Zoologist 1904, pp. 230 & 231.
554. ———. On the occurrence of the Hawfinch and other birds in Unst, Shetland. Ann. Scott. Nat. Hist. 1904, pp. 154-157.
555. SCHENK, J. Kukukmimicry. Aquila xi, pp. 369-374. [*Cuculi*.]
SCHMIDT, R. [See BIANCHI, V. (48).]
556. SCHMITZ, P. E. Aus dem Vogelleben der Insel Porto Santo. Ornith. Jahrb. xv, pp. 124 & 145.
557. SCHNEE, P. Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur Fauna der Insel Nauru Vögel. Zool. Jahrb. Syst. xx, pp. 389 & 390.
558. SCHUSTER, L. Die unregelmässige Bebrütung der Eulengelege. Ornith. Jahrb. xv, pp. 43-48.
559. ———. Weiteres Belegmaterial zu: Über die unregelmässige Bebrütung der Eulengelege. T. c. pp. 113 & 114.
560. SCHUSTER, W. Die Verbreitung des Girlitzes in Deutschland mit besonderer Berücksichtigung des im Laufe des 19 Jahrhunderts okkupierten Gebietes. Ornith. Jahrb. xv, pp. 36-43.
561. ———. Entwicklung oder Nicht-Entwicklung? J. Ornith. 1904, pp. 431-443.
562. SCHUTZE, A. E. Nesting habits of the Caracara (*Polyborus cheriway*). Condor vi, pp. 106-108. [*Accipitriformes*.]
563. SCLATER, P. L. Chairman's Annual Address to B. O. C. Bull. B. O. C. xiv, pp. 2-5.
- 563A. ———. Exhibition of rare species of Australian birds, on behalf of Mr A. J. North. T. c. pp. 8-10. [*Muscicapidæ*, *Sylviidæ*, *Certhiidæ*, *Meliphagidæ*, *Laniidæ*, *Paridæ*.]
564. ———. On the birds of the Canaries. T. c. pp. 81 & 82.
565. ———. On Kollibay's Birds of Dalmatia. Op. cit. xv, p. 13. [*Cypselidæ*, *Accentoridæ*.]
566. ———. Letters from W. L. Sclater from the Victoria Falls, Zambesia. T. c. pp. 14 & 15.
567. ———. On the Birds of Sibthorp's 'Fauna Græca.' Ibis 1904, pp. 222-228.
568. ———. On a rare Passerine bird from New Guinea. T. c. pp. 373-375, pl. ix. [*Laniidæ*.]
569. SCLATER, W. L. Saldanha Bay and its Bird-Islands. Ibis 1904, pp. 79-88.
- . [See also SHORTRIDGE, G. C. (600).]

570. SCOTT, W. E. D. Reports of the Princeton University Expeditions to Patagonia, 1896-1899. Vol. II, Ornithology. Princeton, N. J. and Stuttgart, 4to, Part i, pp. 1-112, text-figg. 66. [*Rheiformes*, *Tinamiformes*, *Columbiformes*, *Ralliformes*, *Podicipediformes*, *Sphenisciformes*.]
571. —. The inheritance of song in Passerine birds. *Science* (2) xix, pp. 957-959.
572. —. An account of some experiments in rearing wild Finches by foster birds. *Science* (n.s.) xix, No. 483, pp. 551-554.
573. —. The inheritance of song in Passerine birds. Remarks and observations on the song of the hand-reared Bobolinks and Red-winged Blackbirds (*Dolichonyx oryzivorus* and *Agelaius phoeniceus*). *T. c.* No. 473, p. 154.
574. —. An account of some experiments of rearing wild Finches by foster-parent birds. *Avicult. Mag.* (2) ii, pp. 354-360.
575. —. Remarks on the development of song in the Rose-breasted Grosbeak (*Zamelodia ludoviciana*) and the Meadow Lark (*Sturnella magna*). *T. c.* pp. 257-259. [*Fringillidæ*, *Icteridæ*.]
576. SERLE, W. Hawfinch (*Coccothraustes vulgaris*) at Peterhead. *Ann. Scott. Nat. Hist.* 1904, p. 244. [*Fringillidæ*.]
577. SERVICE, R. From a Solway note-book. *Ann. Scott. Nat. Hist.* 1904, pp. 67-70.
578. SETH-SMITH, D. The Martineta Tinamou (*Calopezus elegans*) breeding in captivity: polyandry in birds. *Avicult. Mag.* (2) ii, pp. 104-106. [*Tinamiformes*.]
579. —. Notes on the habits in captivity of the Brush Bronzewing Pigeon (*Phaps elegans*). *T. c.* pp. 211-214, 263-266, with pl. figg. 1-3. [*Columbiformes*.]
580. —. Weber's Lorikeet (*Psitteuteles weberi* Büttikofer). *T. c.* pp. 246-250. [*Psittaci*.]
581. —. Nesting of the Scaly Dove (*Scardafella squamosa*). *T. c.* pp. 278 & 279. [*Columbiformes*.]
582. —. On the breeding in captivity of the Tataupa Tinamou (*Crypturus tataupa*). *T. c.* pp. 285-292, with coloured plate. [*Tinamiformes*.]
583. —. Some notes on the Painted Quails (*Excalfactoria*). *T. c.* pp. 311-314, with plate. [*Galliformes*.]
584. —. Gray Bare-throated Francolin (*Pternistes leucosepus*). *T. c.* pp. 327-327. [*Galliformes*.]
585. —. Further notes on the Tataupa Tinamou. *T. c.* pp. 362 & 363.
586. —. Nestling and egg of *Turacus macrorhynchus*. *Bull. B. O. C.* xv, pp. 13 & 14. [*Musophagi*.]
587. —. Photographs of birds. *Op. cit.* xiv, p. 75.
588. *SZIELASKO, A. Untersuchungen über die Gestalt und die Bildung der Vogeleier. Königsburg, 1904.
589. SHARPE, R. BOWDLER. On a collection of Birds from the District of Deelfontein in Cape Colony. Part I. *Ibis* 1904, pp. 1-29. Part II. *T. c.* pp. 313-367, pl. viii. [*Muscicapidæ*, *Turdidæ*, *Sylviidæ*, *Paridæ*, *Fringillidæ*, *Alaudidæ*.]

590. [SHARPE, R. BOWDLER.] Report on the Birds obtained by the National Antarctic Expedition at the Island of South Trinidad. T. c. pp. 214-217. [*Procellariiformes*.]
592. —. On further collections of Birds from the Efulen district of Camaroon, West Africa. Part I. T. c. pp. 88-106. [*Columbiformes*, *Ralliformes*, *Ardeiformes*, *Accipitriformes*, *Strigiformes*.]
593. —. On further collections of Birds from the Efulen district of Camaroon, West Africa. Part II. [With notes on habits by G. L. Bates.] T. c. pp. 591-638, pl. xii. [*Charadriiformes*, *Accipitriformes*, *Halcyonines*, *Bucerotes*, *Upupæ*, *Caprimulgi*, *Cypseli*, *Trogones*, *Cuculi*, *Capitones*, *Pycnonotidæ*.]
594. —. On a new Swift from Camaroons. Bull. B. O. C. xiv, p. 63. [*Cypseli*.]
595. —. On the cruise of the 'Emerald.' T. c. pp. 63-65.
596. —. On Cory's Gannet. T. c. pp. 65-69. [*Pelecaniformes*.]
597. —. Photographs of the nesting of Cory's Gannet. T. c. p. 76.
598. —. On new species of African birds. T. c. pp. 93 & 94. [*Columbiformes*, *Sylviidæ*.]
599. SHELLEY, G. E. On a new species of Lark. Bull. B. O. C. xiv, pp. 82 & 83. [*Alaudidæ*.]
600. SHORTRIDGE, GUY C. On a collection of Birds from the neighbourhood of Port St. John's, in Pondoland. With a preface and notes by W. L. Sclater. Ibis 1904, pp. 173-208. [*Ardeiformes*.]
601. SHUFELDT, R. W. On the osteology and systematic position of the *Pygopodes*. Amer. Natural. xxxviii, pp. 13-49, with plate figg. 1-24. [*Podicipediformes*, *Colymbiformes*.]
602. —. Comparison of the provisional schemes of the classification of birds. T. c. pp. 311-319.
603. —. An arrangement of the families and the higher groups of birds. T. c. pp. 833-857, text-figg. 1-6.
SIBTHORP, JOHN. [See SCLATER, P. L. (567).]
604. SILLOWAY, P. M. Additional notes to summer birds of Flathead Lake, with special reference to Swan Lake. With introduction by Morton J. Elrod. Bull. Univ. Montana, Biol. Series No. 6, 8vo, pp. 289-308, pls. liii-lvii, 1903.
605. —. Afield at Flathead. Condor vi, pp. 12-14. [*Podicipediformes*, *Mniotiltidæ*, *Tanagridæ*, *Regulidæ*.]
606. —. Extracts from some Montana note-books, 1904. T. c. pp. 148-150.
SIMPSON, S. [See GALBRAITH (203).]
607. SMEDLEY, J. H. Finches in Northern Queensland. Emu iv, pp. 68 & 69.
608. SNODGRASS, R. E. A list of land birds from central and Southeastern Washington. Auk xxi, pp. 223-233.
609. — & HELLER, E. Birds of the Galapagos Archipelago. P. Washington Ac. v, pp. 231-372.
610. SNOUCKAERT VAN SCHAUBURG, R. Eine Fahrt durch einen friesischen Sumpf. Ornith. Jahrb. xv, pp. 230-237.

- 610A. [SNOUCKAERT VAN SCHAUDEBURG, R.] Ornithologisches aus Holland. Ornith. Monber. xii, pp. 41 & 42.
611. —. Ornithologie van Nederland. Waarnemingen van 1 mei 1903 tot en met 30 April 1904. Tijdschr. Nederland. Dierk. Ver. (2) viii, pp. 240–258.
612. SÓOS, L. Die Nützlichkeit und Schädlichkeit der Saatkrähe (*Corvus frugilegus* L.) in der allgemeinen Auffassung. (Mit 1 Kart und 1 Tabelle.) Aquila xi, pp. 328–352. [*Corvidæ*.]
SOUTHWELL, T. [See GURNEY & SOUTHWELL (242).]
613. STENHOUSE, J. H. The Birds of Nakl Island, on the coast of Syria. Ibis 1904, pp. 29–32. [*Lariiformes*.]
614. STOCKARD, C. R. Nesting habits of the Woodpeckers and the Vultures in Mississippi. Auk xxi, pp. 463–471. [*Pici*, *Cathartiformes*.]
615. STONE, W. On a collection of birds and mammals from Mount Sanhedrin, California. P. Ac. Philad. 1904, Birds, pp. 580–585. With field notes by A. S. BUNNELL.
616. ST. QUINTIN, W. H. The Australian Brush-Turkey (*Catheturus lathamii*). Avicult. Mag. (2) ii, pp. 160–163. [*Galliformes*.]
617. —. The Great Bustard (*Otis tarda*). T. c. pp. 188–191. [*Otides*.]
618. —. The breeding of *Pterocles exustus*. Op. cit. iii, pp. 64–66. [*Pteroclidiformes*.]
619. STREETER, G. L. The structure of the spinal cord of the Ostrich. Amer. J. Anat. iii, pp. 1–27, 6 figg.
620. STRONG, R. M. White Feathers. Biol. Bull. vi, p. 311.
621. SURFACE, H. A. Birds and horticulturists. Pensylv. Dep. Agric. i, No. 1, pp. 3–12 (1903).
622. —. The economic value of our native birds. T. c. No. 2, pp. 5–16, No. 3, pp. 3–22, No. 4, pp. 3–24, pls. i–iv (1903): ii, No. 1, pp. 6–18, pls. i–vi, No. 2, pp. 37–48, No. 3, pp. 51–64, pls. 15 & 16. [*Accipitriformes*, *Strigiformes*, *Halcyones*, *Coccyges*.]
623. SUSHKIN, P. Descriptions of new subspecies of Birds from Palearctic Asia, together with remarks on their geographical distribution. Bull. B. O. C. xiv, pp. 42–46. [*Charadriiformes*, *Anseriformes*, *Accipitriformes*, *Sylviidæ*, *Cinclidæ*, *Regulidæ*, *Paridæ*, *Turdidæ*, *Hirundinidæ*, *Muscicapidæ*, *Fringillidæ*.]
624. SWALES, B. H. A few Southern Michigan notes. Auk xxi, pp. 84 & 85.
625. SWARTH, H. S. Birds of the Huachuca Mountains, Arizona. Pacific Coast Avifauna, No. 4. Cooper Ornith. Club, California 1904, pp. 1–70. [*Pici*, *Caprimulgi*, *Tyrannidæ*, *Corvidæ*, *Icteridæ*, *Fringillidæ*, *Mniotiltidæ*.]
626. —. The status of the Southern California Cactus Wren (*Heleodytes brunneicapillus*). Condor vi, pp. 17–19. [*Troglodytidæ*.]
627. TALAMON, G. Notes sur les oiseaux de la Tunisie. Ornith. xii, No. 4, pp. 583–596.
TALLMON, M. C. [See MORGAN & TALLMON (403).]
628. TALSKEY, J. Das Fürst Lichtenstein'sche Forst- und Jagdmuseum in Mähr-Aussee. Ornith. Jahrb. xv, pp. 237–243.

629. TAVERNER, P. A. A discussion of the origin of migration. Auk xxi, pp. 322-333.
630. TEGETMEIER, W. B. Abnormal eggs of Pheasant and Grouse. Bull. B. O. C. xiv, p. 77. [*Galliformes*.]
631. TERNIER, L. Note sur la nidification de la Grive Draine (*Turdus viscivorus*). Ornith. xii, No. 4, pp. 571 & 572.
632. THANNER, RUDOLF VON. Beobachtungen auf Tenerife. Nov. Zool. xi, pp. 430-435.
633. THAYER, G. H. The Raven (*Corvus corax sinuatus*) in Southern New Hampshire, and other notes. Auk xxi, pp. 491-494. [*Corvidæ*.]
634. THIENEMANN, J. III Jahresbericht (1903) der Vogelwarte Rossitten der Deutschen Ornithologischen Gesellschaft. J. Ornith. 1904, pp. 245-295.
635. —. Vogelwarte Rossitten. Ornith. Monber. xii, pp. 31 & 32, 127-132.
636. —. Vogelwarte Rossitten. T. c. pp. 165-168. [*Accipitriiformes*, *Corvidæ*.]
637. THOMASSET, B. C. Some common birds of the Seychelles. Avicult. Mag. (2) iii, pp. 73-75.
638. TICEHURST, C. B. Solitary Sandpiper in Sussex. Bull. B. O. C. xv, p. 12. [*Charadriiformes*.]
639. —. Necrosis in legs of birds caused by sheep-wool. T. c. pp. 12 & 13.
640. TICEHURST, N. F. Spotted Sandpiper in Kent. Bull. B. O. C. xiv, pp. 84 & 85. [*Charadriiformes*.]
641. TODD, W. E. C. The birds of Erie and Pesque Isle, Erie County, Pennsylvania. Ann. Carnegie Mus. ii, pp. 481-596, pls. xvi-xix.
642. TOMISON, J. Sule Skerry, Orkney, and its bird-life. Ann. Scott. Nat. Hist. 1904, pp. 16-26, 91-98.
643. *TORREY, B. The Clerk of the Woods. Boston & New York, 1903, 16mo, viii + 280 pp.
644. TROTTER, S. Some Nova Scotia birds. Auk xxi, pp. 55-64.
645. TRUMBULL, J. Notes on Land-birds observed on the North Atlantic and Gulf of St Lawrence. Zoologist 1904, pp. 134-141.
646. TSCHUSI ZU SCHMIDHOFFEN, V. R. VON. Über palaearktische Formen. Ornith. Jahrb. xv, pp. 93-108. [*Halcyones*, *Corvidæ*, *Strigiformes*, *Galliformes*.]
647. —. Ornithologische Literatur. Österreich-Ungarns und des Okkupationsgebietes 1902. Verh. Ges. Wien liv, pp. 487-507.
648. —. Über palaearktische Formen. Ornith. Jahrb. xv, pp. 227-230. [*Columbiformes*, *Timeliidæ*, *Accipitriiformes*.]
649. —. Über palaearktische Formen. T. c. pp. 121-124. [*Corvidæ*, *Cuculi*, *Cypseli*.]
650. TUCK, J. G. Pomatorhine Skuas (*Stercorarius pomatorhinus*) in Suffolk. Zoologist 1904, pp. 33 & 34. [*Lariformes*.]
651. USSHER, R. J. Birds met with in the Shannon Valley. Irish Natural. xiii, pp. 101-106.

652. [USSHER, R. J.] Birds and their breeding habits. Rep. Belfast Club (2) v, pp. 97-103.
653. VALLENTIN, R. Notes on the Falkland Islands. Mem. Manchester Soc. xlviii, Part III, Aves, pp. 23-45, pl. i. [*Sphenisciformes*, *Anseriformes*.]
655. VALLON, G. Note ornitologiche per la provincia del Friuli durante l'anno 1903. Avicula viii, pp. 23-28.
656. —. Catalogo ragionato delle specie di Uccelli raccolti dal Prof. Achille Tellini nella Colonia Eritrea dall'ottobre 1902 al marzo 1903. Atti Ist. Veneto 1904, pp. 105-152.
- 656A. VERRILL, A. E. The extermination or partial extermination of native birds. Tr. Connect. Ac. xi, pp. 661-682.
- 656B. VIEIRA, L. Catalogo da Collecção de ninhos e ovos das Aves que criam em Portugal, existente no Museu de Zoologia da Universidade de Coimbra. Ann. Sci. nat. Porto viii, pp. 101-113.
657. VIVIAN, R. A. Some bird-life in British Papua. Emu iv, pp. 52-57. [*Pelecaniformes*.]
658. VOIGT, A. Seltene Durchzügler aus der Umgebung Leipzigs. Ornith. Monber. xii, pp. 99 & 100.
WALTER, H. [See DRESSER, H. E. (148).]
659. WARREN, E. R. A Sandhill Crane's nest (*Grus mexicanus*). Condor vi, pp. 39 & 40. [*Gruiformes*.]
660. WARREN, R. Snow-Geese (*Chen hyperboreus*) in Co. Mayo. Zoologist 1904, p. 32. [*Anseriformes*.]
661. —. Ornithological notes from Killala Bay and the Moy Estuary. T. c. pp. 301-306.
662. WEBB, S., [assisted by] Captain McDAKIN and G. GRAY. The diminution and disappearance of the South-eastern Fauna and Flora within the memory of present observers. South-eastern Nat. 1903, Birds, pp. 51 & 52.
663. WHEELER, W. M. The obligations of the student of animal behaviour. Auk xxi, pp. 251-255.
664. *WHELOCK, J. G. Birds of California. An introduction to more than three hundred common birds of the State and the adjacent islands. With a supplementary list of rare migrants, accidental visitors, and hypothetical subspecies. Chicago, 1904, sm. 8vo, xxviii + 578 pp., 10 half-tone pls., 78 text-figg.
665. WHITAKER, J. I. S. Notes on Sicilian birds. Ibis 1904, pp. 477 & 478. [*Corvidæ*, *Fringillidæ*, *Charadriidæ*.]
666. WHITE, S. A. Birds of the Lamu Archipelago (East Africa). Emu iii, pp. 238-241.
667. WHITMAN, C. O. The Origin and Relationships of the Rock Pigeons as revealed in their colour-patterns. Biol. Bull. vi, pp. 307 & 308.
668. —. Hybrids from wild species of Pigeons, crossed inter se and with domestic races. T. c. pp. 315 & 316.
669. WIDMANN, O. Yosemite valley birds. Auk xxi, pp. 66-73.
670. WILLIAMS, R. W. A preliminary list of the birds of Leon County, Florida. Auk xxi, pp. 449-462. [*Icteridæ*, *Fringillidæ*.]

671. WILSON, EDWARD. The Birds of the Island of South Trinidad. Ibis 1904, pp. 208-213. [See SHARPE, R. B. (590).]
672. WILSON, W. Ornithological notes from Aberdeen. Zoologist 1904, pp. 146, 231.
- 672A. —. Migratory notes for May and June. T. c. pp. 267 & 268.
673. WINGE, H. Om Fugle fra Bronzealderen i Danmark. Vid. Medd. 1904, pp. 313-318.
674. —. Fuglene ved de danske Fyr i 1903. T. c. pp. 319-390.
675. WORKMAN, W. H. *Ampelis garrula* in Ireland. Ibis 1904, pp. 307 & 308 [*Ampelidae*].
676. WORTHINGTON, W. W. Bird notes from Shelter Island, Long Island, N. Y. Auk xxi, p. 287.
677. WRIGHT, W. C. Notes on birds of the Narin district, Co. Donegal. Zoologist 1904, pp. 373-377. [*Procellariiformes*.]
- 677A. WUSTNEI, C. Die Adler Mecklenburg's. Arch. Ver. Mecklenb. lvii, pp. 45-104. [*Accipitriiformes*.]
- 677B. YOUNG, E. W. Observations on the flight of birds and the mechanics of flight. Tr. S. African Soc. xiv, pp. 419-423.
678. YOUNG, L. C. H. Note on sexual dimorphism. J. Bombay Soc. xvi, pp. 37-39, 42 & 43.
ZARUDNY. [See SARUDNY, N. (549).]
679. ZODDA, G. Contributo allo studio degli uccelli siciliani. Avicula viii, pp. 72-75.

II. SUBJECT INDEX.

FAUNISTIC.

Palæarctic Region, see ARRIGONI (16), BIANCHI (47), DAMIANI (140), DRESSER (147), EHMEKE (159), FATIO (173), FRAISSE (194), GEYR (207), HARTERT (255), HAUER (277), HEGYFOKY (279), HELMS (288), HENNICKE (291), HERMAN (293), JOHANSON (316), KLEINSCHMIDT (330), KOLLIBAY (335), KORMOS (339), LETACQ (348), LINDNER (350), LOUDON (361), LUCIFERO (363), MACKAY (364), MADARASZ (370), OTTO (447), PEARSON (463), PICCHI (467), PUNGUR (481), REISER (506), SARUDNY (547), SCHMITZ (556), SCHUSTER (560), SNOUCKAERT (611), SÓOS (612), SUSHKIN (623), TALAMON (627), Talsky (628), Tschusi (646).

British Islands, see APLIN (11), BICKERTON (50), BLATHWAYT (55), BUTTERFIELD (90), CAMPBELL, J. M. (102), CLARKE (120), ELMS (164), EVANS, A. H. (169), FORREST (191), GURNEY (240), HARVIE-BROWN (272), HUGHES (302), JOURDAIN (322), KINNENAR (329), LAIDLAW (342), SALTER (536), SAXBY (553), TICEHURST (640), TOMISON (642), WARREN (660), WEBB (662).

Ethiopian Region, see ANDREWS (9), BOCAGE (24), ERLANGER (167), GRANT (220), HORSBRUGH (299), JACKSON (308), JÄGERSKIÖLD (313), NEUMANN (409), OBERHOLSER (438), REICHENOW (502), ROTHSCILD, N. C. (516), SHARPE (589), SHORTRIDGE (600), THOMASSET (637).

Indian Region, see FERGUSSON (175), FINN (179), FULTON (201), GRANT (226), HARRINGTON (254), INGLIS (307), KERSHAW (327), MCGREGOR (384), MEYER (389), OATES (435), RIPPON (514).

Australian Region, see BERNEY (39), BULLER (82), CARTER (105), FULTON, R. (202), HALL (246), HARTERT (256), HILL (297), HUTTON (304), KEARTLAND (326), KILGOUR (328), LE SOUËF (347), LITTLER (353), MCCLYMONT (383), MILLIGAN (392), NORTH (430), ROTHSCHILD, W. (520), SMEDLEY (607), VIVIAN (657). Australian Ornithologists' Union. Hobart Congress. Emu iii, pp. 141-167, pls. viii & ix.

Nearctic Region, see ALLEN (3), ALLISON (6), BAILEY (18), CHAPMAN (108), DAWSON (141), EIFRIG (161), GRINNELL (233), HOFFMANN (298), JACOBS (311), JONES (320), KOPMAN (338), KUMLIEN (341), MAILLARD (377), MEARNs (387), MILLER (390), OBERHOLSER (436), OSGOOD (446), RHOADS (509), RICHARDSON (510), RIDGWAY (511), SCHUTZE (562), SILLOWAY (604), SNODGRASS (608), STOCKARD (614), STONE (615), SWARTH (625), TODD (641), TROTTER (644), TRUMBULL (645), WHELOCK (664), WIDMANN (669), WILLIAMS (670).

Neotropical Region, see ANDRE (8), BANNERMAN (23), BOWDITCH (63), BRUCH (73), CLARKE (118), GODMAN (214), GOELDI (216), HELLMAYR (280), IHERING (305), MADARASZ (367), MENEGAUX (388), NELSON (406), NICOLL (418), OBERHOLSER (436), OUSTALET (448), REED (493A), RIDGWAY (511), RILEY (512), SCOTT (570), VALLENTIN (653).

Galapagos Islands, see BECK (31), SNODGRASS (609).

Sandwich Islands, see BRYAN (75), FISHER, W. K. (184).

Thirteenth Supplement to the American Ornithologists' Union Checklist of North American Birds. Auk xxi, pp. 411-424.

Supplementary Report of the A.O.U. committee on the protection of North American birds for the year 1903. Auk xxi, pp. 97-208, pls. xii-xviii.

Twenty-first Congress of the American Ornithologists' Union. Auk xxi, pp. 74-78.

ANATOMY AND MISCELLANEOUS.

Physiology, see GALBRAITH & SIMPSON (203), HARPER (253).

Anatomy, see BEDDARD (33), CORDS (132), D'HOLLANDER (144A), GRANT (221), HILLEL (297A), JAMMES (314), LÖNNBERG (356), MITCHELL (397), STREETER (619).

Osteology, see MARTIN (380), OORT (445), SHUFELDT (601).

Fossil Birds, see ANDREWS (9), LUCAS (362), MORGAN (402).

Embryology, see CAMERON (99).

Nidification, see BENT (36), BETHAM (43), EVANS (171), FERGUSSON (175), FULTON, R. (202), GRANT (225), HARRINGTON (254), HEAD (278), HORSBRUGH (299), HOWARD (301), KOPMAN (338), MAZIMAN (382), NORTH (430), SETH-SMITH (578), STOCKARD (614), TERNIER (631), WARREN (659).

Oology, see BUCHANAN (78), CAMPBELL (101), GLADSTONE (213), NORTH (430), PEARSON (464), PROCTOR (479), REY (508), ROTHSCHILD, W. (531).

Classification, see POCHE (470), SHUFELDT (601).

Literature, see BOARDMAN (57), DEANE (142), HELLMAYR (285), PARROT (454), POCHE (470), TSCHUSI (647).

Hybrids, see FRITZ (196), GÜNTHER (238), NEWMAN (417), ROTHSCHILD (525), WHITMAN (668).

Habits, see GYNGELL (244), JACOBS (311), SALTER (537), SCHUTZE (562), SCOTT (571).

Flight, see BARRETT-HAMILTON (27), YOUNG (677B).

Colour-change, see BIRTWELL (52), BUTLER (84), MASCHA (381), PICCHI (468).

Bibliography, see LEVERKÜHN (349).

Bird Protection, see DUTCHER (154).

Distribution, see ANDERSON (7), BUTURLIN (94), GRINNELL (233).

Migration, see BERNEY (39), BUTLER, A. L. (89), CLARKE, W. E. (120), COOKE (128), HAIGH (245), JACOBS (311), KOPMAN (338), LAIDLAW (342), TAVERNER (629), WILSON (672A).

Bird Migration in Great Britain and Ireland. Sixth and final report of the Committee, consisting of Professor NEWTON (*Chairman*), Rev. E. P. KNUBLEY (*Secretary*), Mr JOHN A. HARVIE-BROWNE, Mr R. M. BARRINGTON, Mr A. H. EVANS, and Dr H. O. FORBES, appointed to work out the details of the Observations on the Migration of Birds at Lighthouses and Lightships, 1880-1887. Rep. Brit. Ass. 1903, pp. 289 & 290. [Cf. Zool. Rec. xxxix, Aves, p. 37.]

Statement furnished by Mr WM. EAGLE CLARKE. T. c. pp. 291-304. [*Sturnidæ*, *Corvidæ*.]

Food, see FORBES (189A).

III. SYSTEMATIC.

Sub-class RATITÆ.

Order RHEIFORMES.

Rheidæ of Patagonia, see SCOTT, W. E. D. (570).

Rhea americana and *R. darwini*, remarks on the eggs; ROTHSCHILD, Bull. B. O. C. xiv, p. 90.

Order CASUARIIFORMES.

Dromæus novæhollandiæ, remarks on the eggs; ROTHSCHILD, Bull. B. O. C. xiv, p. 90: *D. ater*. notes on; LE SOUËF, Emu iii, pp. 229-231.

Casuarus unappendiculatus mitratus, *C. u. suffusus*, *C. casuarus chimæra*, n. subspp., *C. doggetti*, *C. jamrachi*, and *C. hagenbecki*, n. spp., habitat unknown; ROTHSCHILD, Bull. B. O. C. xiv, pp. 38-40.

Casuarus unappendiculatus and *C. papuanus*, remarks on their eggs; ROTHSCHILD, Bull. B. O. C. xiv, p. 90.

Order ÆPYORNITHIFORMES.

Eremopezus, n. g. [Fossil] type *E. eocænus*, n. sp., Upper Eocene of the Fayum district, Egypt; ANDREWS, P. Zool. Soc. London 1904, i, pp. 168-171, text-figg. 15, a, b, c.

Mullerornis betsilei [Fossil], notes on the pelvis; ANDREWS, t. c. pp. 163-168, pl. v.

Æpyornis ingens, note on; GRANDIDIER, Bull. Mus. Paris 1903, pp. 318-323, cum figg.

Sub-class CARINATÆ.

Order TINAMIFORMES.

Tinamidæ of Patagonia, see SCOTT, W. E. D. (570): of Central America, see GODMAN (214).

Crypturus tataupa, breeding in captivity; SETH-SMITH, Avicult. Mag. (2) ii, pp. 285-292 cum tab.: *C. mexicanus*, figured; GODMAN, Biol. Centr.-Amer., Aves, iii, pl. 79.

Tinamus salvini Underw. = *T. fuscipennis* Salvad.; id. t. c. p. 450.

Calopezus elegans, breeding in captivity; SETH-SMITH t. c. pp. 104-106.

Nothocercus frantzii [*N. bonapartii* on plate], figured; GODMAN, Biol. Centr.-Amer., Aves, iii, pl. 78.

Order GALLIFORMES.

Catheturus lathamii, notes on the species in confinement; ST. QUINTIN, Avicult. Mag. (2) ii, pp. 160-163: nesting habits; BERTLING, t. c. pp. 217 & 218: breeding in the Zoological Gardens, Regent's Park; id. t. c. pp. 294-297.

Pipile pipile, distinct from *P. cumanensis*. *P. nattereri*, notes on; HELLMAYR, Bull. B. O. C. xiv, pp. 59 & 60: GRANT, t. c. pp. 60 & 61.

Lagopus lagopus, note on; OSGOOD, North Amer. Fauna, No. 24, pp. 65 & 66: *L. rupestris nelsoni*, note on; id. t. c. pp. 66 & 67: *L. albus* var. *major*, n. subsp., Steppes of Akmolinsk, Orenburg, and Turgai; LORENZ, Ornith. Monber. xii, pp. 177 & 178: *L. leucurus altipetens*, in New Mexico at 12,500 feet; BAILEY, Auk xxi, pp. 251 & 352.

Tetrao urogallus, in Peebleshire; MARSHALL, Ann. Scott. Nat. Hist. 1904, p. 244: note on; FAWCETT, Tr. Weardale Club i, pt. ii, pp. 229-231: *T. tetrix* and allies; LÖNNBERG, Ornith. Monber. xii, pp. 105-109: *T. pinetorum*, n. sp., Sweden; id. t. c. p. 107: *T. mongolicus*, n. sp., Mongolia; id. t. c. pp. 107 & 108.

Tetrao tetrix × *Phasianus colchicus*, figured; FRITZE, Jahrb. Mus. Hannover 1904, pp. 1 & 2, taf. vii.

Canachites canadensis osgoodi, note on; OSGOOD, North Amer. Fauna, No. 24, pp. 64 & 65.

Dendragapus obscurus, in New Mexico; BAILEY, Auk xxi, p. 351.

Dendragapus obscurus sierræ, n. subsp., Eldorado Co., California; CHAPMAN, Bull. Amer. Mus. xx, pp. 159-162.

Ammoperdix bonhami ter-meuleni, n. subsp., Arabistan, Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 226 & 227.

Caccabis rufa maderensis, n. subsp., Madeira; TSCHUSI, Ornith. Jahrb. xv, pp. 106-108: *C. chucar weræ*, n. subsp., N. W. Persia; SARUDNY & LOUDON, t. c. pp. 225 & 226.

Pternistes leucoscepus Muhamed-ben-abdullah, n. subsp., S. Somali-land; ERLANGER, Ornith. Monber. xii, p. 97: *P. l. holtemülleri*, n. subsp., Lake Region of S. Shoa; id. t. c. p. 98: *P. leucoscepus*, breeding in confinement; SETH-SMITH, Avicult. Mag. (2) ii, pp. 325-327: *P. leucoscepus infuscatus*, notes on; NEUMANN, J. Ornith. 1904, p. 350.

Francolinus schiitti schiitti and *F. s. tetraoninus*, notes on; NEUMANN, J. Ornith. 1904, p. 351: *F. castaneicollis bottegi*, notes on; id. t. c. pp. 352 & 353: *F. c. gofanus*, n. subsp., Gofa, Omo Country, N. E. Africa; id. t. c. pp. 353 & 354: *F. nigrosquamatus*, notes on; id. t. c. p. 355; *F. zephæna* and its allies; id. t. c. pp. 356-358.

Perdix arenicola, n. sp., Turgai district, S. W. Siberia; BUTURLIN, Ornith. Monber. xii, pp. 148 & 149: allied to *P. caucasica*; REICHENOW, t. c. p. 168: *P. daurica*, in the Kirghis Steppes; NEHRING, Ornith. Monber. xii, pp. 142 & 143.

- Excalfactoria*, notes on the species; SETH-SMITH, Avicult. Mag. (2) ii, pp. 311-314, cum tab. figg. 1-3.
- Tragopan*, biological observations and a review of the species; GHIGI, Rend. Acc. Bologna (5) x, pp. 393-407, tav. i & ii.
- T. caboti*, female described; id. t. c. pp. 151-156, tav. 2.
- Gennæus obscurus*, **n. sp.**, Katha district, Burma; OATES, Ann. Nat. Hist. (7) xiv, pp. 283 & 284: *G. cliffordi*, **n. sp.**, Myitkyina district, E. of Irrawaddy river; id. t. c. pp. 286 & 287: *G. assimilis*, **n. sp.**, Ruby Mines district, Burma; id. t. c. pp. 286 & 287.
- Pucrasia macrolopha*, note on; FULTON, J. Bombay Soc. xvi, p. 61.
- Phasianus*, review of the species; ROTHSCCHILD, Bull. B. O. C. xiv, pp. 36-38: Geographical distribution of the species; BUTURLIN, Ibis 1904, pp. 377-414: *P. colchicus lorenzi*, **n. subsp.**, Kura R., Transcaucasia; id. t. c. p. 386: *P. principalis zarudnyi*, **n. subsp.**, Central Oxus; id. t. c. p. 390: *P. chrysomelas bianchii*, **n. subsp.**, Upper Oxus; id. t. c. p. 393: *P. alpherakyi*, **n. sp.**, C. Manchuria; id. t. c. p. 399: *P. a. ussuriensis*, **n. subsp.**, Ussuri River; id. t. c. p. 404: *P. karpowi*, **n. sp.**, S. Manchuria; id. Ornith. Monber. xii, p. 3: id. Ibis 1904, p. 406: *P. holdereri kiangsuisensis*, **n. subsp.**, E. China; id. t. c. p. 407: *P. h. gmelini*, **n. subsp.**, C. China; id. t. c. p. 408.
- Phasianus scintillans*, egg figured; DRESSER, Ibis 1904, p. 282, pl. vii, fig. 2: *P. colchicus*, parti-coloured egg; TEGETMEIER, Bull. B. O. C. xiv, p. 77: *Phasianus reevesi* × *P. colchicus*, *P. reevesi* × *P. ellioti*, *P. colchicus* × *Thaumalea amherstiae* ♂, *P. colchicus* × *Thaumalea amherstiae*, old ♀, *P. wallichii* × *P. colchicus* (? *P. ellioti* ♂), *P. wallichii* × *P. colchicus* ♂, *Gennæus nycthemerus* × *P. ellioti*, *G. lineatus* × *P. colchicus* ♂, *G. lineatus* × *P. versicolor* ♂, *P. wallichii* × ? *Lophophorus impeyanus* ♂; GUNTHER, P. Zool. Soc. London 1904, ii, pp. 129 & 130.
- Gallus*, notes on the distribution of the species; GHIGI, Monit. Zool. ital. xiv, pp. 319-322.
- Numida*, notes on the distribution and a review of the species; OUSTALET, Bull. Soc. d'Accl. France 1904, pp. 1-18.
- N. ptilorhyncha macroceras*, **n. subsp.**, Lakes of Shoa to Lake Rudolf; ERLANGER, Ornith. Monber. xii, p. 97: *N. p. neumanni*, **n. subsp.**, Usoga, German E. Africa; id. t. c. p. 97.
- N. ptilorhyncha* and its allies; NEUMANN, J. Ornith. 1904, pp. 350, 405-410: *N. p. omoensis*, Omo River: *N. p. toruensis*, Toro, Equatorial Africa, **n. subsp.**; id. t. c. pp. 350, 409 & 410.
- Meleagris gallopavo merriami*, taken at 11,000 feet in New Mexico in July; BAILEY, Auk xxi, p. 352.
- Colinus ridgwayi*, notes on; BROWN, Auk xxi, pp. 209-213.
- Colinus virginianus*, its economic value; JUDD, Yearb. U. S. Dep. Agric. 1903, pp. 193-204, pl. xvi: notes on; DUKE, Pennsylv. Dep. Agric. i, No. 10, pp. 30 & 31.
- Eupsychortyx horvathi*, **n. sp.**, Venezuela; MADARASZ, Ann. Mus. Hungar. ii, p. 116.

Order HEMIPODII.

- Turnix worcesteri*, **n. sp.**, Luzon; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 8, pl. 1, fig. 1; *T. whiteheadi*, figured; id. t. c. pl. 1, fig. 2.

Order PTEROCLIDIFORMES.

- Pterocles exustus*, breeding in confinement; ST. QUINTIN, Avicult. Mag. (2) iii, pp. 64-66.

Order COLUMBIFORMES.

Osteology of the *Columbiformes*; see MARTIN, R. (380): *Columbidæ* of Patagonia; see SCOTT, W. E. D. (570).

Sphenocercus formosæ in Calayan Island, Philippines; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 9.

Vinago waalia cinereiceps, n. subsp., Gelo River, N. E. Africa; O. NEUMANN, J. Ornith. 1904, p. 341: remarks on the African species of *Vinago*; id. t. c. pp. 341-344.

Osmotreron affinis, nest and eggs described; BOURDILLON, J. Bombay Soc. xvi, p. 1.

Ptilinopus cincta ottonis, n. subsp., Dammer and Babber Is. Moluccas; HARTERT, Nov. Zool. xi, p. 178: notes on *P. cincta* and allies; id. t. c. pp. 178 & 179: *P. xanthogaster roseipileum*, n. subsp., S. W. Islands, Moluccas; id. t. c. pp. 179 & 180.

Megaloprepia salamonis Madarasz = *M. poliura* Salvad.; ROTHSCILD & HARTERT, Ann. Mus. Hungar. i, p. 450, 1903.

Carpophaga luctuosa, notes on; JARDINE, Emu iii, pp. 181-185.

Ducula cuprea, nest and eggs described; BOURDILLON, J. Bombay Soc. xvi, p. 2.

Columba palumbus maderensis, n. subsp., Madeira; TSCHUSI, Ornith. Jahrb. xv, pp. 227 & 228.

Macropygia phæa, n. sp., Calayan Island, Philippines; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 9.

Turtur roseogriseus arabicus, n. subsp., S. Arabia; NEUMANN, Ornith. Monber. xii, pp. 31, 83: *T. vinaceus schoanus*, n. subsp., Shoa; NEUMANN, Ornith. Monber. xii, pp. 81 & 82: *T. v. erythraea*, n. subsp., Bogos Land, Erythrea; id. t. c. pp. 82 & 83: *T. vinaceus schoanus*, remarks on; id. J. Ornith. 1904, pp. 347 & 349.

T. senegalensis æquatorialis, n. subsp., N.E., E., S. and W. Africa; ERLANGER, Ornith. Monber. xii, p. 98.

Turtur turtur ♂ × *T. risorius* ♀; NEWMAN, Avicult. Mag. (2) ii, pp. 191-198, pls. 1 & 2, figg. 1-6.

Chamaepelia passerina in the West Indian Islands; NICOLL, Ibis 1904, pp. 570, 572, 576, & 585.

Scardafella squamosa, breeding in captivity; SETH-SMITH, Avicult. Mag. (2) ii, pp. 278 & 279.

Tympanistria tympanistria, breeding in captivity; BUTLER, Avicult. Mag. (2) ii, pp. 100 & 101.

Phaps elegans, notes on the species in captivity; SETH-SMITH, Avicult. Mag. (2) ii, pp. 211-214, 263-266, cum tab. figg. 1-3.

Leptoptila reichenbachii, breeding in captivity; ALDERSON, Avicult. Mag. (2) ii, pp. 270-275.

Haplopetia forbesi, n. sp. [? Prince's Is., W. Africa]; SALVADORI, Ibis 1904, pp. 367-369: *H. plumbescens*, n. sp., Camaroons; SHARPE, Ibis 1904, p. 95: *H. seimundi*, n. sp., Fernando Po; id. Bull. B. O. C. xiv, p. 93: *H. jacksoni*, n. sp., Ruwenzori; id. t. c. pp. 93 & 94.

Homopelia chuni, figured; REICHENOW, Deutsch. Tiefsee-Exped. Vög. taf. xxiv, fig. i: *H. picturata*, figured; id. t. c. taf. xxiv, fig. 2.

Microgoura, n. gen., type *M. meeki*, n. sp., Choiseul Isl. Solomon Islands; ROTHSCILD, Bull. B. O. C. xiv, pp. 77 & 78: figured; id. Nov. Zool. xi, pl. xxi.

Order OPISTHOCOMIFORMES.

Opisthocomus cristatus, notes on the nestling; PYCRAFT, Avicult. Mag. (2) iii, pp. 60-63.

Order RALLIFORMES.

- Rougetius rougeti*, notes on habits ; O. NEUMANN, J. Ornith. 1904, pp. 334 & 335.
- Porzana maruetta*, in Co. Antrim ; WRIGHT, Zoologist 1904, p. 431.
- Sarothrura bonapartei* from Camaroons ; SHARPE, Ibis 1904, p. 95.
- Amaurornis phœnicurus leucomelæna* (S. Müll.) distinct from *A. p. phœnicurus*, *A. p. insularis* is also distinct ; HARTERT, Nov. Zool. xi, pp. 184 & 185.
- Gallinula chloropus*, laying in Rook's nest ; PARKIN, Zoologist 1904, p. 142 : egg found in Magpie's nest ; TONKINSON, t. c. p. 228.
- Porphyrio melanotus* from the S. W. Islands, Moluccas ; HARTERT, Nov. Zool. xi, p. 185 : *P. calvus*, distinct from *P. melanotus* ; id. t. c. p. 185.
- Fulica atra*, unusual number in South Hants ; CORBIN, Zoologist 1904, p. 144.
- F. cornuta* from the Aconqueja Mts. ; ROTHSCHILD, Bull. B. O. C. xiv, p. 38.
- Heliopais personata*, in Lakhimpur, Upper Assam ; BAKER, J. Bombay Soc. xvi, p. 156.

Order PODICIPEDIFORMES.

- Pygopodes*, on the osteology and systematic position ; SHUFELDT, Amer. Natural. xxxviii, pp. 13-49, cum tab. figg. 1-24.
- Podicipedidae* of Central America ; see GODMAN (214).
- Podiceps nigricollis*, breeding in the British Islands ; APLIN, Zoologist 1904, pp. 417-420.
- Colymbus holboellii*, nesting habits ; CURRIER, Auk xxi, pp. 31 & 32 : at Niagara Falls ; BLAIN, t. c. pp. 276 & 277 : at St Mary's, Georgia ; ARNOW, t. c. p. 277 : in Lancaster, Mass. ; THAYER, t. c. p. 383 : nesting habits ; SILLOWAY, Condor vi, p. 12.

Order COLYMBIFORMES.

- Pygopodes*, on the osteology and systematic position ; SHUFELDT, Amer. Natural. xxxviii, pp. 13-49 cum tab., figg. 1-24.

Order HESPERORNITHIFORMES.

- Hesperornis regalis*, note on a skeleton ; LUCAS, Smithson. Collect. xlv, p. 95, pl. xxvii.

Order SPHENISCIFORMES.

- Spheniscus magellanicus*, notes on ; VALLENTIN, Mem. Manchester Soc. xviii, pt. iii, pp. 24-26.
- Eudytes chrysocome*, notes on ; id. t. c. pp. 26-28 : Anatomy of ; HILLEL, Jena. Zeitschr. (2) xxxi, pp. 725-770, Taf. 24 & 25.
- Pygosceles tenuata*, notes on ; id. t. c. pp. 28-30.
- Eudyptila minor*, notes on ; M'CLYMONT, Emu iii, pp. 237 & 238.

Order PROCELLARIIFORMES.

- Procellaria pelagica*, nesting habits ; WRIGHT, Zoologist 1904, pp. 373 & 374 cum fig.
- Oceanodroma* sp. in the Philippines ; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 12.

- Æstrelata fœa* in Madeira ; BUTTERFIELD, Bull. B. O. C. xiv, p. 50.
Æstrelata trinitatis and *Æ. arminjoniana* in South Trinidad Is. ; WILSON, Ibis 1904, pp. 212 & 213 : SHARPE, t. c. pp. 215 & 216 : *Æ. hœsitata*, breeding places in Guadeloupe Is. W.I. ; NICOLL, t. c. p. 574 : its extinction in the West Indies ; id. t. c. p. 563 : at Pittsfield, New Hampshire ; ALLEN, Auk xxi, p. 383, pl. xxii.
Bulweria bulweri in Sussex ; BUTTERFIELD, Bull. B. O. C. xiv, pp. 49 & 50.
Diomedea immutabilis, notes on ; FISHER, Condor vi, pp. 151-159, figg. 1-11 ; id. Auk xxi, pp. 8-20, pls. ii-vii : *D. nigripes*, notes on ; id. t. c. pp. 9-20, pl. viii : id. Condor vi, p. 78.

Order ALCIFORMES.

- Uria troile*, in Berkshire ; NOBLE, Zoologist 1904, p. 116 : *U. troile californica*, breeding habits ; RAY, Auk xxi, pp. 431-434, pl. xxv.
U. ringia, near Cherbourg ; CORAINVILLE, Bull. Soc. Rouen (4) xxiii, pp. 30 & 31.

Order LARIFORMES.

- Hydrochelidon nigra surinamensis*, nesting habits ; CURRIER, Auk xxi, pp. 32 & 33.
Sterna vittata georgia, n. subsp., S. Georgia ; REICHENOW, Ornith. Monber. xii, p. 47 : *S. macrura antistrophe*, n. subsp., Shores of Antarctic Continent ; id. t. c. p. 47 : *S. saundersi* on Naki Island, Sanani Island, off the coast of Syria ; STENHOUSE, Ibis 1904, pp. 31 & 32.
Micranous marcus, n. sp., Marcus Is., North Pacific ; BRYAN, Monogr. Marcus Is., p. 101 [1903].
Xema sabinei, in Hampshire ; GRANT, Bull. B. O. C. xiv, p. 63.
Larus minutus, on the Mersey ; JOURDAIN, Zoologist 1904, p. 193 : *L. ridibundus*, types of eggs ; KRAUSE, Ornith. Monber. xii, pp. 122-127 : *L. occidentalis*, breeding habits ; RAY, Auk xxi, pp. 434-436, pl. xxvi : *L. cachinnans* seen in Dover Harbour ; N. C. ROTHSCHILD, Bull. B. O. C. xiv, p. 91 : *L. audouini* on Naki Island, off the coast of Syria ; STENHOUSE, Ibis 1904, pp. 30 & 31 : note on the eggs ; BAU, Ornith. Jahrb. xv, pp. 1-10, pl. 1, figg. 1-4.
L. californicus, notes on the species in Utah ; GOODWIN, Condor vi, pp. 99 & 100 : *L. glaucescens*, notes on ; OSGOOD, North Amer. Fauna, No. 24, p. 53 : *L. leucopterus*, on the coast of Mull on May 17th ; MACDONALD, Ann. Scott. Nat. Hist. 1904, pp. 247 & 248 : *L. glaucus*, in Glamorganshire ; PROGER & PATERSON, Tr. Cardiff Soc. xxxvi, p. 127.
Catarrhacta Brünn. the correct generic name for the Skuas ; POCHE, Ornith. Monber. xii, pp. 189-195.
Megalestris Bp. vice *Catarracta* Brünn. should stand for the Skuas ; ALLEN, Auk xxi, pp. 345-348.
Stercorarius catarrhactes, in the Irish Sea ; PATTEN, Zoologist 1904, p. 75 : in the Isle of Man ; RALFE, t. c. p. 33 : *S. pomatorhinus*, in Suffolk ; TUCK, t. c. pp. 33 & 34.
S. crepidatus, near St Vincent, W. I. ; NICOLL, Ibis 1904, p. 563 : *S. parasiticus*, in Tunis in June ; KOLLIBAY, Ornith. Monber. xii, p. 101 : in Kansas ; SNOW, Auk xxi, p. 284.

Order CHARADRIIFORMES.

- The measurements and weights of the eggs ; BUCHANAN, Zoologist 1904, pp. 281-290.

- Chionis nasicornis*, n. sp., Heard Is. ; REICHENOW, Ornith. Monber. xii, p. 47.
- Hæmatopus ostralegus*, note on ; PATTEN, Zoologist 1904, pp. 431 & 432 : its powers of swimming ; id. Irish Natural. xiii, p. 295.
- Vanellus vulgaris*, difference in form of wing in the sexes ; FROHAWK, Ibis 1904, pp. 446-451 : on the Upper Chindwin ; HARRINGTON, J. Bombay Soc. xv, p. 723.
- Vanellus vanellus*, form of wing in ♂ different from that of ♀ ; FROHAWK, Bull. B. O. C. xiv, p. 62 : swimming ; WARREN, Zoologist 1904, p. 389.
- Charadrius squatarola*, in Kansas ; SNOW, Auk xxi, p. 85.
- Eudromias morinellus*, in Jersey ; MACKAY, Zoologist 1904, p. 249.
- Ægialitis vocifera*, in Scotland ; PYCRAFT, Ibis 1904, pp. 669 & 670 : at Peterhead in 1867 : id. Ann. Scott. Nat. Hist. 1904, p. 247 : *Æ. hiaticola*, nesting notes ; HEPBURN, Zoologist 1904, pp. 168-173 : KELSO, t. c. pp. 265 & 266.
- Charadrius rufocinctus*, figured ; REICHENOW, deutsch. Teifsee-Exped. Vög. taf. xxiii, figg. 1 & 2 : *C. elegans* Licht. is a large-billed form of *C. alexandrinus* L., Tor, Arabia ; REICHENOW, J. Ornith. 1904, p. 307.
- Himantopus himantopus*, figured ; HERMAN, Aquila xi, tab. iv.
- Numenius arcuatus*, nesting in Bavaria ; BESSERER, Ornith. Jahrb. xv, pp. 108-113.
- Totanus solitarius*, in Sussex ; TICEHURST, Bull. B. O. C. xv, p. 12.
- Tringoides macularius*, in Kent ; TICEHURST, op. cit. xiv, pp. 84 & 85.
- Actitis macularia*, breeding in New Mexico at 8,000 feet ; BAILEY, Auk xxi, p. 351.
- Totanus glareola*, in Alaska ; LITTLEJOHN, Condor vi, p. 138.
- Calidris arenaria*, nesting in the Taimyr Peninsula ; DRESSER, Ibis 1904, pp. 229-231.
- Limonites minuta*, eggs ; PROCTOR & RADCLIFFE SAUNDERS, Bull. B. O. C. xiv, p. 41 ; H. J. PEARSON, t. c. p. 41.
- Heteropygia acuminata*, in summer in the Minusinsk district ; SUSHKIN, Bull. B. O. C. xiv, p. 45.
- Erolia ferruginea*, in New Jersey ; CHILDS, Auk xxi, p. 485.
- Tringa subarquata* and *T. canutus*, nesting in the Taimyr Peninsula ; DRESSER, Ibis 1904, pp. 231 & 233.
- Tringa canutus*, at San Diego, California ; DWIGHT, Auk xxi, pp. 78 & 79 : *T. alpina*, notes on ; CAMPBELL, Irish Natural. xiii, pp. 39-41 : *T. (Pelidna) alpina variegata* Tilesius, is the correct name of the Pacific Dunlin ; BUTURLIN, Auk xxi, pp. 50-53.
- Pelidna alpina pacifica*, in Massachusetts in December ; HOWE, Auk xxi, p. 277.
- Limicola platyrhyncha*, in Sussex ; NICOLL, Bull. B. O. C. xv, p. 12.
- Gallinago gallinago*, its love-display ; PARROT, Ornith. Monber. xii, pp. 37-41 : on its note ; HANTZSCH, t. c. pp. 173-175 : *G. delicata*, in the Hawaiian Islands ; BRYAN, Condor vi, p. 78.
- Scolopax rusticula*, nesting in Central Scotland ; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1904, pp. 190-192, 245 & 246 : GLADSTONE, t. c. pp. 246 & 247 : anatomy ; MITCHELL, P. Zool. Soc. London 1903, ii, pp. 352-354, text-fig. 44.
- Philohela minor*, note on the ground-tint of the eggs ; RILEY, Auk xxi, p. 384.
- Rhinoptilus cinctus cinctus* and *R. c. seebohmi*, notes on ; NEUMANN, J. Ornith. 1904, p. 330.
- Glareola melanopectera*, in Sicily ; WHITAKER, Ibis 1904, p. 478.
- Ædicnemus scolopax*, in Co. Donegal ; CAMPBELL, Irish Natural. xiii, p. 119 : in the plains of Chambois (Orne) ; LETACQ, Bull. Soc. Rouen (4)

xxiii, pp. 27-29 : *Æ. senegalensis*, in Camaroons ; SHARPE, Ibis 1904, p. 596.

Otis tarda, on the breeding in confinement ; ST QUINTIN, Avicult. Mag. (2) ii, pp. 188-191 : in Glamorganshire ; PROGER & PATERSON, Tr. Cardiff Soc. xxxvi, p. 126 : *O. dybowskii*, in the Minusinsk Steppe and N. Mongolia ; SUSHKIN, Bull. B. O. C. xiv, p. 45.

Trachelotis barrovii, notes on ; MITCHELL, P. Zool. Soc. London 1904, pp. 2 & 3.

Order GRUIFORMES.

Grus communis, in the Isle of Man ; HUGHES, Rep. Brit. Ass. 1903, p. 696 : notes on the skull of the young ; RASPAIL, Bull. Soc. zool. France xxix, pp. 60-63, text-figg. 1 & 2 : *G. mexicanus*, nest and eggs described ; WARREN, Condor vi, pp. 39 & 40.

Antigone sharpei from the Philippine Islands (Cagayan, Fuga) ; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 11, p. ii.

Balearica chrysopelargus, remarks on the skull ; BEDDARD, P. Zool. Soc. London 1904, ii, p. 131.

Order ARDEIFORMES.

Nesting habits of Herons in Florida ; BENT, Auk xxi, pp. 20-29, 259-270, pls. ix, x, xix-xxi.

Notes on the Herons of the District of Columbia ; BARTSCH, Smithson. Collect. xlv, pp. 104-111, pls. xxxiii-xxxviii.

Geronticus spinicollis, notes on ; CARTER, Emu iii, pp. 209 & 210.

Hagedashia olivacea from Camaroons, notes on *H. rara* ; SHARPE, Ibis 1904, pp. 96 & 97.

Plegadis falcinellus, in Orkney ; CLARKE, Ann. Scott. Nat. Hist. 1904, p. 127 : in Monmouthshire ; PROGER & PATERSON, Tr. Cardiff Soc. xxxvi, p. 128 : *P. autumnalis*, note on ; BENT, Auk xxi, p. 29.

Guara alba, nesting habits in Florida ; BENT, Auk xxi, pp. 25-27, pl. x.

Ajaja ajaja, nesting habits in Florida ; id. t. c. pp. 22-25, pl. ix.

Tantalus loculator, nesting habits in Florida ; BENT, Auk xxi, pp. 27-29.

Dissoura, four species recognised, *D. mortoni* Grant = *D. stormsi* W. Blas. ; FINSCH, Ornith. Monber. xii, 1904, p. 94.

Ciconia ciconia, migration from Germany to India, curious record ; COUTOUX, Ornith. xii, No. 4, p. 464.

Ardea cinerea, breeding on N. Uist, Outer Hebrides ; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1904, p. 57.

Ardetta minuta, in Pondo land ; SHORTRIDGE, Ibis 1904, p. 205.

Botaurus stellaris, in County Waterford ; FLEMYNG, Zoologist 1904, p. 144 : in the Isle of Man ; HUGHES, Rep. Brit. Ass. 1903, p. 696.

Order ANSERIFORMES.

Les Anserides dans l'Égypte ; BOUSSAC, Naturaliste (2), No. 421, pp. 209-211.

Cygnus musicus, in Sind ; CRERAR, J. Bombay Soc. xv, p. 716.

Olor columbianus, note on ; OSGOOD, North Amer. Fauna, No. 24, pp. 60 & 61.

Æx sponsa, notes on ; FINN, Avicult. Mag. (2) ii, pp. 89-94 cum tab.

Cereopsis nove hollandie, *Neochen sandvicensis*, *Chloephaga magellanica*, *C. dispar*, *C. poliocephala*, *C. rubidiceps*, *Chenonetta jubata*, *Chen hyperboreus*, *C. caerulescens*, *Cygnus buccinator*, *C. bewicki*, *Sarcidiornis africana*, breeding in confinement ; description of nests and eggs ; BLAAUW, Ibis 1904, pp. 67-75.

- Chen hyperboreus*, in Co. Mayo ; WARREN, Zoologist 1904, p. 32.
Cygnopsis cygnoides, breeding in Minusinsk and N. Mongolia ; SUSHKIN, Bull. B. O. C. xiv, p. 45.
Branta ruficollis, in India ; BAKER, J. Bombay Soc. xvi, pp. 155 & 156.
Tadorna cornuta, in Berkshire ; NOBLE, Zoologist 1904, p. 117.
Anas boscas, notes on ; OSGOOD, North Amer. Fauna, No. 24, pp. 55-57 :
A. undulata rüppelli, distinct from *A. u. undulata* ; NEUMANN, J. Ornith. 1904, pp. 327 & 328 : *A. strepera*, in Wigtownshire ; MAXWELL, Ann. Scott. Nat. Hist. 1904, p. 57.
Mareca penelope, figured ; BAKER, J. Bombay Soc. xvi, pl. xix : in Southern California ; GRINNELL, Auk xxi, pp. 383 & 384.
Anas drygalskii, n. sp., Crozet Is. ; REICHENOW, Ornith. Monber. xii, p. 47.
Spatula clypeata, in Berkshire ; NOBLE, Zoologist 1904, p. 117.
Stictonetta nevosa, has a red bill during the breeding-season ; LE SOUËF, Emu iii, p. 233.
Netta rufina, in Suffolk ; OGILVIE, Bull. B. O. C. xiv, p. 62.
Aythya collaris, in San Mateo Co., California ; FISHER, Condor vi, p. 25.
Fuligula nyroca, in Yorkshire ; ARUNDEL, Zoologist 1904, p. 33 : *F. fuligula*, figured ; BAKER, J. Bombay Soc. xv, pl. xviii.
Tachyeres cinereus, notes on ; VALLENTIN, Mem. Manchester Soc. xlviii, pt. iii, pp. 33-36.
Nyroca clangula, [i.e. *Clangula glaucion*] breeding in N. Germany ; PLATHE, Ornith. Monber. xii, pp. 158-160.
Edemia carbo [i.e. *Æ. stejnegeri*], breeding in Minusinsk ; SUSHKIN, Bull. B. O. C. xiv, p. 45.
Somateria spectabilis, in Jersey ; MACKAY, Zoologist 1904, p. 380 : near Venice ; NINNI, Avicula viii, pp. 159-161.
Merganser serrator, note on ; OSGOOD, North Amer. Fauna, No. 24, p. 55.

Order PELECANIFORMES.

- Phalacrocorax vanhöffeni*, n. sp., Crozet Is. ; REICHENOW, Ornith. Monber. xii, p. 46 : *P. dilophus albociliatus*, *P. penicillatus*, *P. pelagicus resplendens*, breeding habits ; RAY, Auk xxi, pp. 436-439, pls. xxvii & xxviii, fig. 2 : *P. dilophus cincinatus*, note on ; OSGOOD, North Amer. Fauna, No. 24, pp. 54 & 55.
Sula cyanops and *S. piscator*, nesting habits ; FISHER, Condor vi, pp. 89-94, cum figg. : *S. coryi*, notes on ; SHARPE, Bull. B. O. C. xiv, pp. 65-69 : *S. coryi* = *S. piscator*, notes on the species ; NICOLL, Ibis 1904, pp. 588 & 589 : *S. nebouxi*, notes on ; BECK, Condor vi, pp. 6-8, cum figg.
Frigate birds, nesting habits ; BECK, Condor vi, p. 9, cum fig.
Fregata aquila, notes on the nesting on Laysan Is. ; FISHER, Condor vi, pp. 57-61, cum tab. : note on ; VIVIAN, Emu iv, pp. 55 & 56.
Phaethon aethereus, nesting habits ; BECK, Condor vi, p. 10, cum fig.
Pelecanus erythrorhynchus, nesting at Utah Lake ; GOODWIN, Condor vi, pp. 126-129.

Order CATHARTIFORMES.

- Sarcorhamphus*, notes on the tongue and windpipe and the inter-relations of the genera *Gypagus* and *Cathartes* ; BEDDARD, P. Zool. Soc. London 1903, ii, pp. 386-392, text-figg. 45-48.
S. gryphus, its sense of smell ; GILL, Tr. Nat. Hist. Northumb. (2) i, p. 40.
Catharista urubu, breeding habits on the Mississippi ; STOCKARD, Auk xxi, pp. 469-471.

Order ACCIPITRIFORMES.

Falconidæ, their economic value in N. America ; see SURFACE, H. A. (621).

Serpentarius serpentarius (fig. 1) and *S. orientalis* (fig. 2), figured ; ERLANGER, J. Ornith. 1904, taf. iv.

Gyps fulvus and allies ; ERLANGER, J. Ornith. 1904, pp. 139-148 : *G. f. fulvus*, figured ; id. t. c. taf. i : *G. f. rueppelli*, figured ; id. t. c. taf. ii.

Pseudogyps africanus (Salvad.), figured ; ERLANGER, J. Ornith. 1904, p. 149, taf. iii, fig. 1 : *P. a. schillingsi*, n. subsp., German East Africa ; id. t. c. p. 150, taf. iii, fig. 2 : *P. a. fülleborni*, n. subsp., Nyasa Land to Angola ; id. t. c. p. 151, taf. iii, fig. 3 : *P. a. zechi*, n. subsp., Togo Land ; id. t. c. p. 152, taf. iii, fig. 4.

Polyborus cheriway, nesting habits ; SCHUTZE, Condor vi, pp. 106-108.

Polyboroides pectoralis, not distinct from *P. typicus* ; SHARPE, Ibis 1904, pp. 98 & 99.

Urotriorchis macrurus, young described ; SHARPE, Ibis 1904, p. 99.

Melierax canorus and allies, figured, with characters of upper tail-coverts (taf. v, figg. 1-5c, 6-8), *M. c. canorus* (taf. v, fig. 1), *M. c. poliopterus* (taf. v, fig. 2), *M. c. metabates* (taf. v, fig. 3), *M. c. mechowi* (taf. v, fig. 4), *M. c. poliopterus* × *M. c. metabates*, figured ; ERLANGER, J. Ornith. 1904, pp. 161-165, taf. v : *M. polyzonus* (Rüpp., nec Less.) must stand as *M. metabates* Heugl., SALVADORI, Ibis 1904, pp. 248-250. [Cf. REICHENOW, Vög. Afrikas i, p. 544.]

Micronisus niger niger (Senegal, N. E. Africa, Nile districts to N. German E. Africa) and *M. n. carbonarius* (Licht., from S. German E. Africa to South Africa) ; the differences noted ; ERLANGER, J. Ornith. 1904, pp. 179-182.

Astur, habits of West African species ; BATES, Ibis 1904, p. 597 : *A. palumbarius*, supposed breeding in Gloucestershire ; GRANT, Bull. B. O. C. xiv, p. 74.

A. tachiro tachiro, from Somali Land ; ERLANGER, J. Ornith. 1904, pp. 168 & 169 : *A. unduliventer*, its characters ; NEUMANN, J. Ornith. 1904, p. 360 : *A. castanilius* = *A. unduliventer* ; GRANT, Ibis 1904, p. 278 : *A. castanilius*, young described ; SHARPE, Ibis 1904, p. 99 : *A. tousseneli*, young described ; id. t. c. p. 100 : *A. torquatus wallacei*, from the S.W. Islands, Moluccas ; HARTERT, Nov. Zool. xi, pp. 189 & 190.

Lophospizias trivirgatus, nest and eggs described ; BOURDILLON, J. Bombay Soc. xv, p. 672.

Accipiter nisus nisus from Abyssinia ; ERLANGER, J. Ornith. 1904, pp. 170 & 171 : *A. hilgerti*, n. sp., Arusi, Galla Land, N. E. Africa ; id. t. c. p. 171, taf. vi : *A. ladygini*, n. sp., E. Tibet ; BIANCHI, Annuaire Mus. St. Petersb. viii, p. 11, 1903 : *A. rufiventris perspicillaris* is the N. E. African form of *A. rufiventris* ; NEUMANN, J. Ornith. 1904, p. 360 : *A. rufiventris rufiventris* and *A. r. perspicillatus*, notes on their geographical distribution ; ERLANGER, J. Ornith. 1904, pp. 172 & 173 : the latter from Togo Land ; id. t. c. p. 173 : *A. minullus* and its allies ; id. t. c. pp. 173-178 : *A. m. tropicalis*, figured ; id. t. c. p. 176, taf. vii : *A. m. minullus* (fig. 1), *A. m. intermedius*, n. subsp., Abyssinia, S. Shoa ; id. t. c. pp. 173-176 (fig. 2), figured ; id. t. c., taf. viii : *A. batesi*, n. sp., Camaroons ; SHARPE, Ibis 1904, pp. 100 & 101.

Buteo, observations on the colour-changes in the genus ; BIRTWELL, Bull. Univ. New Mexico iii, No. 7, pp. 3-14.

Buteo augur and *B. auguralis*, remarks on ; NEUMANN, J. Ornith. 1904, pp. 362-364 : *B. buteo* and allies, *B. ferox* and allies ; id. t. c. pp. 365-

- 367 : *B. anceps* (= *B. auguralis* Salvad.), notes on ; ERLANGER, J. Ornith. 1904, pp. 195-197, taf. xi.
- Buteo vulgaris*, notes on nesting habits ; SALTER, Zoologist 1904, pp. 96-102, pp. 385-388 : note on ; RAEBURN, t. c. pp. 429 & 430 : *B. zimmermanni*, in the Kurische Nehrung ; THIENEMANN, Ornith. Monber. xii, pp. 165 & 166 : *B. borealis krideri*, in South-eastern Georgia ; ARNOW, Auk xxi, pp. 277 & 278.
- Gypaetus barbatus* and its allies, *G. b. atlantis* Erl., *G. b. ossifragus* Sav., and *G. b. meridionalis* Keys. and Blas. ; ERLANGER, J. Ornith. 1904, pp. 201-205.
- Aquila chrysaetus*, abnormally large eggs ; SHARP, Condor vi, pp. 165-168 : *A. rapax* and its allies, *A. rapax rapax* Temm. from N. E. and E. Africa, *A. r. belisarius* Levaill. from N. Africa, *A. r. vindhiana*, India, *A. r. orientalis*, S. E. Europe to N. W. India ; ERLANGER, J. Ornith. 1904, pp. 189-192.
- Archibuteo lagopus*, note on ; EVANS, Ann. Scott. Nat. Hist. 1904, pp. 56 & 57.
- Nisäetus fasciatus*, in Hungary ; HERMAN, Aquila xi, pp. 367 & 368, tab. 1.
- Hieräetus fasciatus minor*, n. subsp., from Africa (S. Arabia, Somali Land, Mozambique) ; ERLANGER, J. Ornith. 1904, pp. 185-187, taf. x, figg. 42 : *H. spilogaster*, ♂ ♀ ad. from S. Somali Land, figured ; id. t. c. taf. ix.
- Eutolmätetus minutus* Brehm., in N. Mongolia ; SUSHKIN, Bull. B. O. C. xiv, p. 46.
- Lophotriorchis lucani*, adult described ; SHARPE, Ibis 1904, p. 102.
- Spizaetus limnaetus floris*, on Wetter Is. ; HARTERT, Nov. Zool. xi, p. 189.
- Dryotriorchis batesi*, n. sp., Camaroon ; SHARPE, Ibis 1904, pp. 601 & 602.
- Circäetus cinereus*, *C. pectoralis* Smith (*thoracicus* Heugl.). Notes on *C. fasciolatus* from German E. Africa to S. Somali Land ; ERLANGER, J. Ornith. 1904, pp. 182 & 183.
- Milvus korschun affinis* Gould, in N. E. Africa (Ennia, Galla-land) ; ERLANGER, J. Ornith. 1904, p. 210, taf. xiii : *M. ægyptius* (fig. 1), *M. korschun reichenowi* (fig. 2), *M. k. korschun* (fig. 3), heads figured ; id. t. c. taf. xii.
- Pernis apivorus*, note on ; CORBIN, Zoologist 1904, pp. 142 & 143.
- Poliohierax semitorquatus* from N. E. Africa ; ERLANGER, J. Ornith. 1904, pp. 224-226 : is probably distinct (*P. castanonotus* Heugl.) from the S. African bird (*P. semitorquatus*) ; id. t. c. p. 226 [described as *P. homopterus* ; OBERHOLSER, P. U. S. Mus. xxvii, pp. 738 & 739].
- Falco feldeggii*, in Lancashire ; ROBINSON, Zoologist 1904, p. 75 : *F. biarmicus* and its allies, *F. b. abyssinicus*, n. subsp., Abyssinia and Shoa ; NEUMANN, J. Ornith. 1904, pp. 369-371 : *F. subbuteo*, note on ; CORBIN, Zoologist 1904, pp. 347 & 348 : preying on Bats ; GREEN, t. c. pp. 388 & 389 : at Kelso ; ROBINSON, Ann. Scott. Nat. Hist. 1904, p. 245 : *F. fasciinucha*, notes on ; NEUMANN, J. Ornith. 1904, pp. 371 & 372 : *F. aesalon*, in Berkshire ; NOBLE, Zoologist 1904, p. 116 : *F. candicans*, in Co. Donegal ; HOWARD, Zoologist 1904, p. 115 : *F. islandus tanypterus*, in Abyssinia ; ERLANGER, J. Ornith. 1904, pp. 212-215 : *F. peregrinus leucogenys* in N. Somali Land ; id. t. c. p. 215 : *F. eleonore schistaceus* H. & E. (*F. concolor*, pt. auct.) Arabia and Abyssinia to Mosambique and Madagascar ; id. t. c. p. 216, taf. xiv, fig. 1 : *F. eleonore eleonore* from the Mediterranean ; id. t. c. pp. 216 & 217, taf. xiv, fig. 2 : *F. concolor* from Nubia and S. Somali Land to Dar-es-Salaam ; id. t. c. pp. 217-219, taf. xv, figg. 1 & 2 : *F. altaicus*, egg figured ; DRESSER, Ibis 1904, p. 282, pl. vii, fig. 7.
- Falco tinnunculus*, a pale variety ; CORBIN, Zoologist 1904, pp. 143 & 144 :

- laying in an artificial nesting-box ; WHITAKER, Zoologist 1904, pp. 192 & 193.
- Cerchneis tinnunculus* and its allies ; ERLANGER, J. Ornith. 1904, pp. 219–223 : *C. t. arthuri*, from Abyssinia and Somali Land ; id. t. c. p. 223, taf. xvi : *C. fieldi*, figured ; id. t. c. taf. xvii : *C. vespertinus*, figured ; HERMAN, Aquila xi, tab. i : *C. vespertinus obscurus*, n. subsp., Tomsk. ; TSCHUSI, Ornith. Jahrb. xv, pp. 229 & 230.
- C. unicolor*, n. sp., Western Australia ; MILLIGAN, Emu iv, pp. 1 & 2.
- C. sparveria loquacula*, n. subsp., Vieques Is., Porto Rico ; RILEY, Smithson. Collect. xlvii, p. 284.
- Falco vespertinus*, in Glamorganshire ; PROGER & PATERSON, Tr. Cardiff Soc. xxxvi, p. 126.
- Erythropus vespertinus*, remarkable nest ; RADCLIFFE SAUNDERS, Bull. B. O. C. xiv, p. 42.
- Pandion haliaetus*, approaching extinction as a breeding species in Scotland ; HARVIE-BROWN, Ibis 1904, p. 664.

Order STRIGIFORMES.

- Strigidae*, their economic value in N. America ; see SURFACE, H. A. (622).
- Asio otus*, nesting on the ground ; HOWARD, Zoologist 1904, pp. 259–261 : at Esher ; DALGLEISH, t. c. p. 265 : its prey ; GYNGELL, t. c. p. 385 : *A. accipitrinus*, breeding near Scarborough ; MORLEY, t. c. p. 385 : *A. otus abyssinicus (montanus* Heugl.) in the highlands of Abyssinia ; ERLANGER, J. Ornith. 1904, pp. 231 & 232, taf. xviii.
- Asio abyssinicus*, notes on ; NEUMANN, J. Ornith. 1904, p. 374 : from Jeffi Duns, Abyssinia ; GRANT, Ibis 1904, p. 276.
- Ketupa javanensis*, in Assam ; COLTART, J. Bombay Soc. xv, p. 719.
- Asio magellanicus mesembrinus*, n. subsp., Costa Rica ; OBERHOLSER, P. U. S. Mus. xxvii, pp. 179 & 180 : *A. m. melancerus*, n. subsp., Guatemala and Mexico ; id. t. c. pp. 180 & 181 : *A. m. icelus*, n. subsp., Coast of California ; id. t. c. p. 185 : *A. m. lagophonus*, n. subsp., Washington to Alaska ; id. t. c. pp. 185–187 : *A. m. heterocnemis*, n. subsp., Labrador ; id. t. c. pp. 187 & 188 : *A. m. algistus*, n. subsp., N. W. coast region of Alaska ; id. t. c. p. 190.
- Bubo maculosus* and allies, *B. m. cinerascens* and *B. m. milesi* ; ERLANGER, J. Ornith. 1904, pp. 227–229.
- Pisorhina scops erlangeri*, n. subsp., Tallah, Tunis ; TSCHUSI, Ornith. Jahrb. xv, pp. 101 & 102 : *P. scops graeca*, n. subsp., Lamia, Greece ; id. t. c. pp. 102 & 103 : *P. scops tuneti*, n. subsp., Tunis ; id. t. c. pp. 103 & 104 : *P. scops cycladum*, n. subsp., Naxos, Melanes, Greece ; id. t. c. p. 104.
- Pisorhina capensis* and its allies, *P. c. ugandæ*, *P. c. leucopsis*, *P. c. ictororkyncha*, and *P. c. scapulata* ; ERLANGER, J. Ornith. 1904, pp. 235–237 : *P. badia* Reichenow = *P. holerythra* ; SHARPE, Ibis 1904, p. 105, figured ; id. t. c. pl. ii : *P. balia*, figured ; REICHENOW, Vög. Afrikas iii : *P. manadensis tempestatis*, n. subsp., Wetter Is., Moluccas, notes on *P. m. albiventris* and *P. m. manadensis* ; id. t. c. pp. 190 & 191.
- Scops cyprina*, figured ; MADARASZ, Ann. Mus. Hungar. ii, tab. xv.
- Asio leucotis nigrovertex*, n. subsp., Abyssinia ; ERLANGER, J. Ornith. 1904, pp. 233 & 234, figured ; id. t. c. taf. xix, fig. 1 : *A. l. leucotis*, figured ; id. t. c. taf. xix, fig. 2.
- Sceloglaux rufifacies*, n. sp., North Island, New Zealand ; BULLER, Ibis 1904, p. 639.
- Scotiapter nebulosa*, at Dedham, Massachusetts ; ALLEN, Auk xxi, p. 278.
- Athene noctua* and its allies, *A. n. glaux*, *A. n. plumipes*, *A. n. brama*, *A. n.*

- pulchra*, and *A. n. spilogaster*; ERLANGER, J. Ornith. 1904, pp. 238 & 239.
- Athene noctua*, in Lincolnshire; BLATHWAYT, Zoologist 1904, pp. 74 & 75.
- Carine noctua caucasica*, n. subsp., Caucasus; ZARUDNY & LOUDON, Ornith. Jahrb. xv, p. 56.
- Glaucidium passerinum*, eggs; OLSEN, Ornith. Monber. xii, pp. 60 & 61 : *G. perlatum* and its allies, *G. p. capensis* and *G. p. kilimensis*; ERLANGER, J. Ornith. 1904, pp. 239-241 : *G. castaneum*, figured; REICHENOW, Vög. Afrikas iii.
- Micropallas whitneyi*, notes on; BROWN, Condor vi, pp. 45-47.
- Strix flammea splendens* and its allies, notes on; ERLANGER, J. Ornith. 1904, pp. 241-244.
- Aluco flammea* and its subspecies; ROTHSCILD, Bull. B. O. C. xiv, pp. 87-90.
- Strix stictica*, n. sp., Venezuela; MADARASZ, Ann. Mus. Hungar. ii, pp. 115 & 116.

Order PSITTACIFORMES.

- Cyclopsittacus festetichi* Madarasz = *C. diophthalmus* (H. & J.); ROTHSCILD & HARTERT, Ann. Mus. Hungar. i, p. 449 : *C. purpuratus* Madarasz = *C. edwardsi* Oust.; iid. t. c. p. 449.
- Psittuteles weberi*, notes on; SETH-SMITH, Avicult. Mag. (2) ii, pp. 246-250.
- Chrysotis guildingi*, figured; DUTTON, Avicult. Mag. (2) ii, pl. to p. 121.
- Chrysotis caymanensis*, note on; NICOLL, Bull. B. O. C. xiv, p. 94.
- Chrysotis bahamensis*, figured; BONHOTE, Avicult. Mag. (2) ii, pl. to p. 239.
- Poiocephalus flavifrons*, notes on; NEUMANN, J. Ornith. 1904, pp. 375 & 376 : *P. f. auranteiceps*, n. subsp., Gelo River, N. E. Africa; id. t. c. p. 376.
- Prioniturus waterstradti*, n. sp., S. Mindanao; ROTHSCILD, Bull. B. O. C. xiv, pp. 71 & 72.
- Palæornis columboides*, nesting habits; BOURDILLON, J. Bombay Soc. xv, p. 666.
- Agapornis pullaria*, breeding in confinement; PORTER, Avicult. Mag. (2) ii, pp. 350-352.

Order CORACIIFORMES.

Sub-order PODARGI.

- Batrachostomus moniliger*, note on the nesting; BOURDILLON, J. Bombay Soc. xv, p. 663.

Sub-order CORACIÆ.

- Coracias garrulus*, in Hants; CORBIN, Zoologist 1904, pp. 458 & 459.

Sub-order HALCYONES.

- Alcedinidæ*, their economic value in N. America; see SURFACE, H. A. (622).
- Alcedo ispida sibirica*, n. subsp., Barnaul, West Siberia; TSCHUSI, Ornith. Jahrb. xv, p. 99.
- Alcedo margelanica*, n. sp., Margelan, Ferghana; MADARASZ, Ann. Mus. Hungar. ii, p. 2.
- Myioceyx ruficeps* from Camaroons; SHARPE, Ibis 1904, p. 607.
- Halcyon bougainvillei*, n. sp., Bougainville Is., N. Solomon group;

ROTHSCHILD, Bull. B. O. C. xiv, pp. 5 & 6 : *H. owstoni*, n. sp., Asuncion Is., N. Mariannes ; ROTHSCHILD, Bull. B. O. C. xiv, pp. 6 & 7 : *H. generosa*, n. sp., Ceylon ; MADARASZ, Ann. Mus. Hungar. ii, p. 1 : *H. perpulchra*, n. sp., Malacca ; id. t. c. pp. 1 & 2 : *H. pileata*, in North Lakhimpur, Upper Assam ; STEVENS, J. Bombay Soc. xvi, pp. 154 & 155 : *H. australasia interposita*, n. subsp., S. W. Islands, Moluccas (Moa and Letti) ; HARTERT, Nov. Zool. xi, pp. 196 & 197 : *H. chloris* and allies ; id. t. c. pp. 197-199 : *H. enigma*, n. n., p. 199, Talaut Is. form.

Tanysiptera, nomenclature, re *T. dea* ; POCHE, Ornith. Monber. xii, p. 57 ; SALVADORI, Ibis 1904, p. 552-554.

Sub-order BUCEROTES.

Dichoceros bicornis, notes on ; FERGUSON, J. Bombay Soc. xv, pp. 659 & 660.

Meniceros bicornis, nesting habits ; OSBORN, J. Bombay Soc. xv, pp. 715 & 716.

Ortholophus cassini Finsch = *O. albocristatus* Cass., *O. finschi*, n. sp., Liberia ; SHARPE, Ibis 1904, p. 610.

Sub-order UPUPÆ.

Upupa epops in Cheshire ; OLDHAM, Zoologist 1904, p. 429.

Scoptelus brunneiceps, figured ; SHARPE, Ibis 1904, pl. xii.

Sub-order MEROPES.

Merops superciliosus donaldsoni, n. subsp., Bar Madu, Ganana river, Somali Land ; OBERHOLSER, P. U. S. Mus. xxvii, pp. 737 & 738 : *M. ornatus*, note on ; BERNEY, Emu iv, pp. 45 & 46.

Sub-Order TODI.

Todus todus is the proper name for the Jamaica Tody ; RILEY, Auk xxi, p. 486.

Sub-order CAPRIMULGI.

Nyctibius jamaicensis in Brazil, observations on habits ; GOELDI, Ibis 1904, pp. 513-518.

Phalaenoptilus nuttalli, notes on ; SWARTH, Cooper Ornith. Club, California, 1904, p. 15.

Antrostomus vociferus in Colorado ; BURNETT, Auk xxi, pp. 278 & 279.

Caprimulgus apatelius, n. sp., Abaya Lake, N. E. Africa ; NEUMANN, Ornith. Monber. xii, p. 143 : *C. binotatus* from Camaroons ; SHARPE, Ibis 1904, p. 612 : *C. manillensis celebensis* Grant, from Wetter Is. ; HARTERT, Nov. Zool. xi, pp. 203 & 204 : *C. nubicus* from Egypt ; N. C. ROTHSCCHILD, Bull. B. O. C. xiv, p. 91.

Sub-order CYPSELI.

Chætura stictolaema from Camaroons ; SHARPE, Ibis 1904, p. 612.

Apus melba tuneti, n. subsp., Tunis ; TSCHUSI, Ornith. Jahrb. xv, pp. 123 & 124 : *A. apus kollibayi*, remarks on ; SCLATER, Bull. B. O. C. xv, p. 13.

Cypselus batesi, n. sp., Camaroons ; SHARPE, Bull. B. O. C. xiv, p. 63 : *C. sladenæ*, n. sp., Fernando Po ; GRANT, Bull. B. O. C. xiv, p. 56.

Micropus pacificus, in Tasmania ; LEGGE, Emu iii, pp. 180 & 181.

Sub-order TROCHILI.

- Selasphorus platycercus* and *S. rufus*, at 12,600 feet in New Mexico ; BAILEY, Auk xxi, p. 354.
Microlyssa nom. emend pro *Bellona* Muls. and Verr. (nec Reichenb.) ; RILEY, t. c. p. 485.

Sub-Order COLII.

- Colius striatus* and its allies ; NEUMANN, J. Ornith. 1904, pp. 403-405.

Order TROGONES.

- Hapaloderma æquatoriale*, not distinct from *H. narina* ; SHARPE, Ibis 1904, p. 613.
Harpactes fasciatus [*fasciatus*], nesting habits ; BOURDILLON, J. Bombay Soc. xv, pp. 663 & 664.

Order COCCYGES.

Sub-order MUSOPHAGI.

- Turacus macrorhynchus*, egg described ; SETH-SMITH, Bull. B. O. C. xv, pp. 13 & 14 : nestling described ; id. t. c. pp. 13 & 14 ; PYCRAFT, t. c. p. 14 : breeding in confinement ; JOHNSTONE, Avicult. Mag. (2) iii, pp. 26-29, cum fig. : notes on the pterylosis and structure of the nestling-down ; PYCRAFT, t. c. pp. 55-63, cum tab. figg. 1-4.

Sub-order CUCULI.

- Cuculidæ*, their economic value in N. America ; see SURFACE, H. A. (622).
Cuculus canorus, habits of ; PAYNE, Zoologist 1904, p. 74 : its mimicry ; SCHENK, Aquila xi, pp. 369-374 ; GEBELL, t. c. pp. 377-379 : note on ; WILSON, Zoologist 1904, pp. 264 & 265 ; ELLISON, t. c. pp. 313 & 314 : near Aberdeen ; WILSON, Zoologist 1904, pp. 384 & 385 : *C. canorus rumenicus*, n. subsp., Roumania and Balkan Peninsula to the Caucasus ; TSCHUSI, Ornith. Jahrb. xv, pp. 121-123 : *C. canorus johanseni* ; TSCHUSI, op. cit. xiv, p. 165 = *C. c. telephonus* Heine ; HARTERT, Ibis 1904, p. 429.
Chrysococcyx rufomerus and allies ; HARTERT, Nov. Zool. xi, pp. 199-201.
Coccyzus minor shelleyi, nom. emend pro *C. dominicæ* Shelley (nec Linn.) ; RILEY, Smithson. Collect. xlvii, p. 285.
Urodynamis taitensis, breeding habits ; FULTON, Tr. N. Zealand Inst. (2) xix, pp. 213-248.
Centropus albidiventris, n. sp., Gizo Is., Solomon Islands ; ROTHSCHILD, Bull. B. O. C. xiv, p. 59 : *C. efulenensis*, n. sp., Camaroons ; SHARPE, Ibis 1904, p. 615 : *C. grilli* and *C. thierryi*, notes on ; NEUMANN, J. Ornith. 1904, pp. 390 & 381 : *C. g. cæruleiceps*, n. subsp., Grandjule Lake, N. E. Africa ; id. t. c. pp. 380 & 381.
Geococcyx californianus, habits ; FISHER, Condor vi, p. 80 : in Kansas ; SNOW, Auk xxi, p. 86.

Order SCANSORES.

Sub-order INDICATOIRES.

- Prodotiscus reichenowi*, n. sp., Moschi, German E. Africa ; MADARASZ, Ann. Mus. Hungar. ii, p. 206.

Sub-Order CAPITONES.

- Lybrius undatus* and its allies ; NEUMANN, J. Ornith. 1904, pp. 387-390.
Melanobucco tsanæ, figured ; GRANT, Ibis 1904, pl. vi.
Barbatula chrysocoma and its allies ; NEUMANN, J. Ornith. 1904, pp. 391 & 392 : *B. c. schoana*, n. subsp., Zodgit, Shoa ; id. t. c. p. 391 : *B. flavisquamata* (Camaraoons) distinct from *B. stellata* (Fernando Po) ; SHARPE, Ibis 1904, p. 618.

Order PICIFORMES.

Sub-order GALBULÆ.

- Urogalba paradisea*, notes on nomenclature ; POCHÉ, Ornith. Monber. xii, p. 57.
Galbalcyrhynchus leucotis innotatus, n. subsp., Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 445.

Sub-order PICI.

- Colaptes auratus*, abnormal growth of bill ; HUNT, Auk xxi, p. 384 : breeding habits ; STOCKARD, t. c. pp. 467 & 468 : *C. auratus luteus*, at Auburn, California ; FISHER, Condor vi, p. 172.
Dendropicus guineensis lepidus and its allies ; NEUMANN, J. Ornith. 1904, pp. 399-402 : *D. guineensis zechi*, n. subsp., Togo Land ; id. t. c. p. 400.
Melanerpes formicivorus aculeatus, notes on ; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 13 & 14 : *M. portoricensis*, abnormal bill ; BOWDISH, Auk xxi, pp. 53-55, pl. xi.
Centurus carolinus, nesting habits in Mississippi ; STOCKARD, Auk xxi, pp. 466 & 467.
Dendrocopus major, in Roxburghshire ; SIMPSON, Ann. Scott. Nat. Hist. 1904, pp. 126 & 127 : in the Outer Hebrides ; MACKENZIE, t. c. pp. 188 & 189.
D. minor morgani, n. subsp., S. W. Persia ; SARUDNY & LOUDON, Ornith. Jahrb. xv, p. 227.
Dendrocoptes medius caucasicus, n. subsp., Caucasus ; BIANCHI, Annuaire Mus. St. Petersb. ix, p. 4.
Dryobates arizonæ, notes on ; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 11 & 12.
Picoides arcticus, at Wellfleet, Massachusetts ; NICHOLS, Auk xxi, p. 81.
Dendromus permistus and its allies ; NEUMANN, J. Ornith. 1904, pp. 392-394 : *D. p. angolensis*, Angola, *D. p. togoensis*, Togo Land, n. subspp. ; id. t. c. pp. 393 & 394 : *D. nubicus* and *D. neumanni*, notes on ; id. t. c. pp. 394 & 395.
Iyngipicus obsoletus and its allies ; NEUMANN, J. Ornith. 1904, pp. 402 & 403 : *I. o. nigricans*, n. subsp., Uma River, N. E. Africa ; id. t. c. p. 402 : *I. o. heuglini*, n. subsp., Bogos Land ; id. t. c. pp. 402 & 403.
Ceophlæus pileatus, breeding habits in Mississippi ; STOCKARD, Auk xxi, pp. 463-466.
Iynx torquilla, in East Lothian ; EVANS, Ann. Scott. Nat. Hist. 1904, p. 244 : *I. pectoralis* Vig. = *I. ruficollis* Wagl. ; HELLMAYR, J. Ornith. pp. 307 & 308. [Cf. RICHMOND, Auk xviii, p. 179, 1900.]

Order EURYLÆMIFORMES.

- Serilophus lunatus rothschildi*, figured ; HARTERT, in Wytsman's 'Genera Avium.' Part I, 1904.

Order PASSERIFORMES.

Family FORMICARIIDÆ.

- Thamnophilus paraguayensis*, **n. sp.**, W. Paraguay ; HELLMAYR, Bull. B. O. C. xiv, pp. 53 & 54 : *T. juruanus*, **n. sp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 439.
- Dysithamnus aroyce*, **n. sp.**, S. E. Peru ; HELLMAYR, Bull. B. O. C. xiv, pp. 52 & 53.
- Myrmotherula pyrrhonota amazonica*, **n. subsp.**, Rio Juruá ; IHERING, Revist. Mus. Paulista vi, p. 440 : *M. brevicauda juruana*, **n. subsp.**, Rio Juruá, Southern Brazil ; id. t. c. pp. 440 & 441 : *M. garbei*, **n. sp.**, Rio Juruá ; id. t. c. p. 441.
- Formicivora orenocensis*, **n. sp.**, Orinoco and Caura Rivers, Venezuela ; HELLMAYR, Bull. B. O. C. xiv, p. 54.
- Drymophila juruana*, **n. sp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 442.
- Phlegopsis*, notes on the genus ; HELLMAYR, Ornith. Monber. xii, pp. 53-55 : *P. paraensis*, **n. sp.**, Pará ; id. t. c. p. 55.

Family DENDROCOLAPTIDÆ.

- Upucerthia baeri*, **n. sp.**, Lara, Tucuman ; OUSTALET, Bull. Mus. Paris 1904, pp. 43 & 44.
- Siptornis hilereti*, **n. sp.**, Tucuman ; OUSTALET, Bull. Mus. Paris 1904, p. 44 : *S. lilloi*, **n. sp.**, Tucuman ; id. t. c. pp. 44 & 45.
- Dendrorornis ocellata juruana*, **n. subsp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, pp. 436 & 437.
- Dendrocolaptes juruanus*, **n. sp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, pp. 437 & 438.
- Dendrocincla*, review of the species ; OBERHOLSER, P. Ac. Philad. 1904, pp. 447-463 : *D. anabatina typhla*, **n. subsp.**, Yucatan : id. t. c. pp. 452 & 453 : *D. enalincia*, **n. sp.**, S. E. Brazil ; id. t. c. pp. 454 & 455 : *D. ridgwayi*, **n. sp.**, Costa Rica ; id. t. c. pp. 458 & 459 : *D. meruloides aphantia*, **n. subsp.**, Tobago ; id. t. c. pp. 460 & 461 : *D. homochroa acedesta*, **n. subsp.**, Panama ; id. t. c. pp. 462 & 463.

Family TYRANNIDÆ.

- Tyrannidæ*, notes on the systematic arrangement ; IHERING, Auk xxi, pp. 313-322.
- Copurus funebris* Cab. & Heine, from San Paulo ; HELLMAYR, Bull. B. O. C. xiv, p. 61.
- Muscisaxicola morenoi*, **n. sp.** ; BRUCH, Revist. Mus. La Plata xi, p. 256.
- Serphophaga cinerea cana*, **n. subsp.**, Santa Marta, U. S. Colombia ; BANGS, P. Soc. Washington xvii, pp. 113 & 114 : *S. paramba*, **n. sp.**, Paramba, N. W. Ecuador ; HELLMAYR, Bull. B. O. C. xiv, pp. 54 & 55.
- Ornithion pusillum juruanum*, **n. subsp.**, Rio Juruá, Southern Brazil ; IHERING, Revist. Mus. Paulista vi, p. 431.
- Todirostrum cinereum finitimum*, **n. subsp.**, Tabasco, Mexico ; BANGS, P. Soc. Washington xvii, p. 114.
- Pitangus caymanensis*, **n. sp.**, Grand Cayman Is. W. I. ; NICOLL, Ibis 1904, pp. 582 & 583.
- Myiodynastes luteiventris*, notes on ; SWARTH, Cooper Ornith. Club, California 1904, pp. 21 & 22.
- Empidonax minimus*, on Grand Cayman Island ; NICOLL, Bull. B. O. C. xiv, p. 95 : id. Ibis 1904, p. 582 : *E. difficilis*, breeding in New Mexico at 11,000 feet ; BAILEY, Auk xxi, p. 355.

Empidonax griseus Brewst. = *E. canescens* Salvin & Godman; NELSON, Auk xxi, p. 80.

Contopus virens, its song; OLDYS, Auk xxi, pp. 270-274.

Contopus pertinax pallidiventris, breeds at 8,000 to 10,000 feet; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 24 & 25.

Myiarchus, a revision of the North American mainland species; NELSON, P. Soc. Washington xvii, pp. 21-50: *M. lawrencei bangsi*, n. subsp., Boquete, Panama; id. t. c. p. 45: *M. lawrencei querulus*, n. subsp., Michoacan, Mexico; id. t. c. p. 47: *M. lawrencei tresmariae*, n. subsp., Maria Madre Is., Tepic; id. t. c. p. 49: *M. brunneiceps* Lawr. from Panama = *M. nigriceps*; id. t. c. p. 50: *M. oberi nugator*, n. subsp., Dominica and Santa Lucia; RILEY, Smithson. Collect. xlvii, pp. 275 & 276: *M. lawrencei olivascens*, notes on; SWARTH, Pacific Coast Avifauna, No. 4, 1904, pp. 22 & 23.

Tyrannus tyrannus, in San Miguel Co., New Mexico; BAILEY, Auk xxi, p. 446.

Family PITTIDÆ.

Pitta cyanoptera, breeding in Upper Burma; EVANS, J. Bombay Soc. xvi, pp. 171 & 172: *P. anerythra pallida*, n. subsp., Bougainville Isl. N. Solomon group; its egg described; ROTHCHILD, Bull. B. O. C. xiv, pp. 7 & 8: *P. reichenowi*, from Camaroon; SHARPE, Ibis 1904, p. 621: *P. annamensis*, figured; OUSTALET, Arch. Mus. Paris (4) v, pl. 5 [1903].

Family XENICIDÆ.

Xenicus stokesi distinct from *X. longipes* and *X. gilviventris*; GRANT, Bull. B. O. C. xv, pp. 15 & 16.

Family HIRUNDINIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, Pt. III, pp. 23-103.

Chelidonaria urbica at Wexford, Ireland, on the 10th of November; JOHNSON, Irish Natural. xiii, p. 48.

Chelidon urbica at Eastbourne in December; MORRIS, Zoologist 1904, p. 32: breeding in September and observed at Scarborough on December 16th, 1900; GYNGELL, Zoologist 1904, p. 73.

Chelidon urbica, not *C. lagopus*, in the Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 46: *C. dasypus* from Calayan Island, Philippines; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 33.

Clivicola riparia from Calayan Isl., Philippines; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 33.

Hirundo rustica, distribution in Hungary in 1898; PUNGUR, Aquila xi, pp. 1-249, with two maps; HEGYFOKY, t. c. pp. 250-256: *H. rustica savitzkii*, n. subsp., Turkestan; LOUDON, Ornith. Jahrb. xv, pp. 54-56: *H. rothschildi*, n. sp., Kaffa, N.E. Africa; NEUMANN, Ornith. Monber. xii, p. 143: *H. albigularis microptera*, n. subsp., N. Angola; HARTERT, Bull. B. O. C. xiv, pp. 73 & 74: *H. striolata* (!) in Calayan Island, Philippine Archipelago, notes on; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 34.

Lamprochelidon, n. g., type *L. euchrysea* (Gosse); RIDGWAY, Birds, North & Middle America iii, pp. 100 & 101.

Stelgidopteryx salvini, n. sp., S. W. Mexico and Guatemala; RIDGWAY, t. c. pp. 62 & 63.

- Progne subis*, notes on; JACOBS, Pennsylv. Dep. Agric. i, No. 10, pp. 27-30, pls. 1 & 2.
- Psalidoprocne holomelæna massaica*, n. subsp., Mts. of East Africa; NEUMANN, Ornith. Monber. xii, p. 144: *P. orientalis reichenowi*, n. subsp., Loango Coast; id. t. c. pp. 144; *P. orientalis oleaginea*, n. subsp., Kaffa, N. E. Africa; id. t. c. p. 144: *P. nitens centralis*, n. sp., Ituri River; id. t. c. p. 144.

Family MUSCICAPIDÆ.

- Alseonax fantisiensis* from Camaroon; SHARPE, Ibis 1904, p. 623.
- Bradyornis benguellensis*, note on; SHARPE, Ibis 1904, p. 317.
- Muscicapa atricapilla*, in Dumfriesshire; GLADSTONE, Ann. Scott. Nat. Hist. 1904, p. 188.
- Pedilorchynchus camerunensis* and *P. stuhlmanni* probably = *P. comitatus*; SHARPE, Ibis 1904, p. 624.
- Cyornis hyacinthina kühni*, n. subsp., Wetter Isl. Moluccas; HARTERT, Nov. Zool. xi, p. 204.
- Petræca goodenovi* and *P. ramsayi*, notes on; MILLIGAN, Emu iv, p. 50.
- Poliomyias luteola* in Eastern Minusinsk; SUSHKIN, Bull. B. O. C. xiv, p. 46.
- Gerygone everetti* and its allies; HARTERT, Nov. Zool. xi, pp. 204 & 205: *G. kisserensis sequens*, Roma, Isl. Moluccas; id. t. c. p. 205.
- Hyltiota violacea* distinct from *H. flaviventris* (*flavigaster*! auct.); SHARPE, Ibis 1904, p. 625.
- Cyanoptila cyanomelæna*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 5 & 6.
- Tarsiger guttifer* and *T. orientalis*, figured; REICHENOW, Vög. Africas iii.
- Chloropeta natalensis major*, n. subsp., N. Angola; HARTERT, Bull. B. O. C. xiv, p. 73.
- Megabias æquatorialis*, n. sp., Uganda; JACKSON, Bull. B. O. C. xv, p. 11.
- Smithornis capensis albigularis*, n. subsp., N. Angola; HARTERT, Bull. B. O. C. xiv, p. 73.
- Chelidorhynchus hypoxanthum*, probable occurrence at Dibrugarh during the cold season; STEVENS, J. Bombay Soc. xvi, p. 155.
- Trochocercus reichenowi*, n. sp., Fanti country, W. Africa; SHARPE, Ibis 1904, p. 630.
- Rhipidura preissi* and *R. albiscapa*, notes on; MILLIGAN, Emu iv, p. 50: *R. rufiventris pallidiceps*, n. subsp., Wetter Isl., Moluccas; HARTERT, Nov. Zool. xi, p. 206: *R. reichenowi* Finsch = *R. elegantula* Sharpe; id. t. c. p. 206: *R. intermedia* North, from N. E. Queensland, notes on; SCLATER, Bull. B. O. C. xiv, p. 8: HARTERT, t. c. p. 10.
- Terpsiphone paradisi* (figg. 9 & 10), *T. princeps* (figg. 11 & 12), eggs figured; DRESSER, Ibis 1904, pl. x.
- Cryptolopha erythræa*, n. sp., Bogos Land; SALVADORI, Boll. Mus. Torino xix, No. 464.
- Monarcha kisserensis* = *M. cinerascens*; HARTERT, Nov. Zool. xi, p. 207.
- Stoparola panayensis nigriloris*, n. subsp., Mindanao; HARTERT, Bull. B. O. C. xiv, p. 80.

Family CAMPOPHAGIDÆ.

- Pericrocotus cinereus*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 13 & 15.

Family PYCNONOTIDÆ.

- Hypsipetes fugensis* has a scutellated tarsus, as also *H. amaurotis*, and they probably belong to a different genus; MCGREGOR, Bull. Philipp.

- Mus. No. 4, pp. 31 & 32: *H. amaurotis*, eggs figured; DRESSER, Ibis 1904, p. 282, pl. vii, figg. 6 & 8.
- Iole holti binghami*, notes on; HARTERT, Ibis 1904, p. 543.
- Criniger propinquus*, n. sp., Tonkin; OUSTALET, Arch. Mus. Paris (4) v, pp. 76 & 77 (1903).
- C. verreauxi ndussumensis*, n. subsp., Equatorial Africa; REICHENOW, Vög. Africas iii, p. 383.
- Bleda batesi* Sharpe = *B. indicator*; id. t. c. p. 390: *B. poliocephala*, figured; id. t. c.
- Andropadus insularis somaliensis*, n. subsp., S. Somali-land (Barawa); REICHENOW, J. Ornith. 1904, p. 133: *A. oleagineus* Peters = *A. insularis*; REICHENOW, Vög. Afrikas iii, p. 408: *A. liberiensis*, Reichenow = *A. gracilirostris*; id. t. c. p. 411: *A. poensis* (Alexander), *A. percevali* (Neumann) = *A. gracilirostris*; REICHENOW, t. c. p. 411: *A. marwiti* Reichenow = *A. zombensis*; id. t. c. p. 413: *A. cameroonensis* Reichenow = *A. curvirostris*; id. t. c. p. 413: *A. montanus*, figured; id. t. c.
- Eurillas efulenensis*, n. sp., Camaroon; SHARPE, Ibis 1904, p. 637.
- Phyllastrephus harterti* (Reichenow) = *P. simplex*; REICHENOW, Vög. Afrikas iii, p. 394: *P. zambesiae* (Shelley) = *P. occidentalis*; id. t. c. p. 397: *P. centralis* (Reichenow) = *P. occidentalis*; id. t. c. p. 397: *P. tenuirostris* (Fischer & Reichenow) = *P. flavostriatus*; id. t. c. p. 399: *P. leucolæma* (Sharpe) = *P. albigularis*; id. t. c. p. 400: *P. capensis suahelicus*, n. subsp., Central East Africa; id. t. c. p. 405: *P. rufescens* Hartlaub, *P. sharpei* Shelley and *P. pauper* Sharpe = *P. strepitans*; REICHENOW, t. c. p. 405: *P. chlorigula*, figured; id. t. c.
- Pycnonotus viridescens*, n. sp., Camaroon; SHARPE, Ibis 1904, p. 638: *P. leucotis*, eggs figured; DRESSER, Ibis 1904, p. 281, pl. vii, figg. 4 & 5.

Family TIMELIIDÆ.

- Chætops kilimensis*, n. sp., Moschi, German E. Africa; MADARASZ, Ann. Mus. Hungar. ii, p. 204.
- Cinclosoma punctatum*, notes on the species in captivity; PHILLIPPS, Avicult. Mag. (2) ii, pp. 149-160.
- Trochaloxypterus holerythrops*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 83: *T. ramsayi*, n. sp., Karennee; GRANT, Bull. B. O. C. xiv, pp. 92 & 93.
- Argya squamiceps yemensis*, n. subsp., Yemen, S. Arabia; NEUMANN, Ornith. Monber. xii, pp. 29 & 30.
- Dryonastes maesi* (fig. 1) and *D. lugens* (fig. 2), figured; OUSTALET, Arch. Mus. Paris (4) v, pl. vi.
- Crateropus*, review of the genus; NEUMANN, J. Ornith. 1904, pp. 548-555: *C. buxtoni* Sharpe = *C. cinereus* Heugl.; id. t. c. p. 548: *C. plebeius emini*, n. subsp., German East Africa; id. t. c. p. 549: *C. leucocephalus abyssinicus*, N. and C. Abyssinia; id. t. c. p. 550: *C. platycercus togensis*, n. subsp., Togo Land; id. t. c. p. 551.
- Cinclorhamphus cruralis*, note on; BERNEX, Emu iv, p. 44.
- Pseudotharrhaleus unicolor*, n. sp., Mindanao; HARTERT, Bull. B. O. C. xiv, p. 74.
- Turdinus pumilus*, n. sp., Bipindi, Camaroons; REICHENOW, Ornith. Monber. xii, p. 28.
- Bathmedonia*, nom. emend. pro *Bathmocercus* Reichenow (nec Fitz.); REICHENOW, J. Ornith. 1904, p. 134.
- Stachyris binghami*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 84.
- Pterythius ricketti*, n. sp., S. China; GRANT, Bull. B. O. C. xiv, p. 92.

Family PANURIDÆ.

Panurus biarmicus, figured; HERMAN, Aquila xi, tab. iii: *P. biarmicus occidentalis*, n. subsp., S. France, Spain, Italy; TSCHUSI, Ornith. Jahrb. xv, p. 228.

Family TROGLODYTIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 473-674.

Heleodytes brunneicapillus, in Lower California; SWARTH, Condor vi, pp. 17-19: unusual nesting site; DAGGETT, t. c. p. 24.

Thryothorus consobrinus, n. sp., Venezuela; MADARASZ, Ann. Mus. Hungar. ii, p. 115: *T. genibarbis juruanus*, n. subsp., Rio Juruá, Southern Brazil; IHERING, Revist. Mus. Paulista vi, p. 431.

Telmatodytes palustris thryophilus is of Oberholser, not of Ridgway, as stated in Zool. Rec. xi, Aves, p. 57.

Troglodytes musculus acosmus, n. subsp., Central Chile; OBERHOLSER, P. U. S. Mus. xxvii, p. 204: *T. m. atopus*, n. subsp., Santa Marta region, Colombia; id. t. c. p. 207: *T. m. enochus*, n. subsp., Coast region of Central Peru; id. t. c. pp. 207 & 208.

Thryorchilus, n. g. type *T. browni* (Bangs); id. t. c. p. 198.

Urocichla oatesi, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 83.

Salpinctes obsoletus, breeding habits; RAY, Auk xxi, pp. 440-442, pl. xxviii, fig. 1.

Family CINCLIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 675-682.

Cinclus cinclus bianchii, n. subsp., Sayan Mts. (89°-94° E. long.), *C. c. middendorffi*, n. subsp., C. Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 43: *C. baicalensis*, in the Sayan Mts.; id. t. c. p. 44: *C. cinclus sardus*, n. subsp., Sardinia; HARTERT, Bull. B. O. C. xiv, p. 51.

Family MIMIDÆ.

Nesomimus bauri, note on; BECK, Condor vi, pp. 5 & 6, cum fig.

Harporhynchus curvirostris and *H. curvirostris palmeri*, notes on the eggs; CLARK, Auk xxi, pp. 214-217, pl. xviii, figg. 1 & 2.

Toxostoma lecontei, notes on; GILMAN, Condor vi, pp. 95-98.

Myiadestes townsendii, note on; BAILEY, Auk xxi, pp. 362 & 363.

Family TURDIDÆ.

Geocichla gurneyi otomitra, n. subsp., Konde Land; REICHENOW, Ornith. Monber. xii, p. 95.

Geocichla peronii audacis distinct from *G. peronii*; HARTERT, Nov. Zool. xi, pp. 208 & 209: *G. cyanonota*, notes on the species in confinement; PHILLIPPS, Avicult. Mag. (2) ii, pp. 179-188 cum tab.

Turdus cabanisi from Deelfontein, W. Cape Colony; SHARPE, Ibis 1904, p. 320: *T. viscivorus*, its nesting; TERNIER, Ornith. xii, No. 4, pp. 571 & 572: *T. ruficollis* and *T. atrigularis*, in the Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 46: *T. alpestris*, in the Hartz Mts.; BERGE, Ornith. Monber. xii, pp. 160-162: *T. musicus* and *T. iliacus*, nomenclature; SALVADORI, Ibis 1904, pp. 551 & 552: ANON. t. c. pp. 665-667: *T. nyikæ*, Nyika Highlands, Nyasa Land; REICHENOW, Ornith. Monber. xii, p. 95.

Hylocichla guttata pallasii, in Eastern Massachusetts in winter; BLAKE, Auk xxi, p. 283

- Petrophila gularis*, in Burma; MACDONALD, J. Bombay Soc. xv, p. 727.
- Accentor*, with six species and subspecies; BIANCHI, *Annuaire Mus. St. Petersb.* ix, pp. 12-21, 49.
- A. collaris tibetanus*, n. subsp., E. Tibet; id. t. c. p. 21.
- Spermolegus*, with five species; id. t. c. pp. 21-37, 49.
- Prunella* Vieill. 1816 vice *Tharrhaleus* Kaup 1829, 6 species; id. t. c. pp. 37-47, 49.
- Aprunella*, n. gen. type *A. immaculata* (Hodgs.); id. t. c. pp. 47-49: *A. collaris reiseri*, remarks on; SCLATER, Bull. B. O. C. xv, p. 13: *A. modularis blanfordi*, n. subsp., S. W. Persia; SARUDNY, Ornith. Monber. xii, pp. 164 & 165.
- Chimarrhornis leucocephalus*, eggs figured; DRESSER, Ibis 1904, p. 281, pl. vii, figg. 1 & 3.
- Cyanecula suecica*, near London; CHUBB, Zoologist 1904, pp. 262 & 263: *C. wolff*, note on; NICOLL, t. c. p. 263: at Scarborough; NELSON, t. c. p. 31: *C. wolff magna*, n. subsp., S. W. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, p. 225.
- Hodgsonius phanicroides*, eggs figured; DRESSER, Ibis 1904, pl. iii, fig. 2.
- Calliope calliope*, in the Philippines; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 31.
- Luscinia luscinia* (L.) and *L. minor* (L.), notes on synonymy; REICHENOW, Ornith. Monber. xii, pp. 1 & 2: KLEINSCHMIDT, t. c. pp. 42-46: habits; HELMS, t. c. pp. 58-60.
- Aëdon luscinia*, in Sicily; MARINUZZI, *Avicula* viii, pp. 17-20.
- Ruticilla semenowi*, n. sp., Orenburg district; SARUDNY, Ornith. Jahrb. xv, pp. 213 & 214: *R. titys*, in Moray; MUIRHEAD, Ann. Scott. Nat. Hist. 1904, p. 55.
- Erythacus* [*Phœnicurus*] *titys*, and *E. phœnicurus*, notes on; REICHENOW, Ornith. Monber. xii, pp. 2 & 3; *E. algeriensis*, n. sp., Algeria, *E. moussieri*, nestling described; KLEINSCHMIDT, Ornith. Monber. xii, p. 197.
- Erythacus*, notes on the Robins of Madeira and the Azores; NICOLL, Ibis 1904, pp. 555 & 591: *E. rubecula*, nesting in a tree; ELLISON, Zoologist 1904, pp. 190, 191, & 312: BENTHAM, t. c. p. 263: *E. cairii*, notes on; BAU, Ornith. Monber. xii, pp. 4-6: GENGLER, t. c. pp. 21 & 22: BERLEPSCH, t. c. p. 36: KLEINSCHMIDT, t. c. pp. 55 & 56: *E. gaetkei*, n. form, Norway (Heligoland, migration); notes on *E. suecicus* and allies; KLEINSCHMIDT, J. Ornith. 1904, pp. 302-306.
- Erythropygia plebeia*, n. sp., Masinde, E. Africa; REICHENOW, Ornith. Monber. xii, pp. 27 & 28: *E. brunneiceps soror*, n. subsp., Little Arusha Land, E. Africa; REICHENOW, Ornith. Monber. xii, p. 95: *E. hartlaubi* and *E. vulpina*, figured; REICHENOW, Vög. Afrikas iii.
- Alethe poliothorax*, figured; REICHENOW, Vög. Afrikas iii, tab.
- Pratincola rubetra dalmatica*, notes on; KOLLIBAY, J. Ornith. 1904, pp. 100 & 101: *P. daeotia*, nest and eggs from Fuerteventura Is.; HARTERT, Bull. B. O. C. xiv, p. 79.
- Myrmecocichla melanura* from the Egyptian Soudan; N. C. ROTHSCHILD, Bull. B. O. C. xiv, p. 91.
- Poliocichla pollux* and its allies, *P. cinerea* and *P. schlegeli*; SHARPE, Ibis 1904, pp. 324 & 325.
- Saxicola gaddi*, n. sp., S.W. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 219 & 220: *S. amphileuca* and *S. melanoleuca*, notes on; KOLLIBAY, J. Ornith. 1904, pp. 80-121: *S. hellmagri*, *S. lübberti*, and *S. falkensteini*, notes on; SHARPE, Ibis 1904, p. 327: *S. monticola*, description of plumages; id. t. c. pp. 327-334: *S. equatorialis* and allies; id. t. c. pp. 333 & 334: *S. stapazina* and *S. occidentalis*, their synonymy; SALVADORI, Ibis 1904, pp. 75-78: *S. ananthe*, in the Philippine Islands [Calayan, Oct. 24]; MCGREGOR, Bull. Philipp.

- Mus., No. 4, p. 27 : *S. galtoni omoensis*, n. subsp., Omo River, N. E. Africa ; NEUMANN, Ornith. Monber. xii, p. 163.
Sialia sialis, unusual nesting-site ; BRYANT, Auk xxi, pp. 390 & 391 : *S. arctica*, breeding in New Mexico at 10,300 feet ; BAILEY, t. c. p. 363.
Calamocichla schillingsi, n. sp., Pangani district ; REICHENOW, Ornith. Monber. xii, p. 95.

Family SYLVIIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 691-736.
Locustella luscinioides, breeding in the Rhine Provinces ; GEYR VON SCHWEPPEBURG, Ornith. Monber. xii, pp. 145-147.
Calamoherde dumetorum and *C. arundinacea*, nesting habits ; RASPAIL, Bull. Soc. zool. France xxix, pp. 63-70, text-figg. 1-5.
Acrocephalus palustris, in Oxfordshire ; FOWLER, Zoologist 1904, pp. 346 & 347. *A. aquaticus* in Norfolk. Cf. Nature, vol. lxx, p. 631.
Tatare vaughani, described and figured ; NICOLL, Ibis 1904, pp. 55 & 56, pl. i.
Luscinola ædon, eggs figured ; DRESSER, t. c. pl. x, figg. 1 & 2.
Arundinax ædon, in Western Minusinsk ; SUSHKIN, Bull. B. O. C. xiv, p. 46.
Cisticola katonæ, n. sp., Boma-Gombe, German E. Africa ; MADARASZ, Ann. Mus. Hungar. ii, p. 204 : *C. pictipennis*, n. sp., Moschi ; id. t. c. p. 205.
C. cinnamomea, n. sp., Uhehe, German E. Africa ; REICHENOW, Ornith. Monber. xi, p. 28 : *C. sylvia*, n. sp., Lake district, Equatorial Africa ; id. t. c. p. 28 : *C. humilis*, n. sp., Lettema Mts., E. Africa ; MADARASZ, t. c. p. 168 : *C. erythrogenys djamdjamensis*, n. subsp., Djam-djam Mts. N. E. Africa ; NEUMANN, t. c. pp. 163 : *C. blanfordi sobatensis*, n. subsp., Sobat River ; id. t. c. p. 164 : *C. cisticola fuscicapilla*, distinct from *C. cisticola* ; HARTERT, Nov. Zool. xi, p. 209.
Prinia gracilis deltae, n. subsp., Nile Delta ; REICHENOW, J. Ornith. 1904, p. 307.
Spiloptila reichenowi, n. sp., Lettema Mts., German East Africa ; MADARASZ, Ornith. Monber. xii, p. 179.
Bradypterus castaneus, figured ; REICHENOW, Vög. Afrikas iii.
Hypolais olivetorum, breeding in Dalmatia ; KOLLIBAY, J. Ornith. 1904, pp. 107-112.
Sylvia semenowi, n. sp., Persia ; SARUDNY, Ornith. Jahrb. xv, pp. 220 & 221 : *S. curruca halimodendri*, n. subsp., Middle Kirghis Steppes [Lower Irghis and Turgai Rivers, 52°-65° E. long.] : *S. curruca* and *S. affinis*, notes on ; SUSHKIN, Bull. B. O. C. xiv, pp. 42 & 43 : *S. curruca*, early nesting in Surrey ; BUNYARD, Zoologist 1904, p. 227 : CUMMINGS, t. c. p. 264 : *S. orphea jerdoni*, in Dalmatia ; KOLLIBAY, J. Ornith. 1904, pp. 115-117.
Herbivocula schwarzi, in Western Minusinsk ; SUSHKIN, Bull. B. O. C. xiv, p. 46 : *H. fuscata*, in Yenesei ; id. t. c. p. 46.
Phylloscopus humei, in the Sayan Mts. ; SUSHKIN, Bull. B. O. C. xiv, p. 46 : *P. viridanus*, on the northern slope of the Sayan Mts., *P. plumbeitarsus*, on the southern slope and in Mongolia ; SUSHKIN, t. c. p. 46 : *P. tristis axillaris*, n. subsp., C. Yenesei (55° N. lat.) ; id. t. c. p. 44 : *P. rufus fortunatus*, on Lanzarote Island ; HARTERT, t. c. p. 51 : *P. viridanus*, in the Baltic Provinces ; OTTO, Ornith. Monber. xii, pp. 73-78 : *P. fortunatus*, its note ; NICOLL, Ibis 1904, p. 556.
Acanthopneuste borealis (Blasius) is the proper name for the North American Willow Warbler ; OBERHOLSER, Auk xxi, p. 390.
Regulus belongs to the *Sylviidæ* ; cf. RIDGWAY, Birds, North and Middle America iii, pp. 698-710.

- Acanthiza ewingi* Gould, *A. diemensis*, and *A. mastersi*, synonymy ; SCLATER, Bull. B. O. C. xv, p. 9 : *A. ewingi* and *A. robustirostris*, eggs described ; CAMPBELL, Emu iii, p. 237 : in Tasmania ; LEGGE, t. c. pp. 179 & 180.
- Apalis ruwenzorii*, **n. sp.**, Ruwenzori ; JACKSON, Bull. B. O. C. xv, p. 11 : *A. murina*, **n. sp.**, Roruma District, E. Africa ; REICHENOW, Ornith. Monber. xii, p. 28.
- Euprinodes leucogaster*, **n. sp.**, Fernando Po ; SHARPE, Bull. B. O. C. xiv, p. 94.
- Eremomela damarensis*, **n. sp.**, Damara Land ; SHARPE, Ibis 1904, p. 339 : *E. polioxantha*, from Mashona Land and Nyasa Land ; id. t. c. p. 340.
- Parnoptila ansorgei*, **n. sp.**, N. Angola ; HARTERT, Bull. B. O. C. xiv, pp. 72 & 73.
- Pholidornis bedfordi*, **n. sp.**, Fernando Po ; GRANT, t. c. p. 56.
- Cettia cetti*, in Sussex ; NICOLL, Bull. B. O. C. xiv, p. 84.
- Malurus superbus* (Shaw) = *M. cyaneus* (Ellis), *M. australis*, nom. novum pro *M. superbus*, auct. (nee Shaw) ; NORTH, Ibis 1904, p. 672 : *M. assimilis* North, notes on ; SCLATER, Bull. B. O. C. xiv, p. 9 : HARTERT, t. c. p. 10 : *M. leucopterus* and *M. leuconotus*, notes on ; MILLIGAN, Emu iv, p. 52.
- Amytornis*, notes on the species ; KEARTLAND, Victorian Natural. xx, pp. 133-139.

Family VIREONIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 128-232.
- Vireosylva gilva brewsteri*, **n. subsp.**, N. W. Mexico ; RIDGWAY, Birds, North and Middle America iii, p. 158 : *V. josephæ costaricensis*, **n. subsp.**, Highlands of Costa Rica ; id. t. c. pp. 159 & 160.
- Vireo huttoni mexicanus*, **n. subsp.**, Southern Mexico and Guatemala ; RIDGWAY, t. c. pp. 186 & 197 : *V. huttoni cognatus*, **n. subsp.**, Lower California ; id. t. c. p. 199 : *V. bellii arizonæ*, **n. subsp.**, Arizona, N. W. Mexico and Western Texas ; id. t. c. pp. 207 & 208 : *V. lauræ*, **n. sp.**, Grenada, W. I. ; NICOLL, Bull. B. O. C. xiv, p. 95, figured ; id. Ibis 1904, pl. xi, fig. 2 : *V. caymanensis*, note on ; id. Bull. B. O. C. xiv, p. 94 : *V. philadelphicus*, note on the nesting ; CLAIRE, Auk xxi, p. 282 : YOUNG, t. c. p. 283.
- Pachysylvia ochraceiceps pallidipectus*, **n. subsp.**, Southern Honduras and Costa Rica ; RIDGWAY, Birds, North and Middle America iii, pp. 219 & 220.
- Vireolanus pulchellus viridiceps*, **n. subsp.**, Panama ; RIDGWAY, t. c. p. 224.

Family AMPELIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 103-112.
- Ampelis garrulus*, note on ; EVANS, Ann. Scott. Nat. Hist. 1904, p. 54 : late stay in Inverness-shire ; MARSHALL, t. c. p. 188 : in Lincolnshire ; BLATHWAYT, Zoologist 1904, pp. 74 & 75 : in East Anglia ; TUCK, t. c. p. 115 : in North of Ireland ; PATTERSON, t. c. p. 31 : in Germany ; LINDNER, Ornith. Monber. xii, p. 96 : in Brunswick ; R. BLASIUS, t. c. p. 8 : near Montbéliard ; BERNARD, Ornith. xii, No. 4, pp. 565-567 : in S. E. France ; FRAISSE, t. c. p. 569 : in Piedmont ; SALVADORI, Avicula viii, p. 28 : notes on ; MARTORELLI, t. c. pp. 42-47 cum fig.

Family DULIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 125-127.

Family PTILOGONATIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 113-125.

Family PRIONOPIDÆ.

Pitohui dichrous monticola, n. subsp., British New Guinea; HARTERT, Bull. B. O. C. xiv, p. 79.

Family LANIIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 232-252.

Gymnorhina longirostris and *G. dorsalis*, remarks on; DEGEN, Emu iii, pp. 201-207: *G. dorsalis*, notes on; MILLIGAN, Emu iii, pp. 177-179, pl. x.

Lanius excubitor, in the Forth; HARVIE-BROWN, Ann. Scott. Nat. Hist. 1904, p. 244: in Lancashire; GRAVES, Zoologist 1904, p. 115: in Cheshire; GRAVES, t. c. p. 31: *L. ludovicianus mearnsi*, n. subsp., Lower California; RIDGWAY, Birds, North and Middle America iii, p. 252: *L. vittatus*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 7 & 8: *L. collurio*, breeding in captivity; GÜNTHER, Avicult. Mag. (2) ii, pp. 339-346.

Laniarius ambiguus, n. sp., Kiboscho, German E. Africa; MADARASZ, Ann. Mus. Hungar. ii, p. 205.

Chlorophoneus miniatus, n. sp., Kiboscho, German E. Africa; id. t. c. ii, p. 205.

Pachycephala par, n. sp., S. W. Islands, Moluccas (Roma Is.); HARTERT, Nov. Zool. xi, p. 211: *P. par compar*, n. subsp., S. W. Islands (Letti, Moa); id. t. c. p. 212: *P. howensis*, n. sp., Lord Howe Is.; NORTH, Rec. Austral. Mus. v, pp. 125 & 126: = *P. contempta*; HARTERT, Bull. B. O. C. xv, p. 10: *P. gutturalis* and *P. occidentalis*, notes on; NORTH, t. c. p. 9; HARTERT, t. c. p. 10: *P. occidentalis* and allies, notes on; MILLIGAN, Emu iv, pp. 48-50.

Hyloterpe fallax, n. sp., Calayan Is., Babuyan, Philippine Archipelago; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 27, pl. v, fig. 2, *H. albiventris* (pl. v, fig. 1), and *H. philippinensis* (pl. v, fig. 2), figured; id. t. c. pl. v.

Eulacestoma nigropectus, figured; SCLATER, Ibis 1904, pp. 373-375, pl. ix.

Eopsaltria nana, Ramsay, notes on; SCLATER, Bull. B. O. C. xiv, p. 9: HARTERT, t. c. p. 10.

Family PARIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 375-436.

Pæcile cincta sayana, n. subsp., W. Sayan Mts. Altai; SUSHKIN, Bull. B. O. C. xiv, p. 44.

Parus major, in Caithness; SOUTHERLAND, Ann. Scott. Nat. Hist. 1904, p. 188.

Parus cyaneus, *P. cœruleus* and allied species, notes on; GROTE, Ornith. Monber. xii, pp. 175-177: *P. cœruleus languidus*, nom. emend. pro *P. c. pallidus* Grote (nec Brehm); GROTE, J. Ornith. 1904, p. 307: *P. montanus kleinschmidtii*, egg; HARTERT, Bull. B. O. C. xiv, p. 79: *P. atricapillus turneri*, note on; OSGOOD, North Amer. Fauna, No. 24, p. 80: *P. rufescens*, notes on the distribution; GRINNELL, Auk xxi, pp. 364-382, maps i-iii.

Bœolophus atricristatus sennetti, n. subsp., Texas; RIDGWAY, Birds, North and Middle Amer. iii, pp. 386 & 387: *B. inornatus restrictus*, n. subsp.,

- Oakland, California; id. t. c. p. 389: *B. inornatus murinus*, n. subsp., Southern California; id. t. c. pp. 389 & 390.
- Pentheres afer* (Gm.) distinct from *P. cinerascens* (V.), *P. intermedius* (Shelley) = *P. cinerascens*; SHARPE, Ibis 1904, p. 343.
- Cyanistes transchanicus* in Chitral; FULTON, J. Bombay Soc. xvi, p. 47.
- Ægithaliscus sharpei*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 84.
- Psaltiriparus minimus saturatus*, n. subsp., Puget Sound; RIDGWAY, Birds, N. & M. Amer. iii, pp. 434 & 435.
- Acredula tephronota passekii*, n. subsp., S. W. Persia; SARUDNY, Ornith. Monber. xii, p. 164.
- Acredula rosea* in the Outer Hebrides; MACKENZIE, Ann. Scott. Nat. Hist. 1904, p. 188.
- Remiza yenisensis*, n. sp., Upper Yenesei River, near Sayan; SUSHKIN, Bull. B. O. C. xiv, pp. 44 & 45: *R. pendulina centralasiæ*, n. subsp. [*R. stoliczkæ* Pleske, nec Hume], Central Asia; id. t. c. p. 45: *R. p. javartensis*, n. subsp., Turkestan; id. t. c. p. 45.
- Anthoscopus sylviella*, n. sp., Useguia; REICHENOW, Ornith. Monber. xii, p. 27: *A. minutus* (fig. 1) and *A. smithi* (fig. 2), figured; SHARPE, Ibis 1904, pl. viii.
- Aphelocephala nigrincta* North, notes on; NORTH, Bull. B. O. C. xv, p. 9; HARTERT, t. c. p. 10.

Family CHAMÆIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 683-691.

Family REGULIDÆ.

Regulus belongs to the *Sylviidæ*.

Cf. RIDGWAY, Birds, North and Middle Amer. iii, pp. 698-710.

Regulus cristatus coatsi, n. subsp., Subalpine zone of Sayan Mts.; SUSHKIN, Bull. B. O. C. xiv, p. 44.

Regulus satrapa olivaceus nesting in Western Washington; BOWLES, Condor vi, pp. 163-165: *R. calendula* in Lat. 53° 24' N., Long. 30° 15' W.; PATERSON, Ann. Scott. Nat. Hist. 1904, p. 55: nesting habits; SILOWAY, Condor vi, p. 14: *R. c. cineraceus*, n. subsp., Los Angeles County, California; GRINNELL, t. c. p. 25.

Family SITTIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 436-459.

Sitta tschitscherini, n. sp., Ispahan, Persia; SARUDNY, Ornith. Jahrb. xv, pp. 218 & 219: *S. victoriae*, n. sp., Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 84: *S. bifasciata*, n. sp., Krasnoyarsk, C. Siberia; MADARASZ, Ornith. Monber. xii, pp. 183 & 184: *S. caesia*, unusual nesting place; JOURDAIN, Zoologist 1904, p. 384.

Family CERTHIIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 459-473.

Certhia brachydactyla dorothea, n. subsp., Cyprus; HARTERT, Bull. B. O. C. xiv, pp. 50 & 51: remarks on the genus *Certhia*; id. t. c. p. 51.

Climacteris scandens in Tasmania; LEGGE, Emu iii, p. 181: *C. weiskei* and allied species, notes on; SCLATER, Bull. B. O. C. xv, pp. 9 & 10: HARTERT, t. c. p. 10.

Family ZOSTEROPIDÆ.

Zosterops omoensis, **n. sp.**, Omo River, N. E. Africa; NEUMANN, Ornith. Monber. xii, p. 162: *Z. luteirostris*, **n. sp.**, Gizo Isl., Solomon Islands; HARTERT, Bull. B. O. C. xiv, p. 61: *Z. toroensis*, **n. sp.**, Toro; REICHENOW, J. Ornith. 1904, p. 133: *Z. niassæ*, **n. sp.**, N. Nyasa Land; id. t. c. p. 133: *Z. flavissima* (nec Hartert), **n. sp.**, Cagayancillo Isl., Paragua Province, Philippine Archipelago; MCGREGOR, Bull. Philipp. Mus. No. 4, p. 26 [*Z. richmondi* nom. emend.; MCGREGOR, P. Soc. Washington xvii, p. 165]: *Z. senegalensis* and its allies; NEUMANN, Ornith. Monber. xii, pp. 109-114: *Z. toroensis* Reichenow = *Z. stuhlmanni* Reichenow, juv.; id. t. c. p. 112: *Z. jubaensis* Erlanger, probably = *Z. smithi* Neum.; id. t. c. p. 113: *Z. anderssoni* Shelley, from Mashona Land? = *Z. stierlingi* Reichenow, from Uhehe; id. t. c. p. 113: *Z. virens* and its allies; id. t. c. pp. 115-118: *Z. kikuyuensis*, **n. sp.**, Kikuyu to Kenia; id. t. c. p. 117: *Z. kaffensis*, **n. sp.**, Kaffa; id. t. c. p. 117: *Z. schoana*, **n. sp.**, Shoa to Upper Blue Nile (Abai); id. t. c. p. 117: *Z. consobrinorum*, **n. sp.**, Laloumera, South-east Celebes; MEYER, Notes Leyden Mus. xxiv, pp. 232-235: *Z. lettiensis* and its allies; HARTERT, Nov. Zool. xi, p. 213: *Z. bassetti* from Roma Isl., Moluccas; id. t. c. p. 214.

Family DICÆIDÆ.

Dicæum nigrilore, **n. sp.**, Mt. Apo, S. Mindanao; HARTERT, Bull. B. O. C. xiv, p. 8: *D. apo*, Mindanao, *D. bongæ*, Samar, **n. spp.**; HARTERT, Bull. B. O. C. xiv, pp. 79 & 80.
Eafa allied to *Rhamphocaris*; SALVADORI, Ibis 1904, p. 473.

Family NECTARINIIDÆ.

Æthopyga victoriae, **n. sp.**, Mt. Victoria, S. Chin Hills; RIPPON, Bull. B. O. C. xiv, p. 83.
Cinnyris marikuensis ovamboensis, **n. subsp.**, Ovampo Land; REICHENOW, J. Ornith. 1904, p. 133: *C. solaris exquisita*, **n. subsp.**, Wetter Isl., Moluccas; HARTERT, Nov. Zool. xi, p. 214: *C. s. degener*, **n. subsp.**, Flores, Lomblen, Alor Isl.; id. t. c. p. 214: *C. habessinica hellmayri*, **n. subsp.**, Hadramaut, S. Arabia; NEUMANN, Ornith. Monber. xii, p. 29.
Cyanomitra alinae, **n. sp.**, Ruwenzori Mts.; JACKSON, Bull. B. O. C. xiv, p. 94.

Family MELIPHAGIDÆ.

Melithreptus carpentariana, **n. sp.**, North Queensland; CAMPBELL, Emu iv, pp. 70 & 71: *M. leucogenys* Milligan, notes on; SCLATER, Bull. B. O. C. xv, p. 9: ? = *M. brevirostris*; HARTERT, t. c. p. 10: *M. brevirostris*, figured; CAMPBELL, Emu iii, pl. xvi, fig. 2.
Ptilotis novæ-norciæ, **n. sp.**, Wongan Hills, Western Australia; MILLIGAN, Emu iii, p. 226: *P. carteri*, figured; CAMPBELL, Emu iii, pl. xvi, fig. 1: *P. leilavalensis* vel *P. carteri*, notes on; MILLIGAN, Emu iv, pp. 51 & 52.
Acanthochæra mellivora and *A. lunulata*, notes on; id. t. c. p. 51.
Philemon cineraceus (Bp.), notes on; HARTERT, Nov. Zool. xi, p. 216.
Eafa belongs to the *Dicæidæ*; SALVADORI, Ibis 1904, p. 473.

Family MNIOTILTIDÆ.

- Helminthophila lawrencei* breeding in New York City; BEEBE, Auk xxi, pp. 387 & 388: *H. virginiae*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 50-52: *H. celata lutescens*, notes on; FINLEY, Condor vi, pp. 131-133.
- Dendroica crawfordi*, n. sp., Little Cayman Isl., W. I.; NICOLL, Bull. B. O. C. xiv, p. 95, fig.: id. Ibis 1904, pl. xi, fig. 1: *D. dominica* in Montserrat, W. I.; NICOLL, Ibis 1904, p. 571.
- Dendroica kirtlandi*, migration route; ADAMS, Bull. Michigan Ornith. Club v, pp. 14-21; breeding area; WOOD, t. c. pp. 3-13: breeding in Northern Michigan; ARNOLD, Auk xxi, pp. 487 & 488: in Georgia; HELME, t. c. p. 291: *D. townsendi*, nesting habits; SILLOWAY, Condor vi, pp. 12 & 13: *D. virens* in Kansas; SNOW, Auk xxi, p. 86: *D. tigrina* feeding on grapes; MCATEE, t. c. pp. 489-491: *D. subita*, n. sp., Barbuda; RILEY, Smithson. Collect. xlvii, pp. 289 & 290: *D. nigrescens*, notes on; FINLEY, Condor vi, pp. 31-35 cum tab.: *D. auduboni nigrifrons*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 54 & 55.
- Seiurus noveboracensis notabilis*, note on; MCATEE, Auk xxi, pp. 488 & 489.
- Geothlypis trichas arizela*, notes on; FINLEY, Condor vi, pp. 31-35 cum figg.: unusual nesting sites; JOHNSON, t. c. pp. 129-131.
- Setophaga picta*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 57 & 58.

Family MOTACILLIDÆ.

- Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 1-23.
- Motacilla lugubris*, nesting habits; JOURDAIN, Zoologist 1904, pp. 421 & 422, 456 & 457: *M. alba* in Ireland; WARREN, Irish Natural. xiii, p. 155: on Bartragh; WARREN, Zoologist 1904, pp. 227 & 228: *M. madaraspatensis*, eggs figured; DRESSER, Ibis 1904, pl. x, figg. 3 & 4: *M. borealis* in Sussex; NICOLL, Bull. B. O. C. xiv, p. 84.
- Budytes flavus alascensis*, n. subsp., Alaska; RIDGWAY, Birds, N. & M. Amer. iii, pp. 8-10.
- Anthus maculatus* and *A. trivialis*, nomenclature; BLANFORD, Ibis 1904, pp. 662 & 663: *A. campestris*, occurrences in England; NICOLL, Zoologist 1904, pp. 452-454: apparently a regular autumn migrant to the coast of Sussex; id. Bull. B. O. C. xv, p. 12: *A. calthorpe* Shelley = *A. caffer*; REICHENOW, Vög. Africas iii, p. 312: *A. cameroonensis* Shelley = *A. cinnamomeus*; id. t. c. p. 313: *A. vaalensis* Shelley = *A. leucophrys*; id. t. c. p. 316: *A. richardi* in Cornwall; HOWARD, Zoologist 1904, p. 115: *A. pratensis*, blue eggs; RADCLIFFE SAUNDERS, Bull. B. O. C. xiv, p. 42: *A. pensilvanicus*, note on; BAILEY, Auk xxi, p. 361: *A. spragueii* in Georgia; HELME, t. c. p. 291.
- Macronyx sharpei*, n. sp., Mau Downs, Equatorial Africa; JACKSON, Bull. B. O. C. xiv, p. 74.
- Charadriola*, n. g., type *C. singularis*, n. sp., Lake Jippe, Equatorial Africa; MADARASZ, Ann. Mus. Hungar. ii, pp. 396-398 cum fig. = *Tmetothylacus tenellus* Cab.; JACKSON, Ibis 1905, p. 104.

Family ALAUDIDÆ.

- Alaemon subcoronata* distinct from *A. semitorquata*; SHARPE, Ibis 1904, pp. 359-361: *A. bradshawi*, n. sp., Orange River; id. t. c. p. 361:

- A. damarensis*, **n. sp.**, Damara-land; id. t. c. p. 361: *A. benguelensis*, **n. sp.**, Benguela; id. t. c. p. 361.
- Otocoris*, key to Palearctic species; BIANCHI, Ibis 1904, pp. 370-372: *O. brandti montana*, Mts. of N. Central Asia, *O. b. przewalskii*, Zaidam, n. subsp.; id. t. c. p. 371: *O. elwesi khamensis*, n. subsp., Kham, S. E. Tibet; id. t. c. p. 372: *O. alpestris praticola*, breeding at Ipswich, Mass.; TOWNSEND, Auk xxi, p. 81.
- Melanocorypha calandra psammochroa*, n. subsp., Transcaspiæ; HARTERT, Vög. Pal. Faun. ii, p. 210: *M. c. raddei*, n. subsp., S. W. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 221 & 222.
- Calendula dunni*, **n. sp.**, Ogadeh, Sudan; SHELLEY, Bull. B. O. C. xiv, pp. 82 & 83.
- Devetia*, nomen emend pro *Botha* Shelley (nec Rafinesque); BUTURLIN, Auk xxi, p. 80.
- Alauda intercedens*, **n. sp.**, Greece; EHMEKE, Ann. Mus. Hungar. ii, p. 296: *A. balcanica*, **n. sp.**, Balkans; id. t. c. p. 297: *A. minuta*, **n. sp.**, Caucasus to Balkans and Greece; id. t. c. p. 298: *A. schach*, **n. sp.**, E. Persia; id. t. c. p. 299: *A. beludshistana*, **n. sp.**, Persian Beloochistan; id. t. c. p. 299: *A. cypriaca* and *A. insularis*, **n. spp.**, Cyprus; id. t. c. p. 300: *A. sordida*, **n. sp.**, Hungary; id. t. c. p. 300: *A. subtilis*, **n. sp.**, Montenegro; id. t. c. p. 301: *A. transcaspica*, **n. sp.**, Transcaspiæ; id. t. c. p. 301: *A. albigularis* Brehm in Hungary; id. t. c. p. 301: *A. cinerascens*, vice *Alauda cinerea* (nec Vieill.); EHMEKE, J. Ornith. 1904, p. 313: in Tunis, REICHENOW, t. c. p. 312: MATSCHIE, t. c. p. 314: *A. japonica inopinata*, n. subsp., ?locality; BIANCHI, Annuaire Mus. St. Petersb. ix, pp. xxiv, xxx & xxxi.
- Calandrella brachydactyla*, in the Flannan Islands; CLARKE, Bull. B. O. C. xv, p. 11: SAUNDERS, l. c.: CLARKE, Ann. Scott. Nat. Hist. 1904, p. 206: *C. minor polatzeki*, n. subsp., Lanzarote, Canary Is.; HARTERT, Vög. Pal. Faun. ii, p. 217: *C. minor seistanica*, n. subsp., S. W. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 22-24: *C. minor minuta*, n. subsp., Persia; id. t. c. p. 224.
- Mirafra marginata* Hawker = *M. cantillans*; REICHENOW, Vög. Afrikas iii, p. 335: *M. zombæ* Grant and *M. degeni* Grant = *M. fischeri*; id. t. c. p. 339: *M. transvaalensis* and *M. tropicalis* Hartert = *M. africana*; id. t. c. p. 343: *M. pallida* and *M. grisescens* Sharpe = *M. africana*; id. t. c. p. 343: *M. degeni*, figured; GRANT, Ibis 1904, pl. v: *M. horsfieldi pallidus*, n. subsp., Roebuck Bay Plains, N. W. Australia; HALL, Emu iii, pp. 231 & 232.
- Galerida schlüteri*, **n. sp.**, Algeria; KLEINSCHMIDT, Ornith. Monber. xii, pp. 196 & 197: *G. cristata caroli*, n. subsp., Natron Valley, Lower Egypt; HARTERT, Vög. Pal. Faun. ii, p. 234: *G. c. tardinata*, n. subsp., South Arabia; id. t. c. p. 235: *G. theklæ erlangeri*, n. subsp., North Morocco; id. t. c. p. 237.
- Ammomanes deserti orientalis*, n. subsp., N. E. Persia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 224 & 225: *A. lusitana erythrochroa*, n. subsp., Dongola; REICHENOW, J. Ornith. 1904, p. 307: *A. samharensis* Shelley = *A. saturata*; REICHENOW, Vög. Afrikas iii, p. 356: *A. assabensis*, distinct from *A. samharensis*; SALVADORI, Ibis 1904, p. 473 (cf. GRANT, t. c. p. 262): *A. phœnicuroides* and *A. zarudnii*, notes on; HARTERT, Ibis 1904, p. 543.
- Pyrrhuloxia madagascariensis* = *P. leucotis*; id. Vög. Afrikas iii, p. 365: ? *P. butleri* Shelley = *P. frontalis*; id. t. c. p. 370.

Family FRINGILLIDÆ.

- Ligurinus chloris*, "xanthochroism"; BLATHWAYT, Zoologist 1904, p. 32.
- Coccothraustes coccothraustes*, breeding in Fifeshire; BERRY, Ann. Scott. Nat. Hist. 1904, pp. 11-14: in East Lothian; TUNNARD, t. c. p. 126: in Shetland; SAXBY, t. c. p. 157: at Skerryvore Lighthouse; TOMISON, t. c. pp. 187 & 188: *C. vulgaris*, at Peterhead; SEARLE, Ann. Scott. Nat. Hist. 1904, p. 244: in Aberdeenshire; SIM, Zoologist 1904, p. 384.
- Zamelodia melanocephala*, nesting habits; HEAD, Condor vi, pp. 35-37: notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 44 & 45: nesting habits; FINLEY, Condor vi, pp. 145-148: *Z. ludoviciana*, its song; SCOTT, Science (n. s.) xix, pp. 957-959.
- Hesperiphona vespertina*, in the vicinity of Quebec; DIONNE, Auk xxi, p. 280: at Beverley, Mass.; BROWN, Auk xxi, p. 385: in Central New York; FUERTES, t. c. p. 385.
- Amauropiza axillaris* Sharpe = *A. mæsta* (Hartl.); HELLMAYR, Verh. Ges. Wien liv, pp. 516-518.
- Sporophila bouvreuil* vice *S. nigroaurantia*; HELLMAYR, Verh. Ges. Wien liv, p. 519: *S. saturata*, n. sp., Sao Paulo; id. t. c. p. 520: *S. cinnamomea* (Lafr.), notes on; id. t. c. p. 521: *S. lorenzi*, n. sp., ?Cayenne; id. t. c. pp. 522 & 523: *S. ruficollis* and *S. melanogastra*, notes on; id. t. c. pp. 523-526: *S. melanocephala ochrascens*, n. subsp., Rio Parana; id. t. c. p. 534: a key to the species of *Sporophila*; id. t. c. pp. 526-528, and further notes on the latter.
- Fringilla palmarum*, on Hierro Island; HARTERT, Bull. B. O. C. xiv, p. 51: *F. maderensis*, its note; NICOLL, Ibis 1904, pp. 555 & 556: *F. montiphila*, in the Philippine Islands (Calayan) in winter; MCGREGOR, Bull. Philipp. Mus., No. 4, p. 24.
- Carduelis elegans*, figured; BONHOTE, Avicult. Mag. (2) iii, pl. to p. 21, fig. 1: *C. caniceps*, figured; FINN, t. c. fig. 2.
- Montifringilla margaritacea*, n. sp., Altai Mts.; MADARASZ, Ornith. Monber. xii, p. 196: *M. alpicola groum-grzimaili*, n. subsp., Bei-schan, Central Asia; SARUDNY & LOUDON, Ornith. Jahrb. xv, pp. 215 & 216: *M. alpicola gaddi*, n. subsp., Province of Luristan, Persia; iid. t. c. p. 216: *M. brandti walteri*, n. subsp., Szetschwan and Kansu; HARTERT, Vög. Pal. Faun. ii, p. 138.
- Rhodopechys sanguinea*, in Chitral; FULTON, J. Bombay Soc. xvi, p. 53.
- Erythrospiza sanguinea*, eggs figured; DRESSER, Ibis 1904, pl. iii, fig. 5.
- Bucanetes obsoletus*, eggs figured; DRESSER, Ibis 1904, pl. iii, figg. 4 & 6.
- Acanthis linaria islandica*, n. subsp., Iceland; HANTZSCH, Ornith. Monber. xii, pp. 32-34: *A. rufescens*, breeding in Norfolk in brown plumage; MONTAGU, Bull. B. O. C. xiv, p. 91: *A. brevirostris*, nest and eggs described; FULTON, J. Bombay Soc. xvi, pp. 53 & 54: *A. hornemanni exilipes*, note on; OSGOOD, North Amer. Fauna, No. 24, pp. 72 & 73: *A. flavirostris*, nesting in North Devon; C. PEARSON, Bull. B. O. C. xiv, p. 91.
- Linota hornemanni* from Siberia; REICHENOW, J. Ornith. 1904, p. 570: *L. rufescens*, in Sicily; WHITAKER, Ibis 1904, p. 478: *L. pygmaea* = *Serinus pusillus* juv.; HARTERT, Nov. Zool. xi, p. 459.
- Petronia petronia brevirostris* Dyb., its range; SUSHKIN, Bull. B. O. C. xiv, p. 43.
- Gymnoris flavicollis transfuga*, n. subsp., Bagu Kelat, Baluchistan; HARTERT, Vög. Pal. Faun. ii, p. 145, figg. 30 & 31.
- Passer*, notes on the genus; HARTERT, Nov. Zool. xi, pp. 457-459: *P. tingitanus* Loche is the name for N. W. African form; id. t. c. p. 457: *P. pyrrhoptera* Less., notes on; id. t. c. p. 457: *P. rufipectus* Bp. is a N. E. African race of *P. hispaniolensis*; id. t. c. p. 458: *P. pallasii* Bp.

- is the Siberian form of *P. hispaniolensis*; id. t. c. p. 458: *P. ploceisoma* Bp. = *Philæterus socius*; id. t. c. p. 458: *P. rüppelli* Bp. = *Ploceipasser superciliosus*; id. t. c. p. 458: *P. confucius* = *P. jagoensis*; id. t. c. p. 458: *P. rufidorsalis* = *P. arboreus*; id. t. c. p. 458: *P. diffusus* and its allies; id. t. c. pp. 458 & 459: *P. motitensis* and its allies; id. t. c. p. 459: *P. domestica biblicus*, n. subsp., Palestine; id. Vög. Pal. Faun. ii, p. 149: *P. italiae senckenbergianus*, n. subsp., N. E. Africa; id. t. c. p. 152: *P. montana taivanensis*, n. subsp., Formosa; id. t. c. p. 161: *P. rutilans debilis*, n. subsp., Cashmere; id. t. c. p. 162: *P. flückigeri*, n. sp., Algeria; KLEINSCHMIDT, Ornith. Monber. xii, pp. 7, 197 & 198: *P. akasver*, n. sp., Marrakesch, S. Morocco; id. t. c. p. 7.
- P. hispaniolensis washingtoni* Tschusi is inseparable from *P. hispaniolensis*; REICHENOW, Vög. Afrikas iii, p. 237: *P. mesopotamicus*, n. sp., Mochammera, Persia; ZARUDNY, Ornith. Jahrb. xv, p. 108: *P. simplex*, *P. saharae*, and *P. zarudnyi*, notes on; HARTERT, Nov. Zool. xi, p. 460: *P. cinnamomeus*, imitating the song of *Purus atriceps*; FULTON, J. Bombay Soc. xvi, p. 54: *P. luteus*, breeding in captivity; WILLIAMS, Avicult. Mag. (2) iii, pp. 75-77.
- Alario leucolaema* Sharpe = *Alario alario*; REICHENOW, Vög. Afrikas iii, p. 246.
- Serinus hortulanus*, at Dover, Nov. 16; SETH-SMITH, Zoologist 1904, p. 457: *S. shelleyi* Neumann = *S. sharpei*; REICHENOW, Vög. Afrikas iii, p. 266.
- Crithagra estheræ*, figured; FINSCH, J. Ornith. 1904, pp. 122 & 123, taf. A. *Anomalospiza rendalli* Shelley = *A. imberbis* (Cab.); REICHENOW, Vög. Afrikas iii, p. 276.
- Loxia*, notes on the genus; HARTERT, Nov. Zool. xi, p. 460.
- Loxia curvirostra hispana*, n. subsp., Spain; HARTERT, Vög. Pal. Faun. ii, p. 119, fig. 27: *L. c. anglica*, n. subsp., England; id. t. c. pp. 119 & 120: *L. c. scotica*, n. subsp., Scotland; id. t. c. p. 120, fig. 24: *L. leucoptera*, in Kansas; SNOW, Auk xxi, p. 284.
- Pyrrhula erythrina*, in Radnorshire; SALTER, Zoologist 1904, p. 228.
- Pinicola enucleator canadensis*, on Long Island, New York; HELME, Auk xxi, pp. 280 & 281: DUTCHER, t. c. p. 281.
- Carpodacus thura* and its subspecies, *C. blythi* distinct from *C. dubius*; HARTERT, Nov. Zool. xi, p. 456.
- Carpodacus severzovi*, eggs figured; DRESSER, Ibis 1904, pl. iii, figg. 1 & 3: *C. synoica* [-us] (Temm.), the older name for *C. sinaiticus*; HARTERT, Nov. Zool. xi, p. 457.
- Hæmatospiza indica* (Gm.) the name for *H. sipahi*, auct.; HARTERT, Nov. Zool. xi, p. 456.
- Plectrophanes nivalis*, in Mid-Atlantic; BUTLER, Ibis 1904, pp. 304 & 305.
- Calcarius lapponicus*, in the Flannan Is., Outer Hebrides; CLARKE, Ann. Scott. Nat. Hist. 1904, pp. 206 & 207: in Norfolk; APLIN, Zoologist 1904, pp. 428 & 429: at Warwick; GROUND, t. c. p. 428: in Sussex; NICOLL, Bull. B. O. C. xv, p. 12.
- Emberiza cia*, its distribution in the Rhine Provinces; LE ROI, Ornith. Monber. xii, pp. 153-158.
- Emberiza cia par*, n. subsp., Gudan, Transcaspia; HARTERT, Vög. Pal. Faun. ii, p. 184: *E. schoeniclus pallidior*, n. subsp., Aiderli, Turkestan; id. t. c. p. 197: *E. s. othmari*, n. subsp., Bulgaria; id. t. c. p. 198: *E. pyrrhuloides reiseri*, n. subsp., Lamia, Thessaly; id. t. c. p. 199: *E. p. centralasie*, n. subsp., Maralbashi, Eastern Turkestan; id. t. c. p. 199.
- Emberiza pusilla*, in Orkney; CLARKE, Ann. Scott. Nat. Hist. 1904, pp. 14-16: near Rugby in October, 1902; CARROLL, Zoologist 1904, pp. 312 & 313: APLIN, Ibis 1904, pp. 306 & 307.

- Emberiza cirius*, time of song ; ANGUS, Zoologist 1904, p. 142 : in Worcestershire and Shropshire ; STEELE-ELLIOTT, Zoologist 1904, p. 457.
- Emberiza (Hypocentor) semenowi*, n. sp., Arabistan ; SARUDNY, Ornith. Jahrb. xv, pp. 217 & 218.
- Emberiza koslowi*, n. sp., Upper Mekong Valley ; BIANCHI, Bull. B. O. C. xiv, p. 80.
- Emberiza luteola* (figg. 7, 8, & 9), *E. spodocephala* (figg. 10 & 12), *E. cinerea* (fig. 11), *E. stewarti* (fig. 14), *E. stracheyi* (figg. 13 & 15), eggs figured ; DRESSER, Ibis 1904, pl. iii.
- Emberiza spodocephala*, in the Kusnetz Alatau ; SUSHKIN, Bull. B. O. C. xiv, p. 46.
- Fringillaria media*, n. sp., W. Cape Colony ; SHARPE, Ibis 1904, p. 354 : *F. dthala* Grant = *F. arabica* ; REICHENOW, Vög. Afrikas iii, p. 291.
- Cyanospiza ciris*, in Leon County, Florida ; WILLIAMS, Auk xxi, pp. 458 & 459.
- Zonotrichia leucophrys*, note on ; BAILEY, Auk xxi, p. 358.
- Ammodramus nelsoni*, breeding in North Dakota ; BOWMAN, Auk xxi, pp. 385 & 386.
- Melospiza lincolni striata*, notes on ; GRINNELL, Auk xxi, pp. 274-276.
- Coturniculus henslowii*, in Munroe Co., Pa. ; BAILEY, Auk xxi, p. 486.
- Passerculus princeps*, in Georgia ; HELME, Auk xxi, p. 291.
- Passerella unalaschensis*, note on ; OSGOOD, North. Amer. Fauna, No. 24, pp. 76 & 77.
- Chondestes grammacus*, in Oneida County, N. Y. ; JOHNSON, Auk xxi, pp. 281 & 282.
- Junco caniceps*, note on the nesting ; BAILEY, Auk xxi, pp. 358 & 359.
- Junco phænotus palliatus*, notes on ; SWARTH, Cooper Ornith. Club, California 1904, pp. 41-43.
- Aimophila ruficeps scotti*, in San Miguel Co., New Mexico ; BAILEY, Auk xxi, p. 447.
- Calamospiza melanocorys*, in San Miguel Co., New Mexico ; BAILEY, t. c. p. 448.
- Paroaria capitata*, development of colour in the adult ; BUTLER, P. Zool. Soc. London 1903, ii, pp. 350 & 351.
- P. larvata*, nesting in captivity ; id. Avicult. Mag. (2) ii, pp. 267-269.
- Spiza americana*, breeding in New Jersey ; MILLER, Auk xxi, p. 487.
- Euspiza americana*, extinction of the species East of the Alleghanies ; RHOADS, Cassinia 1903, pp. 17-28.

Family TANAGRIDÆ.

- Piranga ludoviciana*, nesting habits ; SILLOWAY, Condor vi, p. 14.
- Buarremon baeri*, n. sp., Tucuman ; OUSTALET, Bull. Mus. Paris 1904, p. 43.
- Saltator aurantiivirostris*, notes on the species in confinement ; BUTLER, Avicult. Mag. (2) ii, pp. 335-339 cum tab.

Family PLOCEIDÆ.

- Ploceidæ* of Africa ; cf. REICHENOW, Vög. Afrikas iii, pp. 1-225.
- Philetairus cabanisi euchorus*, n. subsp., Dabulli, Western Somali Land ; OBERHOLSER, P. U. S. Mus. xxvii, p. 683.
- Cryptospiza australis* Shelley = *C. salvadorii* ; REICHENOW, Vög. Afrikas iii, p. 174.
- Sporopipes frontalis emini* Neumann, is not entitled to subspecific rank ; REICHENOW, Vög. Afrikas iii, p. 17.

- Amadina marginalis* Sharpe = *A. fasciata* ; REICHENOW, Vög. Afrikas iii, p. 146.
- Nigrita kretschmeri* Reichenow = *N. diabolica* ; id. Vög. Afrikas iii, p. 171 : *N. dohertyi* Hartert = *N. diabolica* ; id. t. c. p. 171.
- Pytelia kirki* Shelley = *P. melba* ; id. t. c. p. 163 : *P. affinis* (Elliott) = *P. soudanensis* ; id. t. c. p. 164 : *P. jessei* Shelley = *P. citerior* ; id. t. c. p. 165.
- Coccopygia clarkei* Shelley = *Estrela subflava* ; id. t. c. p. 186.
- Poephila nigrotecta* Hartert = *P. atropygialis* (Diggles) ; NORTH, P. Linn. Soc. N. S. Wales xxix, p. 130.
- Hypochera wilsoni* Hartert = *H. funerea* ; REICHENOW, Vög. Afrikas iii, p. 215.
- Stictoptera bichenovii*, note on the sexes ; BUTLER, Avicult. Mag. (2) ii, pp. 219 & 220.
- Munia pectoralis*, notes on ; SETH-SMITH, Avicult. Mag. (2) ii, pp. 130-132 cum fig.
- Uroloncha malabarica*, is a migratory bird ; FULTON, J. Bombay Soc. xvi, p. 52.
- Estrilda peasei* Shelley = *E. minor* ; REICHENOW, Vög. Afrikas iii, p. 180 : *E. elizae* Alexander = *E. nonnula* ; id. t. c. p. 188 : *E. delamerei* Sharpe = *E. charmosyna* ; id. t. c. p. 190.
- Granatina hawkeri* Lort Phillips = *Uraeginthus ianthinogaster* ; REICHENOW, t. c. p. 211.
- Erythrura forbesi* Sharpe, not distinct from *E. tricolor* ; HARTERT, Nov. Zool. xi, p. 217.
- Sycobrotus zaphiroi* Grant = *S. emini* ; REICHENOW, Vög. Afrikas iii, p. 39.
- Hyphantornis shelleyi* = *Ploceus auricapillus* ; REICHENOW, t. c. p. 79.
- Ploceus lübberti* Reichenow = *P. cabanisi* ; id. Vög. Afrikas iii, p. 73 : *P. fülleborni* Reichenow = *P. nyasae* ; id. t. c. p. 72 : *P. pachyrhynchus* Reichenow = *P. superciliosus* Shelley ; id. t. c. p. 96.
- Ploceus melanozanthus malensis*, n. subsp., Male Land, N. E. Africa ; NEUMANN, Ornith. Monber. xii, pp. 162 & 163.

Family ICTERIDÆ.

- Molothrus ater*, its disappearance in Leon County, Florida ; WILLIAMS, Auk xxi, p. 457.
- Sturnella magna*, development of song ; SCOTT, Science (n. s.) xix, pp. 957-959.
- Sturnella magna neglecta*, in Southern Georgia ; HELME, Auk xxi, p. 280.
- Icterus parisorum*, notes on ; SWARTH, Cooper Ornith. Club, California 1904, pp. 34 & 35.
- Quiscalus versicolor*, note on ; BEDDARD, P. Zool. Soc. London 1904, ii, p. 2.

Family ORIOLIDÆ.

- Oriolus kundoo*, eggs figured ; DRESSER, Ibis 1904, pl. x, figg. 16 & 18 : *O. indicus*, eggs figured ; id. t. c. pl. x, figg. 14 & 17.
- Oriolus flavocinctus migrator*, n. subsp., S. W. Islands, Moluccas (Letti, Moa, Roma) ; HARTERT, Nov. Zool. xi, p. 218 : *O. finschi*, n. sp., Wetter Is., Moluccas (Wetter) ; id. t. c. p. 219 : *O. monachus* and *O. meneliki*, notes on ; GRANT, Ibis 1904, p. 256 : *O. monachus permistus*, n. subsp., N. E. Africa, S. of Hawash River ; NEUMANN, Ornith. Monber. xii, p. 145.

Family DICRURIDÆ.

Buchanga stigmatops phaedra, n. subsp., Padang, Sumatra; REICHENOW, deutsch. Tiefsee-Exped. Vög., p. 356.

Family EULABETIDÆ.

Calornis kuhni, n. sp., S. W. Islands, Moluccas (Wetter, Roma, Moa); HARTERT, Nov. Zool. xi, p. 220.

Amydrus and allied genera; NEUMANN, J. Ornith. 1904, pp. 567-569.

Family STURNIDÆ.

Sturnus vulgaris, migrations of; CLARKE, Rep. Brit. Ass. 1903, pp. 291-298: habits; WORKMAN, Zoologist 1904, p. 429: nesting in November; CORBIN, Zoologist 1904, pp. 457 & 458: curious nesting site; WORKMAN, Irish Natural. xiii, p. 250.

Sturnus vulgaris jirkowi, n. subsp., Trans-Volga District; BUTURLIN, Ornith. Jahrb. xv, pp. 206 & 207: *S. poltoratzkyi satunini*, n. subsp., Caucasus; id. t. c. p. 207: *S. zaidamensis*, n. sp., Central Asia; id. t. c. p. 208: *S. dzungaricus*, n. sp., Sungaria; id. t. c. p. 208: *S. purpurascens dresseri*, n. subsp., Trans-Caucasia and Trans-Caspia; id. t. c. pp. 208 & 209: *S. purpurascens johanseni*, n. subsp., Bucharra; id. t. c. p. 209: *S. tauricus*, n. sp., Crimea; id. t. c. pp. 209 & 210: *S. tauricus hartei*, n. subsp., Turkestan; id. t. c. pp. 210 & 211: *S. porphyronotus loudoni*, n. subsp., Eastern Russian Turkestan; id. t. c. p. 211: *S. poltaratzkyi*, *S. purpurascens*, and *S. porphyronotus* in Cyprus; MADARASZ, Ann. Mus. Hungar. ii, p. 526.

Pastor roseus, figured; HERMAN, Aquila xi, tab. ii.

Family PTILONORHYNCHIDÆ.

Chlamydodera guttata, nest described; NORTH, Rec. Austral. Mus. v, pp. 131 & 132, pl. xvi.

Family PARADISEIDÆ.

Phonygama purpureoviolacea, its trachea; GRANT, Bull. B. O. C. xiv, pp. 40 & 41.

Paryphephorus duivenbodei, in mountains of British New Guinea; ROTHCHILD, Bull. B. O. C. xiv, p. 7.

Family CORVIDÆ.

Cf. RIDGWAY, Birds, North and Middle America, pt. iii, pp. 252-374.

Corvidæ, food and habits of various species in Germany; RÖRIG, Arb. Gesund. Berlin i, pp. 285-400, 1900.

Corvus frugilegus, migrations of; CLARKE, Rep. Brit. Ass. 1903, pp. 298-304: distribution in Germany; RÖRIG, Arb. Gesund. Berlin i, pp. 273-400: in Hungary; HAUER, Aquila xi, pp. 318-327, with map: CSÖRGÉY, t. c. pp. 353-359: its food; SOOS, t. c. pp. 328-352.

Corvus corax, breeding in captivity; ST QUINTIN, Avicult. Mag. (2) ii, pp. 292 & 293.

C. corax sinuatus, in Southern New Hampshire; THAYER, Auk xxi, pp. 491-494.

C. cryptoleucus, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 32 & 33.

- C. prolegatus*, **n. sp.**, Ceylon [*C. splendens*, auct. ex Ceylon]; MADARASZ, Ornith. Monber. xii, pp. 195 & 196.
- C. splendens maledivicus*, **n. subsp.**, S. Maldives; REICHENOW, deutsch. Tiefsee-Exped. Vög., p. 356.
- C. americanus*, malformed bill; TAVERNER, Auk xxi, p. 279.
- C. corone*, in Sicily; WHITAKER, Ibis 1904, p. 477.
- C. cornix*, in Cheshire; NEWSTEAD, Zoologist 1904, p. 429 : migration in the Kurische Nehrung; THIENEMANN, Ornith. Monber. xii, pp. 166-168.
- Corvus cornix valachus*, **n. subsp.**, Masin, Roumania; TSCHUSI, Ornith. Jahrb. xv, p. 121.
- Corone pallescens*, **n. sp.**, Cyprus; MADARASZ, Ornith. Monber. xii, pp. 28 & 29.
- Colæus dauricus major*, **n. subsp.**, E. Tibet; BIANCHI, Annuaire Mus. St. Petersb. viii, p. 11, 1903.
- Nucifraga hemispila*, note on; OSBORN, J. Bombay Soc. xv, pp. 712-715 : CAPPER, op. cit. xvi, p. 158 : INGLIS, t. c. pp. 158 & 159.
- Cyanocitta stelleri diademata*, notes on; SWARTH, Cooper Ornith. Club, California 1904, p. 29.
- Aphlecoma unicolor caelestis*, **n. subsp.**, Highlands of Guatemala; RIDGWAY, Birds, North and Middle America iii, p. 345.
- Aphelocoma sieberii arizonæ*, notes on; SWARTH, Cooper Ornith. Club, California 1904, pp. 30-32.

IV. REPTILIA AND BATRACHIA.

BY

G. A. BOULENGER, F.R.S.

CONTENTS.

| | Page | | Page |
|----------------------------|------|--------------------------|------|
| I. TITLES | 1 | Emydosauria | 29 |
| II. FAUNÆ | 18 | Ichthyosauria | 30 |
| III. REFERENCES ARRANGED | | Chelonia | 30 |
| SYSTEMATICALLY | | Plesiosauria | 31 |
| Reptilia and Batrachia . . | 21 | Thecodontia | 31 |
| Reptilia | 21 | Pelycosauria | 32 |
| Squamata | 22 | Thalattosauria | 32 |
| Lacertilia | 22 | Rhynchocephalia | 32 |
| Rhaptoglossa | 25 | Anomodontia | 32 |
| Pythonomorpha | 25 | Cotylosauria | 33 |
| Dolichosauria | 26 | Pariosauria | 33 |
| Ophidia | 26 | Incertæ Sedis | 33 |
| Ornithosauria | 28 | Batrachia | 34 |
| Orthopoda | 28 | Ecaudata | 34 |
| Dinosauria | 29 | Caudata | 38 |
| | | Apoda | 40 |
| | | Stegocephalia | 40 |
| | | Incertæ Sedis | 40 |

I. TITLES.*

- ABBOTT, C. C. One explanation of reported showers of Toads. P. Amer. Phil. Soc. xliii, pp. 163 & 164.
- ALCOCK, A. Descriptions of and reflections upon a new species of Apodous Amphibian from India. Ann. Nat. Hist. (7) xiv, pp. 267-273, pl. vii.
- ALONZO, G. Ricerche sullo sviluppo della coda e degli arti nel *Gongylus ocellatus*. Atti Acc. Gioen. (4) xvi, 1903, No. 5, 48 pp.

* An asterisk prefixed to a title indicates that the Recorder has not seen the Journal or Work referred to.

- ANDERSSON, L. G. List of Reptiles and Batrachians collected by the Swedish Zoological Expedition to Egypt, the Sudan, and the Sinaitic Peninsula. Results Swedish Zoological Exped. Egypt and White Nile, 1901, i, 12 pp.
- ANDREWS, C. W. Note on the gigantic Land Tortoise (*Testudo ammon* Andrews) from the Upper Eocene of Egypt. Geol. Mag. (v) i, pp. 527-530, fig., pl. xvii.
- ANNANDALE, N. Additions to the collection of Oriental Snakes in the Indian Museum. J. Asiat. Soc. Bengal lxxiii, pp. 208-212, pl. ix.
- BALLOWITZ, E. Entwicklungsgeschichte der Kreuzotter (*Pelias berus* Merr.). I. Entwicklung vom Auftreten der ersten Furche bis zum Schlusse des Amnios. Jena, 1903, 4to, 295 pp., figg., 10 pls.
- BANCHI, A. Sviluppo degli arti addominali del *Bufo vulgaris* innestati in sede anomala. Monit. Zool. ital. xv, pp. 396-399, figg.
- BARBIER, H. Les Reptiles du Musée d'Elbeuf. Bull. Soc. Elbeuf xxii, pp. 41-63
- . Notes d'Erpétologie. Le repas de la Couleuvre à collier et de la Couleuvre lisse. Feuille Natural. xxxiv, pp. 55-60, figg.
- BARBIERI, C. Ricerche sullo sviluppo del midollo spinale negli Anfibi. Arch. zool. ital. ii, pp. 79-105, figg., pls. v & vi.
- BARBOUR, T. Batrachia and Reptilia from the Bahamas. Bull. Mus. Harvard xlv, pp. 55-61.
- . A new Batrachian from Sarawak, Borneo. P. Soc. Washington xvii, p. 51.
- BARBOZA DU BOCAGE, J. V. Contribution à la faune des Quatre Iles du Golfe de Guinée. J. Sci. Lisb. (2) vii, pp. 65-96.
- BATAILLON, E. Nouveaux essais de parthénogénèse expérimentale chez les Vertébrés inférieurs (*Rana fusca* et *Petromyzon planeri*). Arch. Entwicklmech. xviii, pp. 1-56, figg., pls. i-iv.
- . La segmentation parthénogénésique des œufs immatures de *Bufo* dans l'eau ordinaire. C.R. Soc. Biol. lvi, pp. 749-751.
- BATES, G. A. The histology of the digestive tract of *Amblystoma punctatum*. Tufts Coll. Stud. No. 8, pp. 411-435, pls. iii & iv.
- BEASLEY, H. C. Report on footprints from the Trias. Part I. Rep. Brit. Ass. 1903, pp. 219-230, figg., pls. v-viii.
- BEDDARD, F. E. On some points in the anatomy, chiefly of the heart and vascular system, of the Japanese Salamander, *Megalobatrachus japonicus*. P. Z. S. 1903, ii, pp. 298-315, figg.
- . On the trachea, lungs, and other points in the anatomy of the Hamadryad Snake (*Ophiophagus bungarus*). T. c. pp. 319-328, figg.
- . Contributions to our knowledge of the circulatory system in the Ophidia. Op. cit. 1904, i, pp. 331-370, figg.
- . Contributions to the anatomy of the Lacertilia.—(1) On the venous system in certain Lizards. T. c. pp. 436-450, figg.; (2) On some points in the structure of *Tupinambis*. T. c. pp. 465-470, figg.; (3) On some points in the vascular system of *Chamaeleon* and other Lizards. Op. cit. ii, pp. 6-22, figg.
- . Exhibition of a specimen of the Lizard *Chlamydosaurus kingii*. T. c. pp. 82 & 83.

- [BEDDARD, F. E.] Notes on the anatomy of certain Snakes of the family *Boidæ*. T. c. pp. 107-121, figg.
- . Note on an apparently abnormal position of the "Brephe" within the body of a Skink (*Chalcides lineatus*). T. c. pp. 145-147, fig.
- . Contributions to the knowledge of the visceral anatomy of the pelagic Serpents *Hydrus platyurus* and *Platyurus colubrinus*. T. c. pp. 147-154, figg.
- . On the presence of a parasternum in the Lacertilian genus *Tiliqua*, and on the poststernal ribs in that genus. T. c. pp. 154-157, figg.
- . Preliminary Note on certain points in the anatomy of *Eryx* and other *Boidæ*, partly indicative of their basal position among the Ophidia. Ann. Nat. Hist. (7) xiii, pp. 233-236.
- . "Abdominal ribs" in Lacertilia. Nature lxx, p. 6.
- BEECHER, C. E. The reconstruction of a Cretaceous Dinosaur, *Claosaurus annectens* Marsh. Tr. Connect. Ac. xi, 1903, pp. 311-323, pls. xli-xlv.
- BÉGUIN, F. L'intestin pendant le jeûne et l'intestin pendant la digestion. Études faites sur le Crapaud des joncs et le Lézard des murailles. Arch. anat. micr. vi, pp. 385-454, pls. xiii-xvi.
- . La muqueuse œsophagienne et ses glandes chez les Reptiles. Anat. Anz. xxiv, pp. 337-356, figg.
- BERNARDI, I. L'albinismo nei Rettili (*Natrix torquata*). Boll. Naturalista xxiv, pp. 12 & 13.
- . I Rettili e gli Anfibi del Livornese. T. c. pp. 14-16.
- . Il *Tropidonotus natrix* nel Livornese. T. c. pp. 71-73.
- BIGOT, A. & BRASIL, L. Description de la Faune des Sables jurassiques supérieurs du Calvados. Mem. Soc. Normandie xxi, pp. 85-108, pls. i-iv.
- BLANCHARD, R. Note complémentaire sur une anomalie de la carapace chez la Cistude d'Europe. Bull. Soc. zool. France xxix, p. 161.
- BOHN, G. De la lumière, de l'aliment et de la chlorophylle, comme facteurs du développement des Amphibiens. C.R. Ac. Sci. cxxxviii, pp. 1244 & 1245.
- . Influence de l'insolation des œufs d'Amphibiens sur l'évolution de l'embryon. C.R. Soc. Biol. lvi, pp. 663 & 664.
- . Influence des variations de l'éclairement sur les premiers stades larvaires des Amphibiens. T. c. pp. 767 & 768.
- . Intervention des influences passées dans les mouvements actuels d'un animal. T. c. pp. 789-791.
- . Intervention des influences passées dans la résistance à l'inanition d'un animal. T. c. pp. 791 & 792.
- BOLTON, H. The Palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii, pp. 378-420, 578-650, & 668-689.
- BOULENGER, G. A. On a remarkable Ichthyosaurian right anterior paddle. P. Z. S. 1904, i, pp. 424-426, fig.
- . On the characters and affinities of the Triassic Reptile *Telerpeton elginense*. T. c. pp. 470-480, fig., pls. xxx-xxxii.
- . Description of a new Tree-frog of the genus *Hyla*, from British Guiana, carrying eggs on the back. Op. cit. 1904, ii, p. 106, pl. v.

- [BOULENGER, G. A.] Description of a new genus of Frogs of the Family *Dyscophidae*, and list of the genera and species of that family. *Ann. Nat. Hist.* (7) xiii, pp. 42-44, pl. ii.
- . Descriptions of new Frogs and Snakes from Yunnan. *T. c.* pp. 130-134.
- . Descriptions of two new genera of Frogs of the family *Ranidae* from Cameroon. *T. c.* pp. 261 & 262.
- . Descriptions of three new Snakes. *T. c.* pp. 450-452.
- . Descriptions of two new Elapine Snakes from the Congo. *Op. cit.* xiv, pp. 14 & 15.
- . Note on *Hinulia pardalis* of Macleay. *T. c.* p. 80.
- . On the Sand-Viper of Roumania (*Vipera ammodytes*, var. *montandoni*). *T. c.* pp. 134 & 135.
- . Description of a new Lizard from Western Australia. *T. c.* pp. 414 & 415, pl. xi.
- . Descriptions of three new Frogs from Southern India and Ceylon. *J. Bombay Soc.* xv, pp. 430 & 431, pl. —.
- . Description of a Frog from Ceylon, hitherto confounded with *Rana limnocharis*. *Spolia Zeylan.* ii, pp. 73 & 74.
- . Description of a new Snake. *T. c.* pp. 95 & 96, pl. —.
- BRACHET, A. Recherches expérimentales sur l'œuf de *Rana fusca*. *Arch. Biol.* xxi, pp. 103-160, pl. iv.
- BRANCA, A. Le revêtement épithélial du fourreau chez les Colubridés. *Arch. zool. exp. Notes* (4) ii, pp. xxxvii-xlv.
- . Histogénèse de spermatozoïde, chez l'Axolotl. *T. c.* pp. cv-cxiii, figg.
- . Le testicule de l'Axolotl en captivité. *C.R. Soc. Biol.* lvi, pp. 243-245.
- . Cellules interstitielles et spermatogénèse. *T. c.* pp. 350 & 351.
- . Transformation de la spermatide en spermatozoïde chez l'Axolotl. *T. c.* pp. 704-706.
- BRANSON, E. B. Snakes of Kansas. *Kansas Univ. Sci. Bull.* ii, pp. 353-430, figg.
- BRAUER, A. Beiträge zur Kenntniss der Entwicklung und Anatomie der Gymnophionen. IV. *Zool. Jahrb. Suppl.* vii, pp. 381-408, figg., pls. xxi & xxii.
- BRAUS, H. Einige Ergebnisse der Transplantation Organanlagen bei Bombinatorlarven. *Verh. Anat. Ges.* 1904, pp. 53-65.
- BRIMLEY, C. S. The Box Turtles of Southeastern North America. *J. E. Mitchell Soc.* xx, No. 1, 8 pp.
- BROILI, F. Permische Stegocephalen und Reptilien aus Texas. *Palæontogr.* li, pp. 1-121, pls. i-xiii.
- . Pelycosaurierreste von Texas. *Zeitschr. Deutsch. geol. Ges.* lvi, pp. 268-272, fig., pl. xvii.
- . Stammreptilien. *Anat. Anz.* xxv, pp. 577-587, figg.

- BROOM, R. On the structure of the Theriodont mandible, and on its mode of articulation with the skull. P. Z. S. 1904, i, pp. 490-498, fig., pl. xxxv.
- . On the classification of the Theriodonts and their allies. Rep. S. African Ass. i, pp. 286-294.
- . On two new Therocephalian Reptiles (*Glanosuchus macrops* and *Pristerognathus baini*). Tr. S. African Soc. xv, pp. 85-88, pl. vi.
- . The origin of the Mammalian Carpus and Tarsus. T. c. pp. 89-96, pl. vii.
- . Observations on the structure of *Mesosaurus*. T. c. pp. 103-112, pl. ix.
- . On two new Endothiodont genera (*Prodicynodon* and *Opisthoctenenodon*). Rec. Albany Mus. i, pp. 69-73, pl. iv.
- . On a new species of *Oudenodon* (*O. trigoniceps*). T. c. pp. 73-75.
- . On some points in the anatomy of the Anomodont skull. T. c. pp. 75-82.
- . On the Theriodonts in the Albany Museum. T. c. pp. 82-87.
- . Note on the manus of *Procolophon*. T. c. p. 88.
- . Notes on two Reptilian tarsi in the Albany Museum. T. c. pp. 177 & 178.
- . On a new South African Labyrinthodont (*Cyclotosaurus albertyni*). T. c. pp. 178-180.
- . On a new species of *Oudenodon* (*O. megalorhinus*). T. c. pp. 180 & 181.
- . Note on a new fossil Reptile (*Scapanodon duplessisi*). T. c. pp. 182 & 183.
- . Notice of a new Endotheriodont genus (*Chelyoposaurus*). T. c. p. 184.
- . On the occurrence of an Opisthocœlian Dinosaur (*Algoasaurus bauri*) in the Cretaceous beds of South Africa. Geol. Mag. (v) i, pp. 445-447, fig.
- . On a new Crocodilian genus (*Notochampsia*) from the Upper Stormberg beds of South Africa. T. c. pp. 582-584, figg.
- BROWN, A. E. Note on *Crotalus scutulatus* Kenn. P. Ac. Philad. lv, p. 625.
- . Post-glacial Nearctic centres of dispersal for Reptiles. Op. cit. lvi, pp. 464-474.
- BROWN, B. Stomach stones and food of Plesiosaurs. Science (2) xx, pp. 184 & 185.
- BROWNE, F. B. *Emys orbicularis*, the European Pond Tortoise. Tr. Norfolk Soc. vii, pp. 754 & 755.
- BUSSY, L. P. DE. Eerste ontwikkelingsstadiën van *Megalobatrachus maximus* Schlegel. Tijdschr. Nederland Dierk. Ver. (2) viii, pp. 267-378, figg., pls. xi-xx.
- BUTLER, A. L. A list of the Batrachians known to inhabit the Malay Peninsula, with some remarks on their habits, distribution, &c. J. Bombay Soc. xv, pp. 387-402.

- BYRNES, ESTHER F. On the skeleton of regenerated anterior limbs in the Frog. Biol. Bull. vii, pp. 166-169, figg.
- . Regeneration of the anterior limbs in the tadpoles of Frogs. Arch. Entwicklmech. xviii, pp. 171-177, figg., pl. x.
- CAMERANO, L. Ricerche intorno alla variazione del *Bufo viridis* Laur., del *Bufo mauritanicus* Schlegel, e del *Bufo regularis* Reuss. Mem. Acc. Torino (2) liv, pp. 183-280.
- . Ricerche intorno alla variazione del *Phyllodactylus europæus* Gené. Boll. Mus. Torino xix, No. 471, 28 pp.
- CAMERON, J. On the presence and significance of the superior commissure throughout the Vertebrata. J. Anat. Physiol. norm. path. (2) xviii, pp. 275-292, pl. xxv & xxvi.
- . On the origin of the epiphysis in Amphibia as a bilateral structure. Rep. Brit. Ass. 1903, pp. 689 & 690.
- CARGIULO, A. Contributo all' istologia del tessuto di sostegno nelle glandole. Riv. Ital. xxiv, pp. 5-12.
- CARPI, U. Ueber die feinere Innervation des sogenannten präokularen Meniscus der Ophidien. Anat. Anz. xxv, pp. 225-230, figg.
- CASE, E. C. The Vertebrates from the Permian Bone Bed of Vermilion County, Illinois. Contr. Walker Mus. i, 1901, pp. 1-29, pls. i-v.
- . The osteology of the skull of the Pelycosaurian genus *Dimetrodon*. J. Geol. xii, pp. 304-311, figg.
- . On the structure of the fore foot of *Dimetrodon*. T. c. pp. 312-315, figg.
- . Systematic Paleontology. Miocene Reptilia. Maryland geol. Surv. 1904, pp. 62-70, pls. xxvi & xxvii.
- . A remarkably preserved specimen of a Pelycosaur collected during the last summer in Texas. Science (2) xix, p. 253.
- CASELLA, D. Le cours de l'involution absolue chez le *Gongylus ocellatus* placé dans un milieu saturé d'humidité. Arch. ital. Biol. xlii, pp. 273-288.
- CECCHERELLI, G. Sulle terminazioni nervose e paniere del Giacomini, nei muscoli dorsali degli Anfibi anuri adulti. Anat. Anz. xxiv, pp. 428-435, figg.
- *CEPÈDE, C. Les Serpents des Alpes. Grenoble (Annuaire Soc. Touristes Dauphiné), 1903, 8vo, 39 pp., figg.
- CERRUTI, A. Contribuzioni per lo studio dell' organo di Bidder nei Bufonidi. II. Presenza di spermii nell' organo. Boll. Soc. Napoli xvii, pp. 181-184, figg.
- COE, W. R. & KUNKEL, B. W. The reproductive organs of the limbless Lizard *Anniella*. Amer. Natural. xxxviii, pp. 487-490, figg.
- COHN, L. Die Schenkeldrüsen des *Cnemidophorus lemniscatus* Daud. Zool. Anz. xxvii, pp. 185-192, figg.
- COUVREUR, — & GAUTIER, —. Sur le rythme respiratoire du Caméléon. Ann. Soc. Linn. Lyon l, pp. 159 & 160.
- CREVATIN, F. Ueber die Nervenverbreitung im Augenlidapparate der Ophidien. Anat. Anz. xxiv, pp. 539-542, figg.
- CSIKI, E. Ueber einige Gattungsnamen. Zool. Anz. xxviii, pp. 266 & 267.

- CUSHMAN, J. A. A new foot-print from the Connecticut Valley. Amer. Geol. xxxiii, pp. 154-156, pl. vi.
- DAVIS, W. T. *Hyla andersoni* and *Rana virgatipes* at Lakehurst, New Jersey. Amer. Natural. xxxviii, p. 893.
- DEPOLI, G. Studi sul genere *Rana* L. Saggio di applicazione del metodo quantitativo. Riv. ital. Sci. Nat. xxiv, pp. 38-44, 68-74, 151-155.
- DE STEFANO, G. I Sauri del Quercy appartenenti alla collezione Rossignol. Atti Mus. Milano xlii, pp. 382-417, pls. ix & x.
- DITMARS, R. L. Observations on Lacertilians. Rep. New York Zool. Soc. 1903, pp. 146-160, figg.
- . The big Serpents. Bull. New York Zool. Soc. 1904, pp. 157-163, figg.
- DOLLO, L. Les Mosasauriens de la Belgique. Mem. Soc. Belge Geol. xviii, pp. 207-216, pl. vi.
- . L'origine des Mosasauriens. T. c. pp. 217-222.
- DOUGLAS OGILBY, J. Australian Crocodiles. P. Soc. Queensland xviii, pp. 201-213.
- DRÜNER, L. Studien zur Anatomie der Zungenbein-, Kiemenbogen- und Kehlkopfmusculatur der Urodelen. II. Theil. Zool. Jahrb. Anat. xix, pp. 361-690, figg., pls. xiv-xxv.
- DUBUISSON, H. Sur la résorption du vitellus dans le développement des Vipères. C.R. Soc. Biol. lvii, pp. 286-288, 437 & 438.
- EASTMAN, C. R. A recent palæontological induction. Science (2) xx, pp. 465 & 466.
- EATON, G. F. The characters of *Pteranodon* (second paper). Amer. J. Sci. (4) xvii, pp. 318-320, pls. xix & xx.
- ELLIOT, R. H. A contribution to the study of the action of Indian Cobra poison. Abstract. P. R. Soc. London lxxiii, pp. 183-190.
- ELLIOT, R. H., SILLAR, W. C. & CARMICHAEL, G. S. On the action of the venom of *Bungarus caeruleus* (the common Krait). Phil. Trans. B. cxvii, pp. 327-345.
- ELPATIEBSKI, V. P. Amphibia and Reptilia of the shores and Islands of the Sea of Aral. Scientific results of the Aral Expedition. Imp. Russ. Geogr. Soc. Tashkent 1903 [Russian text]. 30 pp., 2 pls.
- EMERSON, B. K. & LOOMIS, F. B. On *Stegomus longipes*, a new Reptile from the Triassic Sandstones of the Connecticut Valley. Amer. J. Sci. (4) xvii, pp. 377-380, pl. xxii.
- ESTERLY, C. O. The structure and regeneration of the poison glands of *Plethodon*. Univ. Calif. publ. Zool. i, pp. 227-268, pls. xx-xxiii.
- ETHERIDGE, R. JUN. A second Sauropterygian converted into opal, from the Upper Cretaceous of White Cliffs, New South Wales, with indications of Ichthyopterygians in the same locality. Rec. Austral. Mus. v, pp. 306-316, pls. xlii-xlv.
- EVANS, G. H. Notes on Burmese Reptiles. J. Bombay Soc. xvi, pp. 169-171.
- EYCLESHYMER, A. C. Bilateral symmetry in the egg of *Necturus*. Anat. ANZ. xxv, pp. 230-240, figg.
- FENTON, L. L. The Russell's Viper. J. Bombay Soc. xvi, pp. 173 & 174.

- FERGUSON, H. S. A list of Travancore Batrachians. J. Bombay Soc. xv, pp. 499-509, 3 pls.
- FILATOW, D. P. Zur Entwicklungsgeschichte des Excretionssystems der Amphibien. Anat. Anz. xxv, pp. 33-47, figg.
- FOURNIER, G. Découverte d'un ossement de Tortue dans une grotte de la région de la Meuse. Bull. Soc. geol. Belgique xxxi, p. 77.
- FRASER, Sir T. R. & ELLIOT, R. H. Contribution to the study of the action of Sea-snake venoms. Part I. Venoms of *Enhydryna valakadien* and *Enhydryis curtus*. Phil. Trans. B. cxvii, pp. 249-279.
- FRITSCH, A. Ueber einen neben *Cyclophthalmus* gefundener Stegocephalenrest, *Cordyloides carbonarius* Fr. Paläozoische Arachniden (Prague, 1904, 4to), pp. 79 & 80, figg.
- FUNAOKA, E. Ueber die Zuckungsform verschiedener Froschmuskeln. Verh. Ges. Würzburg (2) xxxvii, pp. 1-11, figg., pl. i.
- FÜRBRINGER, M. Zur Frage der Abstammung der Säugetiere. Festschr. Haeckel, pp. 573-604.
- FÜRST, C. M. Der Musculus popliteus und seine Sehne. Acta Univ. Lund. xxxix, 1903, ii, No. 1, 134 pp., figg., 9 pls.
- GADOW, H. Reptilia and Amphibia of Cambridgeshire. In J. E. MARR & A. E. SHIPLEY, Handbook to the Natural History of Cambridgeshire. Cambridge, 1904, pp. 100-107.
- GEORGE, C. P. A Cobra feeding on eggs. J. Bombay Soc. xvi, p. 174.
- GHIDINI, A. Revisione delle specie di Batraci sinora incontrata nel Cantone Ticino. Boll. Soc. ticinese i, pp. 32-40.
- GIANNELLI, L. Contributo allo studio dell' occhio parietale nei Rettili (*Seps chalcides*). Monit. Zool. ital. xv, pp. 187-197.
- . Contributo allo studio comparativo delle formazione del tatto del cervello intermedio in base a ricerche praticate sul loro sviluppo in embrioni di Rettili (*Seps chalcides*) e di Mammiferi (*Sus scrofa domesticus* e *Lepus cuniculus*). Nota preventiva. T. c. pp. 325-332.
- GOGGIO, E. Studi sperimentali sopra larve di Anfibi anuri. Atti Soc. Toscana xx, pp. 186-223, pls. vii & viii.
- GORDON, W. J. Our country's Animals and how to know them. Guide to Mammals, Reptiles, Amphibians of Great Britain. London, 1904, 8vo, 160 pp., 33 pls.
- GREIL, —. Ueber die sechsten Schlundtaschen der Amphibien und deren Beziehungen zu den suprarpericardialen (postbranchialen) Körpern. Verh. Anat. Ges. 1904, pp. 136 & 137, figg.
- GUIEYSSE, A. Quelques considérations sur la régression de la queue chez les têtards de *Bufo vulgaris*. Bull. Soc. Philom. (9) vi, pp. 189-191.
- GURWITSCH, A. Zerstörbarkeit und Restitutionsfähigkeit des Protoplasmas des Amphibieneies. Verh. Anat. Ges. 1904, pp. 146-152, figg.
- GRYNFELL, E. Notes histologiques sur la capsule surrénale des Amphibiens. J. Anat. Physiol. xl, pp. 180-220, pl. v.
- GWINNELL, W. F. On a small *Plesiosaurus*-skeleton from the White Lias of Westbury-on-Severn. Quart. J. Geol. Soc. lx, p. 359.
- HALL, R. W. The development of the mesonephros and the Müllerian ducts in Amphibia. Bull. Mus. Harvard xlv, pp. 31-125, figg., 8 pls.

- HARRISON, R. G. An experimental study of the relation of the nervous system to the developing musculature in the embryo of the Frog. *Amer. J. Anat.* iii, pp. 197-220, figg.
- HARVIE-BROWN, J. A. & MACPHERSON, H. A. A Vertebrate Fauna of Scotland. North-west Highlands and Skye. Edinburgh, 1904, 8vo, 378 pp.
- HAY, O. P. On two species of Turtles from the Judith River Beds of Montana. *Ann. Carnegie Mus.* iii, pp. 178-182, figg.
- . On the existing genera of the Trionychidæ. *P. Amer. Phil. Soc.* xlii, pp. 268-274.
- . On some fossil Turtles belonging to the Marsh Collection in Yale University Museum. *Amer. J. Sci.* (4) xviii, pp. 261-275, figg., pls. xi-xvi.
- . On the finding of skulls of Trionychidæ in the Bridger deposits of Wyoming. *Science* (2) xix, p. 254.
- HERRERA, A. L. Correspondence. *Amer. Natural.* xxxviii, p. 88.
- HERTWIG, O. Ueber eine Methode, Froscheier am Beginn ihrer Entwicklung im Raume so zu orientiren, dass sich die Richtung ihrer Teilebenen und ihr Kopf- und Schwanzende bestimmen lässt. *Festschr. Haeckel*, pp. 17-30, figg., pl. iii.
- HILL, M. D. Respiration in Frogs. *Nature* lxix, p. 489.
- HILTON, W. A. Segmentation of the ovum of *Desmognathus fusca*. *Amer. Natural.* xxxviii, pp. 498-500, figg.
- HOERNES, —. Ueber Koproolithen und Enterolithen. *Biol. Centrbl.* xxiv, pp. 566-576.
- HOYER, M. H. Ueber die Lymphherzen der Frösche. *Bull. Ac. Cracovie* 1904, pp. 228-237, figg.
- HUBBARD, MARIAN E. Correlated protective devices in some California Salamanders. *Univ. Calif. publ. Zool.* i, 1903, pp. 157-168, pl. xvi.
- HUENE, F. VON. *Dystrophæus vicemalæ* Cope in neuer Beleuchtung. *N. Jahrb. Min., Beil.* xix, pp. 319-333, pls. xiv-xvi.
- HUTTON, F. W. Index Faunæ Novæ Zealandiæ. London, 1904, 8vo, 372 pp.
- HYDE, IDA H. Differences in electrical potential in developing eggs. *Amer. J. Physiol.* xii, pp. 241-275.
- ISENSCHMID, M. Ueber eine von Dr Walther Volz in Sumatra gemachte Sammlung von Batrachiern. *Mt. Ges. Bern* 1903, pp. 68-100, pls. i-vi.
- ISHIKAWA, C. Beiträge zur Kenntniss des Riesen-Salamanders (*Megalobatrachus maximus* Schleg.). *P. Tokyo Mus.* i, pp. 19-37, pls. viii-xi.
- JAEKEL, O. Eine neue Darstellung von *Ichthyosaurus*. *Zeitschr. Deutsch. geol. Ges.* lvi, Verh. pp. 26-34, fig.
- . Ueber die Bildung der ersten Halswirbel und die Wirbelbildung im allgemeinen. *T. c. Protok.* pp. 109-119, figg.
- . Ueber den Schädelbau der Dicynodonten. *SB. Ges. naturf. Berlin* 1904, pp. 172-188, figg.
- JAKOWLEW, N. Ueber Plesiosaurus-Reste aus der Wolga-Stufe an der Lena in Sibirien. *Verh. Russ. Min. Ges.* (2) xli, pp. 13-16, fig., pl. i.

- JANENSCH, —. Ueber eine fossile Schlange aus dem Eocän des Monte Bolca. Zeitschr. Deutsch. geol. Ges. lvi, Protok. pp. 54-56 and SB. Ges. naturf. Berlin 1904, pp. 133-135.
- JANSSENS, F. A. Das chromatische Element während der Entwicklung des Ovocyts des Triton. Anat. Anz. xxiv, pp. 648-651.
- JENKINSON, J. W. Observations on the maturation and fertilisation of the egg of the Axolotl. Quart. J. Micr. Sci. xlviii, pp. 407-482, pls. xxix-xxxiii.
- . The effect of solutions of salt and other substances on the development of the Frog. Rep. Brit. Ass. 1903, pp. 693 & 694.
- JUKES-BROWNE, A. J. The Cretaceous Rocks of Britain. III. The Upper Chalk of England. Mem. geol. Surv. U. K. 1904.
- KAMMERER, P. Beitrag zur Erkenntnis der Verwandtschaftsverhältnisse von *Salamandra atra* und *maculosa*. Arch. Entwicklmech. xvii, pp. 1-102, pl. —.
- KEITH, A. Respiration in Frogs. Nature lxix, pp. 511 & 512.
- KERBERT, C. Zur Fortpflanzung von *Megalobatrachus maximus* Schlegel (*Cryptobranchus japonicus* v. d. Hoeven). Zool. Anz. xxvii, pp. 305-320, figg.
- KINGSLEY, J. S. & THYNG, F. W. The hypophysis in *Amblystoma*. Tufts Coll. Stud. No. 8, pp. 363-378, figg.
- KLUNZINGER, C. B. Ueber die Samenträger der Tritonen und ihre Beziehungen zum Kloakenwulst, nach E. Zeller's hinterlassenen Schriften. Verh. Deutsch. zool. Ges. 1904, pp. 36-46, figg.
- KNOBLAUCH, A. Die Art der Fortpflanzung des Alpen- und des Feuer-salamanders und das Anpassungsvermögen der beiden Salamanderarten an äussere Lebensbedingungen. Zool. Garten xlv, pp. 329-336, 361-368.
- KOCH, A. A beocsini czemetmárgából kikerült teknősmaradványok leírása. Ann. Mus. Hungar. ii, pp. 21-25, pls. vii & viii.
- KOLMER, W. Ueber ein Strukturelement der Stäbchen und Zapfen der Froschretina. Anat. Anz. xxv, pp. 102-104, fig.
- KOLOMBATOVIĆ, G. Contribuzioni alla fauna dei Vertebrati della Dalmazia. Glasnik Naravosl. druzt. xv, pp. 1-19.
- KREFFT, P. Herpetologische Reiseergebnisse in Hinterindien. Zool. Garten xlv, pp. 169-178, 201-207, 241-248.
- KUNITZKY, J. Die Entstehung und Entwicklung der Cuticularhärcchen auf den Pfoten von *Platydictylus mauritanicus*. Trudui St. Peterb. Obshch. xxxiv, 2, pp. 1-19, pl. —. [Russian text, German Résumé.]
- LAMB, G. Specificity of antivenomous sera (second communication). Sci. Mem. India (2) No. 10, 25 pp.
- LAMBE, L. M. On the squamoso-parietal crest of the Horned Dinosaurs *Centrosaurus apertus* and *Monoclonius canadensis*. Tr. R. Soc. Canada x, iv, pp. 3-10, pls. i & ii.
- . Progress of Vertebrate Palæontology in Canada. T. c. pp. 13-56.
- . On *Dryptosaurus incrassatus* (Cope) from the Edmonton Series of the North-west Territory. Contr. Canad. Pal. iii (4to), pt. iii, 27 pp., figg., 8 pls.

- [LAMBE, L. M.] The grasping power of the manus of *Ornithomimus altus*. Ottawa Natural. xviii, pp. 33-36, 2 pls.
- . On the squamoso-parietal crest of two species of Horned Dinosaurs from the Cretaceous of Alberta. T. c. pp. 81-86, 2 pls.
- LEIGHTON, G. Colour variation in *Vipera berus* (the Common Adder)—its extent, its significance and explanation. P. Phys. Soc. Edinb. xv, pp. 130-140, pl. iii.
- . Morphological variation in *Vipera berus*. Size and scaling. Op. cit. xvi, pp. 1-9.
- . Some recent observations on British Reptiles. Rep. Brit. Ass. 1903, p. 694.
- LEWIS, W. H. Experimental studies on the development of the eye in Amphibia. I. On the origin of the lens in *Rana palustris*. Amer. J. Anat. iii, pp. 505-536, figg.
- LIDTH DE JEUDE, T. W. VAN. Reptiles and Batrachians from Surinam. Notes Leyden Mus. xxv, pp. 83-94, pl. vii.
- LOEB, L. & STRONG, R. M. On regeneration in the pigmented skin of the Frog, and on the character of the chromatophores. Amer. J. Anat. iii, pp. 275-283.
- LOISEL, G. Substances toxiques extraites des œufs de Tortue et de Poule. C.R. Ac. Sci. cxxxix, pp. 325 & 326.
- . Les caractères sexuels secondaires et le fonctionnement des testicules chez la Grenouille. C.R. Soc. Biol. lvi, pp. 445-448.
- . Les poisons des glandes génitales. II. Recherches sur les ovaires de Grenouilles vertes. C.R. Soc. Biol. lvi, pp. 504-507. III. Recherches comparatives sur les toxalbumines contenues dans divers tissus de Grenouille. T. c. pp. 883-886.
- LOOMIS, F. B. Two new River Reptiles from the Titanotheres Beds. Amer. J. Sci. (4) xviii, pp. 427-432, figg.
- LUCAS, F. A. A new Batrachian and a new Reptile from the Trias of Arizona. P. U. S. Mus. xxvii, pp. 193-195, pls. iii & iv.
- . A new Plesiosaur. Smithson. Collect. xlv, p. 96, pl. xxviii.
- . The Dinosaur *Trachodon annectens*. T. c. pp. 317-320, figg., pls. lxxii & lxxiii.
- LULL, R. S. Fossil footprints of the Jura-Trias of North America. Mem. Boston Soc. v, pp. 461-557, figg., pl. lxxii.
- . Note on the probable footprints of *Stegomus longipes*. Amer. J. Sci. (4) xvii, pp. 381 & 382, figg.
- LYDEKKER, R. Vertebrate Palæontology of Cambridgeshire. In J. E. MARR & A. E. SHIPLEY, Handbook to the Natural History of Cambridgeshire. Cambridge, 1904, pp. 51-70.
- MANICASTRI, N. La rigenerazione di parti laterali delle code di larve di Anuri. Boll. Naturalista xxiv, pp. 1 & 2.
- MARIKOVSKY, G. A mérgek és a vérsavó. Termes. Kozl. Magyar Tars. 1904, pp. 524-534.
- MARKTANNER-TURNERETSCHER, G. Beitrag zur Kenntniss der Verbreitung der Giftschlangen in Steiermark. Mt. Ver. Steiermark xl, pp. 3-42, figg., pl.

- MATTHEW, G. F. An attempt to classify Palæozoic Batrachian footprints. Tr. R. Soc. Canada (2) ix, iv, 1903, pp. 109-121, figg.
- MCGREGOR, J. H. The relationships of the Phytosauria. Science (2) xix, pp. 254 & 255.
- MCGREGOR, R. Notes on Hawaiian Reptiles from the Island of Maui. P. U. S. Mus. xxviii, pp. 115-118.
- MÉHELY, L. v. Investigations on Paraguayan Batrachians. Ann. Mus. Hungar. ii, pp. 207-232, pl. xiii.
- . Eine neue *Lacerta* aus Ungarn. T. c. pp. 362-377, figg.
- . Ueber das Entstehen überzähliger Gliedmassen. Math. Naturw. Ber. Ungarn xx, pp. 239-259, figg.
- . Egy új gyíkfaj Magyarországon. Allatt. Kozl. Magyar Tars. iii, pp. 193-210, pl. v.
- . A Mecsekhegység és a Kapela herpetologiai viszonyai. T. c. pp. 241-289, figg.
- MERCIER, L. Sur la présence d'un exoplasme dans les cellules épithéliales de la queue du têtard de *Rana temporaria*. (Note préliminaire.) C.R. Soc. Biol. lviii, pp. 660-662.
- MERRIAM, J. C. A new marine Reptile from the Triassic of California. Bull. geol. Univ. Calif. iii, pp. 419-421, fig.
- . A new group of marine Reptiles from the Upper Triassic of California. Science (2) xix, p. 218.
- MEVES, F. Weitere Beobachtungen über den feineren Bau des Randreifens in den roten Blutkörperchen des Salamanders. Verh. Anat. Ges. 1904, pp. 37-40.
- . Die Hünefeld-Hensenschen Bilder der roten Blutkörperchen der Amphibien. Anat. Anz. xxiv, pp. 465-476, figg.
- . Zur Wirkung von Säure auf die roten Blutkörperchen der Amphibien. Op. cit. xxv, pp. 240-245.
- . Ueber das Auftreten von Deformationen des Randreifens bei den roten Blutkörperchen des Salamanders. T. c. pp. 465-472, figg.
- MICHAILOVSKY, M. On the herpetology of the Transcasian Province [Russian text]. Annuaire Mus. St. Petersb. ix, pp. 39-44.
- MILLER, G. A. A Viperine Snake which is oviparous. J. Bombay Soc. xv, pp. 729 & 730.
- MOCQUARD, F. Batraciens, Reptiles. In A. PAVIE, Mission Pavie Indo-Chine iii, pp. 471-494, pl. xxiii.
- . Description de quelques Reptiles et d'un Batracien nouveaux de la collection du Muséum. Bull. Mus. Paris 1904, pp. 301-309.
- MORGAN, T. H. The dispensibility of the constant action of gravity and of a centrifugal force in the development of the Toad's egg. Anat. Anz. xxv, pp. 94-96.
- . The relation between normal and abnormal development of the embryo of the Frog (III) as determined by some abnormal forms of development. Arch. Entwickelmech. xviii, pp. 507-534, pls. xxxi & xxxii.
- & TORELLE, E. The relation between normal and abnormal development (IV) as determined by Roux's experiment of injuring the first formed blastomeres of the Frog's egg. T. c. pp. 535-554, pl. xxxiii.

- MORGERA, A. Contributo allo studio di alcuni organi dell' apparecchio genitale maschile nelle specie nostrane del genere *Lacerta*. Nota preliminare. Boll. Soc. Napoli xvii, pp. 221-224, fig.
- MORSE, M. Batrachians and Reptiles of Ohio. Pap. Ohio Ac. No. 9, P. Ohio Ac. iv, pp. 93-144, figg., pl. i.
- MUNSON, J. P. Researches on the oogenesis of the Tortoise, *Clemmys marmorata*. Amer. J. Anat. iii, pp. 311-347, 7 pls.
- MUTHMANN, E. Ueber die erste Anlage der Schilddrüse und deren Lagebeziehung zur ersten Anlage des Herzens bei Amphibien, insbesondere bei *Triton alpestris*. Anat. Hefte. Arb. xxvi, pp. 1-48, figg.
- NEUMANN, T. Giftschlangen und Schlangengift. Ber. Senckenberg. Ges. 1904, pp. 72*-76*.
- NEUMAYER, L. Die Koprolithen des Perms von Texas. Palæontogr. li, pp. 121-128, pl. xiv.
- NICOLAS, A. Recherches sur l'embryologie des Reptiles. iv. La segmentation chez l'Orvet (*Anguis fragilis*). Arch. Biol. xx, pp. 611-658, pls. xvii-xix.
- NOC, F. Sur quelques propriétés physiologiques des différents venins de Serpents. Ann. Inst. Pasteur xviii, pp. 387-406.
- NOPCSA, F. Dinosaurierreste aus Siebenbürgen. III. (Weitere Schädelerreste von *Mochlodon*.) Denk. Ak. Wien lxxiv, pp. 229-263, figg., 2 pls.
- OSBORN, H. F. Manus, sacrum, and caudals of Sauropoda. Bull. Amer. Mus. xx, pp. 181-190, figg.
- . *Teleorhinus browni*, a Teleosaur in the Fort Benton. T. c. pp. 239 & 240.
- . Reclassification of the Reptilia. Amer. Natural. xxxviii, pp. 93-115, figg.
- . On the position of the bones of the forearm in the Opisthocœlia or Sauropoda. Science (2) xix, pp. 255 & 256.
- OVERTON, E. Neununddreissig Thesen über die Wasserökonomie der Amphibien und die osmotischen Eigenschaften der Amphibienhaut. Verh. Ges. Würzburg (2) xxxvi, pp. 277-295.
- PARKER, G. H. & STARRATT, S. A. The effect of heat on the colour changes in the skin of *Anolis carolinensis*. P. Amer. Ac. xl, pp. 457-466.
- PATRONI, C. A proposito della *Salamandrina perspicillata* (Savi). Annuar. Mus. Univ. Napoli (2) i, No. 14, 4 pp.
- PAVESI, P. Esquisse d'une Faune Valdôtaine. Atti Mus. Milano xliii, pp. 191-260.
- PELLEGRIN, J. Capture d'une Tortue Luth dans la Gironde. La Nature xxxii, pp. 321 & 322.
- PERACCA, M. G. Nouvelles espèces d'Ophidiens d'Asie et d'Amérique, faisant partie de la collection du Museum d'histoire naturelle de Genève. Rev. Suisse Zool. xii, pp. 663-668.
- . Viaggio del Dr A. Borelli nel Matto Grosso brasiliano e nel Paraguay, 1899. ix. Rettili ed Anfibi. Boll. Mus. Torino xix, No. 460, 15 pp., figg.

- [PERACCA, M. G.] Viaggio del Dr Enrico Festa nell' Ecuador e regioni vicine. Rettili ed Anfibi. T. c. No. 465, 41 pp.
- . Rettili ed Anfibi dell' Eritrea, raccolti del Dott. Achille Tellini nel 1903. T. c. No. 467, 6 pp.
- PEREZ, C. Résorption phagocytaire des spermatozoïdes chez les Tritons. C.R. Soc. Biol. lvi, pp. 783 & 784.
- *PETER, K. Normentafel zur Entwicklungsgeschichte der Zauneidechse (*Lacerta agilis*). Jena, 1904, 4to, 165 pp., figg., 4 pls.
- . Einiges über die Gastrulation der Eidechse. Sechste Mitteilung zur Entwicklungsgeschichte der Eidechse. Arch. mikr. Anat. lxiii, pp. 659–700, figg., pls. xxxi & xxxii.
- PETTIT, A. Remarques anatomiques sur le foie de l'*Alligator lucius* Cuv. Bull. Mus. Paris 1904, pp. 66–68, fig. and C.R. Soc. Biol. lvi, pp. 298–300, fig.
- & GEAY, F. Sur la glande cloacale du Caïman (*Jacaretinga sclerops* Schneid.). C.R. Soc. Biol. lvi, pp. 1087–1089.
- PHISALIX, C. Recherches sur les causes de l'immunité naturelle des Vipères et des Couleuvres. C.R. Ac. Sci. cxxxviii, pp. 1459–1461, C.R. Soc. Biol. lvi, pp. 976–978, and Bull. Mus. Paris 1904, pp. 380–382.
- . Sur un nouveau caractère distinctif entre le venin des Vipéridés et celui des Colubridés. C.R. Soc. Biol. lvii, pp. 486–488, and t. c. pp. 491–493.
- PILLAY, R. S. N. Notes on the structure of the teeth of some poisonous Snakes found in Travancore. Ann. Nat. Hist. (7) xiii, pp. 238 & 239.
- POCHE, F. Richtigstellung eines Gattungsnamens unter den Colubriden. Zool. Anz. xxviii, pp. 37 & 38.
- . Zur Nomenclatur der Salamandriden. Zool. Ann. i, p. 50.
- POLL, H. Die Anlage der Zwischenniere bei der europäischen Sumpfschildkröte (*Emys europæa*). Int. Monatsschr. Anat. xxi, pp. 195–291, figg., pl. v.
- PORCHET, —. Sur l'influence du sulfate de cuivre pour le développement de l'œuf de Grenouille. Arch. Sci. Nat. (4) xviii, pp. 205 & 206.
- RABL, H. Ueber die Vorniere und die Bildung des Müller'schen Ganges bei *Salamandra maculosa*. Arch. mikr. Anat. lxiv, pp. 258–359, figg., pls. xvi–xxii.
- . Ueber die Entwicklung des Tubentrichters und seiner Beziehungen zum Bauchfell bei *Salamandra maculosa*. T. c. pp. 665–693, pls. xxxvii–xl.
- REESE, A. M. The sexual elements of the Giant Salamander, *Cryptobranchus alleghaniensis*. Biol. Bull. vi, pp. 220–223, figg., and Amer. Natural. xxxviii, pp. 487–490, figg.
- REINHARDT, A. Die Hypochorda bei *Salamandra maculosa*. Morphol. Jahrb. xxxii, pp. 195–231, pls. v & vi.
- REYNOLDS, S. H. Vertebrata, with notes on the position of the [Rhætic, South Wales] Bone-bed. Quart. J. Geol. Soc. lx, pp. 208–210.
- RIGGS, E. S. Dinosaur footprints from Arizona. Amer. J. Sci. (4) xvii, pp. 423 & 424, fig.
- ROGERS, L. The physiological action and antidotes of Colubrine and Viperine Snake venoms. Phil. Trans. B. cxcvii, pp. 123–191.

- ROSÉN, N. Ueber die Kaumuskeln der Schlangen und ihre Bedeutung bei der Entleerung der Giftdrüse. Zool. Anz. xxviii, pp. 1-7, figg.
- ROUX, J. Reptilien und Amphibien aus Celebes. Verh. Ges. Basel xv, pp. 425-433, pl. viii.
- RUTHVEN, A. G. Butler's Garter Snake. Biol. Bull. vii, pp. 289-299, figg.
- SAMPSON, LILIAN V. A contribution to the embryology of *Hylodes martinicensis*. Amer. J. Anat. iii, pp. 473-504, figg., 2 pls.
- SANGIORGI, D. Appunti zoologici sull' isola di Cephalonia. Atti Soc. Modena (4) iv, pp. 69-98.
- SCHAPER, A. Ueber einige Fälle atypischer Linsenentwicklung unter abnormen Bedingungen. Anat. Anz. xxiv, pp. 305-326, figg.
- . Experimentelle Untersuchungen über den Einfluss der Radiumstrahlen und der Radiumemanation auf embryonale und regenerative Entwicklungsvorgänge. Op. cit. xxv, pp. 298-314 & 326-337, figg.
- SCHMIDT, W. E. Ueber *Metriorhynchus jaekeli* nov. sp. Zeitschr. Deutsch. geol. Ges. lvi, Protok. pp. 97-108, figg., pls. xi & xii.
- SEELEY, H. G. Footprints of small fossil Reptiles from the Karroo rocks of Cape Colony. Ann. Nat. Hist. (7) xiv, pp. 287-289, figg.
- . On a new type of Reptilian tooth (*Ptychocynodon*) from the Upper Karroo Beds near Burghersdorp, Cape Colony. T. c. pp. 290-293, figg.
- . On a primitive type of vertebra from the Lower Karroo Beds of Cape Colony (*Tamboeria maraisi*). T. c. pp. 336-344, figg.
- SEWERTZOFF, A. N. Die Entwicklung der pentadaktylen Extremität der Wirbeltiere. Anat. Anz. xxv, pp. 472-494, figg.
- SIEBENROCK, F. Schildkröten von Brasilien. Denk. Ak. Wien lxxvi, pp. 1-28, pls. i-iii. Abstract, Anz. Ak. Wiss. 1904, pp. 54-56.
- . Ueber partielle Hemmungs-Erscheinungen bei der Bildung einer Rückenschale von *Testudo tornieri* Siebenr. SB. Ak. Wien cxiii, pp. 29-34, figg. Abstract, Anz. Ak. Wiss. 1904, pp. 34 & 35.
- . Die Südafrikanischen *Testudo*-Arten der *Geometrica*-Gruppe s. l. T. c. pp. 307-323, pls. i-v. Abstract, Anz. Ak. Wiss. 1904, pp. 230-232.
- . Eine neue *Testudo*-Art der *Geometrica*-Gruppe aus Südafrika. Anz. Ak. Wiss. 1904, pp. 194 & 195.
- . Zur Systematik der Schildkröten-Gattung *Orlitia* Gray. Zool. Anz. xxvii, pp. 580-582.
- SIEGLBAUER, F. Zur Anatomie der Urodelenextremität. Arch. Anat. 1904, pp. 385-404, pl. xxii
- SMITH, H. M. Notes on the breeding habits of the yellow-bellied Terrapin. Smithson. Collect. i, pp. 252 & 253.
- SNYDER, C. D. Locomotion in *Batrachoseps* with severed nerve-cord. Biol. Bull. vii, pp. 280-288.
- SOKOLOWSKY, A. Die Variation der Schuppenbildung des Kopfes von *Scincus officinalis* Gray. Biol. Centrbl. xxiv, pp. 754-761, figg.
- SPEMANN, H. Ueber experimentell erzeugte Doppelbildung mit cyclopischem Defect. Zool. Jahrb. Suppl. vii, pp. 429-470, figg., pls. xxiii & xxiv.

- STADERINI, R. L'occhio parietale di alcuni Rettili e la sua funzionalità. *Monit. Zool. ital.* xv, pp. 341-343.
- STERZI, A. I. I gruppi cellulari periferici nella midolla spinale dei Rettili. *Atti Soc. Toscana* xx, pp. 243-275, pls. ix & x.
- STEJNEGER, L. The Herpetology of Porto Rico. *Rep. U. S. Mus. for* 1902, pp. 549-724, figg., 1 pl.
- . A new species of Lizard from the Riukiu Archipelago, Japan. *Smithson. Collect.* xlvii, pp. 294 & 295.
- . A new Lizard from the Rio Grande Valley, Texas. *P. Soc. Washington* xvii, pp. 17-20.
- . Amphibia versus Batrachia. *Science* (2) xx, pp. 924 & 925.
- TIRANT, G. Liste des Tortues de l'Indo-Chine. In A. PAVIE, *Mission Pavie Indo-Chine* iii, pp. 493 & 494.
- TODD, ANNE H. Results of injuries to the blastopore region of the Frog's embryo. *Arch. Entwicklmech.* xviii, pp. 489-506, figg., pls. xxix & xxx.
- TÖLG, F. Beiträge zur Kenntniss drüsenartiger Epidermoidalorgane der Eidechsen. *Arb. Zool. Inst. Wien* xv, pp. 119-154, pls. ix-xi.
- TORNIER, G. Entstehen und Bedeutung der Farbkleidmuster der Eidechsen und Schlangen. *SB. Ak. Berlin* 1904, pp. 1203-1214, figg.
- . Bau und Betätigung der Kopflappen und Halsluftsäcke bei Chamäleon. Ein Beitrag zur Biotechnik. *Zool. Jahrb. Anat.* xxi, pp. 1-40, pls. i & ii.
- . Ueber das Auffinden von *Tropidonotus tessellatus* (Laur.) in Mitteldeutschland. *SB. Ges. naturf. Berlin* 1904, pp. 197 & 198.
- . Entstehen der Farbkleidmuster und Körperform der Schildkröten. *T. c.* pp. 297-307.
- TÓTH, Z. Adatok a voröshasú unka (*Bombinator igneus* Laur.) ovetokjának alaktani ismeretéhez. *Allatt. Kozl. Magyar Tars.* iii, pp. 89-98 & 117, pls. i-iii.
- ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg. *Verh. Ver. Hamburg* (3) xi, pp. 1-24.
- VAILLANT, L. La livrée néotésique de la Tortue sillonnée (*Testudo calcarata* Schneider). *Bull. Mus. Paris* 1904, pp. 186 & 187, figg.
- . Le grand Serpent de mer observé de nouveau dans la Baie d'Along. *T. c.* pp. 217 & 218.
- . Quelques Reptiles, Batraciens et Poissons du Haut Tonquin. *T. c.* pp. 297-301.
- . Sur l'habitat singulier d'un Batracien Anoure (*Megalixalus leptosomus* Peters) de l'Afrique tropicale ouest. *T. c.* pp. 436-438.
- VAN PÉE, P. Les membres chez *Amphiuma*. *Anat. Anz.* xxiv, pp. 476-482, figg.
- VASILJEV, L. *Eumeces scutatus* in the Transcaspian Province [Russian text]. *Annuaire Mus. St Petersburg* ix, pp. xiii-xv.
- VEITH, G. A koezkás sikló (*Tropidonotus tessellatus* Laur.) életéből. *Allatt. Kozl. Magyar Tars.* iii, pp. 229, 230 & 239.
- VERRILL, A. E. Additions to the Fauna of the Bermudas from the Yale Expedition of 1901, with Notes on other species. *Tr. Connect. Ac.* xi, 1903, pp. 15-62.

- [VERRILL, A. E.] The Bermuda Islands. T. c. pp. 413-956, figg.
- VERSLUYS, J. Jun. Ueber Kaumuskeln bei Lacertilier. Anat. Anz. xxiv, pp. 641-644.
- VINASSA DE REGNY, P. E. Fossili ed impronte del Montenegro. Boll. Soc. geol. Ital. xxiii, pp. 307-322, pl. ix.
- VOLZ, W. Schlangen von Palembang (Sumatra). Zool. Jahrb. Syst. xx, pp. 491-508.
- WALL, F. Cannibalism in Snakes. J. Bombay Soc. xv, pp. 524 & 525.
- . Occurrence of a rare Sea Snake (*Distira gillespiei*) on the Malabar coast. T. c. pp. 723-726, fig.
- WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Festschr. Haeckel, pp. 133-214, figg., pl. viii.
- WENDELSTADT, —. Experimentelle Studien über Regenerationsvorgänge am Knochen und Knorpel. Arch. mikr. Anat. lxiii, pp. 766-795, pls. xxxviii-xliii.
- WERNER, F. Reptilien und Batrachier. Ergebnisse der Hamburger Magalhaenischen Sammelreise. vii. 21 pp., 1 pl.
- . Zur Kenntniss der *Lacerta danfordi* Gthr. und der oxycephalen Eidechsen überhaupt. Zool. Anz. xxvii, pp. 254-259.
- . Beschreibung neuer Reptilien aus den Gattungen *Acanthosaura*, *Calotes*, *Gastropholis* and *Typhlops*. T. c. pp. 461-464.
- WICKES, W. H. The Rhætic Bone Beds. P. Bristol Soc. (2) x, pp. 213-227.
- WIELAND, G. R. Structure of the Upper Cretaceous Turtles of New Jersey: *Adocus*, *Osteopygis*, and *Propleura*. Amer. J. Sci. (4) xvii, pp. 112-132, figg., pls. i-ix.
- . Structure of the Upper Cretaceous Turtles of New Jersey: *Lytoloma*. Op. cit. xviii, pp. 183-196, figg., pls. v-viii.
- WILDER, H. H. The early development of *Desmognathus fusca*. Amer. Natural. xxxviii, pp. 93-115, figg.
- WILLISTON, S. W. The temporal arches of the Reptilia. Biol. Bull. vii, pp. 175-192, figg.
- . The relationships and habits of the Mosasaurs. J. Geol. xii, pp. 43-51.
- . Notice of some new Reptiles from the Upper Trias of Wyoming. T. c. pp. 688-697, figg.
- . The fingers of Pterodactyls. Geol. Mag. (v) 1, pp. 59 & 60.
- . The stomach stones of the Plesiosaurs. Science (2) xx, p. 565.
- WILLEY, A. *Dendrophis bifrenalis* Boulenger. Spolia Zeylan. i, pp. 116 & 117.
- WINSLOW, G. M. Three cases of abnormality in Urodeles. Tufts Coll. Stud. No. 8, pp. 387-410, pls. i & ii.
- WINTREBERT, P. Sur la valeur comparée des tissus de la queue au point de vue de la régénération chez les larves d'Anoures et sur l'absence possible de cette régénération. C.R. Ac. Sci. cxxxix, pp. 432-434.
- . Sur la position des centres nerveux réflexes de la queue chez les larves d'Anoures. C.R. Soc. Biol. lvi, pp. 581 & 582.

- [WINTREBERT, P.] Sur la limite des zones périphériques d'innervation réflexe des centres nerveux dans la queue des Urodèles. T. c. pp. 582-584.
- . Sur la régénération des membres postérieurs chez l'*Axolotl* adulte, après ablation de la moelle lombo-sacrée. T. c. pp. 725 & 726.
- WOLTERSTORFF, W. Ueber *Triton blasii* de l'Isle und den experimentellen Nachweis seiner Bastardnatur. Zool. Jahrb. Syst. xix, pp. 647-661.
- . Beiträge zur Fauna der Tucheler Heide. Schr. Ges. Danzig (2) xi, pp. 1-101, pl. i.
- . Ueber das Vorkommen des *Triton palmatus* Schneid. bei Harburg. Zool. Anz. xxviii, pp. 59-63.
- . *Triton blasii* de l'Isle, ein Kreuzungsprodukt zwischen *Triton marmoratus* und *T. cristatus*. T. c. pp. 82-86.
- WOODLAND, W. Note on an abnormal condition of the bladder in the Frog (*Rana temporaria*). Zool. Anz. xxviii, pp. 404 & 405, fig.
- WOODWARD, A. S. On two new Labyrinthodont skulls of the genera *Copitosaurus* and *Aphaneramma*. P. Z. S. 1904, ii, pp. 170-176, fig., pls. xi & xii.
- . On some Dinosaurian bones from South Brazil. Rep. Brit. Ass. 1903, p. 663.
- . Notes from footprints from the Keuper of South Staffordshire. J. Northampt. Soc. xii, pp. 22-24, figg.
- WOODWARD, H. The President's Address: The evolution of Vertebrate Animals in time. J. R. Micr. Soc. 1904, pp. 137-164.
- YAKOWLEW, N. Nachtrag zu meiner Abhandlung "Neue Funde von Trias-Sauriern auf Spitzbergen" und Bemerkungen zu der von Prof. Koken verfassten Rezension dieser Abhandlung. Verh. Russ. Min. Ges. (2) xli, p. 165-169, fig.
- YUNG, E. De l'influence du régime alimentaire sur la longueur de l'intestin chez les larves de *Rana esculenta*. C.R. Ac. Sci. cxxxix, pp. 749-751.
- ZANG, R. Faunistische und biologische Bemerkungen zu einigen deutschen Reptilien und Amphibien. Zool. Anz. xxvii, pp. 701-704.
- . Zur horizontalen und vertikalen Verbreitung einiger Reptilien und Amphibien in Deutschland und der Schweiz. Op. cit. xxviii, 249-251.

II. FAUNÆ.

EUROPE.

Great Britain. Popular work by W. J. GORDON, Our Country's Animals, &c. Guide to Mammals, Reptiles, and Amphibians. London, 1904, 8vo, 160 pp., 33 pls.—On the habits and distribution of some Reptiles: G. LEIGHTON, Rep. Brit. Ass. 1903, p. 694.

Scotland. List of the Reptiles and Batrachians of the North-West Highlands and Skye: HARVIE-BROWN & MACPHERSON, Vertebr. Faun. Scotland. North-West Highland and Skye. Edinburgh, 1904, 8vo, pp. 362-364.

Cambridgeshire. On the Reptiles and Batrachians: GADOW, Handbook Nat. Hist. Cambridgeshire, pp. 100-107.

Alps of Dauphiné. C. CEFÈDE, Les Serpents des Alpes, Grenoble, 1903, 8vo, 39 pp., figg.

Switzerland. On the Batrachians of Tessin : GHIDINI, Boll. Soc. Ticin. i, pp. 32-40.

Germany. Notes on the habits and distribution of various Reptiles and Batrachians, by R. ZANG, Zool. Anz. xxvii, pp. 701-704, and xxviii, pp. 249-251.

North Germany. On the Reptiles and Batrachians of the Tucheler Heide : WOLTERSTORFF, Schr. Ges. Danzig (2) xi, pp. 1-101, pl. i.—List of the Reptiles and Batrachians of the Eppendorf Fen near Hamburg by G. ULMER, Verh. Ver. Hamburg. (3) xi, p. 6.

Styria. On the Snakes : G. MARKTANNER-TURNERETSCHER, Mt. Ver. Steiermark xl, pp. 3-42, figg., pl. —.

S. W. Hungary. On the Reptiles and Batrachians of the Mecsek and Kapela Mountains : L. V. MÉHELÛ, Allatt. Kozl. Magyar Tars. iii, pp. 241-289, figg.

Dalmatia. Additions to the list of Reptiles and Batrachians inhabiting the islands of the Dalmatian Coast, by G. KOLOMBATOVIC, Glasnik Naravosl. druzt. xv, pp. 10 & 11.

Aosta Valley. On the Reptiles and Batrachians : PAVESI, Atti Mus. Milano xliii, pp. 213-215.

Province Leghorn. On the Reptiles and Batrachians : I. BERNARDINO, Boll. Naturalista xxiv, pp. 14-16.

Cephalonia Id., Greece. On the Reptiles and Batrachians : D. SANGIORGI, Atti Soc. Modena (4) iv, pp. 95-97.

ASIA.

Aral District. On the Reptiles and Batrachians : U. P. ELPATIEBSKI, Sci. Res. Aral Exped. Imp. Russ. Geogr. Soc. 1903, 30 pp., 2 pls.

Transcaspia. On a collection of Reptiles : MICHAILOVSKY, Annuaire Mus. St. Petersb. ix, pp. 39-44.

S. E. Asia. On some Snakes added to the collection of the Indian Museum : N. ANNANDALE, J. Asiat. Soc. Bengal lxxiii, pp. 208-212, pl. ix.

Travancore. List of the Batrachians, by H. S. FERGUSON, J. Bombay Soc. xv, pp. 499-509.

Yunnan. Descriptions of new Frogs and Snakes : BOULENGER, Ann. Nat. Hist. (7) xiii, pp. 130 & 131.

Indo-China. On the Reptiles and Batrachians : F. MOCQUARD & G. TIRANT in A. PAVIE, Mission Pavie Indo-Chine iii, pp. 471-494. On a small collection from Upper Tonkin : VAILLANT, Bull. Mus. Paris 1904, p. 298.

Burma. On some Reptiles : G. H. EVANS, J. Bombay Soc. xvi, pp. 169-171.

Malay Peninsula. Remarks on the Reptiles and Batrachians, by P. KREFFT, Zool. Garten xlv, pp. 169-178, 201-207, 241-248.—A. L. BUTLER, J. Bombay Soc. xv, pp. 387-402, concludes his list of the Batrachians.

Sumatra. On the Snakes : W. VOLZ, Zool. Jahrb. Syst. xx, pp. 491-508.—On a collection of Batrachians : M. ISENSCHMID, Mt. Ges. Bern 1903, pp. 1-32, pls. i-vi.

Celebes. On a collection of Reptiles and Batrachians : J. ROUX, Verh. Ges. Basel xv, pp. 425-433, pl. viii.

AFRICA.

Egypt and Sudan. On a collection of Reptiles and Batrachians : L. G. ANDERSSON, Rev. Swed. Zool. Exped. Egypt and White Nile, 1901, i, 12 pp.

Erythræa. On a collection of Reptiles and Batrachians : PERACCA, Boll. Mus. Torino xix, No. 467.

Islands of the Gulf of Guinea. On some Reptiles and Batrachians : BARBOZA DU BOCAGE, J. Sci. Lisb. (2) vii, pp. 90-96.

AMERICA.

North America. A. E. BROWN, P. Ac. Philad. lvi, pp. 464-474, discusses the distribution of North American Reptiles, with special reference to the post-glacial centres of dispersal.

Ohio. On the Reptiles and Batrachians : M. MORSE, Pap. Ohio Ac. iv, pp. 93-144, figg., pl. i.

Kansas. On the Snakes : E. B. BRANSON, Kansas Univ. Sci. Bull. ii, pp. 353-430, figg.

Bermudas. On the Reptiles : VERRILL, Tr. Connect. Ac. xi, 1903, pp. 57, 690-698, figg.

Bahamas. On the Reptiles and Batrachians : T. BARBOUR, Bull. Mus. Harvard xlvi, pp. 55-61.

Porto Rico. On the Reptiles and Batrachians : STEJNEGER, Rep. U. S. Mus. for 1902, pp. 549-724, figg., 1 pl.

Surinam. On a collection of Reptiles and Batrachians : T. W. VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, pp. 83-94, pl. vii.

Ecuador. Further report on the Festa collection of Reptiles and Batrachians by PERACCA, Boll. Mus. Torino xix, No. 465.

Brazil. On the Chelonians : SIEBENROCK, Denk. Ak. Wien lxxvi, pp. 1-28, pls. i-iii.

Matto Grosso and Paraguay. On a collection of Reptiles and Batrachians : PERACCA, Boll. Mus. Torino xix, No. 460.

Paraguay. On a collection of Batrachians : L. v. MÉHELY, Ann. Mus. Hungar. ii, pp. 207-232, pl. xiii.

Chili and Patagonia. On a collection of Reptiles and Batrachians : F. WERNER, Ergebn. Hamburg. Magalhaen. Sammelr. vii, 21 pp., 1 pl.

POLYNESIA and NEW ZEALAND.

Hawaiian Islands. On the Reptiles of the Island of Maui : R. MCGREGOR, P. U. S. Mus. xxviii, pp. 115-118.

New Zealand. List of the Reptiles and Batrachians : F. W. HUTTON, Index Faunæ Novæ Zealandiæ, pp. 39 & 40.

FOSSIL FAUNÆ.

Trias of Great Britain. H. C. BEASLEY, Rep. Brit. Ass. 1903, pp. 219-230, figg., pls. v-viii, reports on Saurichnites preserved in various museums.

Chalk of England. General list of the Reptiles : JUKES-BROWNE, Upper Chalk of England (Mem. geol. Surv. U.K.), pp. 461 & 462.

Coal Measures of Lancashire. On some Batrachian remains : H. BOLTON, Tr. Manchester Geol. Soc. xxviii, pp. 406 & 624.

Cambridgeshire. On the fossil Reptiles : LYDEKKER, Handbook Nat. Hist. of Cambridgeshire, pp. 59-70.

Rhætic of South Wales. On some Reptilian and Batrachian remains : S. H. REYNOLDS, Quart. J. Geol. Soc. lx, pp. 208 & 209.

Upper Jurassic of Calvados. On some Reptilian remains : BIGOT & BRASIL, Mem. Soc. Linn. Norm. xxi, pp. 93 & 94, pl. iv.

Miocene of Quercy, France. On Lacertilian remains : G. DE STEFANO, Atti Mus. Milano xlii, pp. 382-417, pls. ix & x.

Upper Jurassic of Solenhofen. On the fauna : J. WALTHER, Festschr. Haeckel, pp. 133-214.

Jura-Trias of North America. On footprints : R. S. LULL, Mem. Boston Soc. v, pp. 461-557, figg., pl. lxxii.

Canada. On the fossil Reptiles and Batrachians : LAMBE, Tr. R. Soc. Canada x, iv, pp. 13-56.

Coal Measures of Ohio. List of the Stegocephalian Batrachians : M. MORSE, Pap. Ohio Ac. iv, pp. 105 & 106.

Miocene of Maryland. On the Reptiles : E. C. CASE, Maryland geol. Surv. 1904, pp. 62-70, pls. xxvi & xxvii.

Permian of Illinois. Notes on Reptilian remains described by Cope : E. C. CASE, Contr. Walker Mus. i, 1901, pp. 1-29, pls. i-v.

Upper Trias of Wyoming. On new Reptiles : S. W. WILLISTON, J. Geol. xii, pp. 688-697, figg.

Permian of Texas. On various reptiles and Stegocephalians : F. BROILI, Palæontogr. li, pp. 1-121, pls. i-xiii.

III. REFERENCES ARRANGED SYSTEMATICALLY.

REPTILIA AND BATRACHIA.

H. WOODWARD, J. R. Micr. Soc. 1904, pp. 141-149, remarks on the evolution of Reptiles and Batrachians in time.

M. FÜRBRINGER, Festschr. Haeckel, pp. 573-604, deals with the relation of the Reptiles and Batrachians to the Mammalia.

O. JAEKEL, Zeitschr. Deutsch. geol. Ges. lvi, Protok., pp. 109-119, figg., remarks on the composition of vertebræ in Reptiles and Batrachians.

F. BÉGUIN, Arch. anat. micr. vi, pp. 385-454, pls. xiii-xvi, has investigated, on Toads and Lizards, the changes in the intestine during fast and during digestion.

C. M. FÜRST, Act. Univ. Lund. xxxix, 1903, ii, No. 1, has investigated the musculus popliteus and its tendon in Batrachians and Reptiles.

J. CAMERON, J. Anat. Physiol. norm. path. (2) xviii, pp. 281-283, remarks on the superior commissure of the brain in Reptiles and Batrachians.

G. MARIKOVSKY, Termes. Kozl. Magyar Tars. 1904, pp. 524-534, gives a summary of our knowledge of Reptile and Batrachian poisons.

HOERNES, Biol. Centrbl. xxiv, pp. 566-576, reviews our knowledge of the coprolithes of extinct Reptiles and Batrachians.

REPTILIA.

H. F. OSBORN, Amer. Natural. xxxviii, pp. 93-115, figg., gives a condensed account of his classification, reported in the last Record.

Remarks on the classification of Reptiles into two Sub-classes, *Theromora* and *Herpetomorpha* : BOULENGER, P. Z. S. 1904, i, p. 480.

S. W. WILLISTON, Biol. Bull. vii, pp. 175-192, figg., writes on the temporal arches of the Reptiles and on the relationships of the principal orders.

- F. BROILI, *Anat. Anz.* xxv, pp. 577-587, figg., remarks on the early types of Reptiles.
- R. BROOM, *Tr. S. African Soc.* xv, pp. 89-96, pl. vii, remarks on the carpus and tarsus of the primitive Reptiles.
- F. BÉGUIN, *Anat. Anz.* xxiv, pp. 337-356, figg., writes on the mucous membrane of the œsophagus and its glands in Reptiles.
- A. I. STERZI, *Atti Soc. Toscano* xx, pp. 243-275, pls. ix & x, has investigated the histology of the periphery of the spinal cord in Reptiles.
- H. BARBIER, *Bull. Soc. Elbeuf* xxii, pp. 41-63, remarks on some Reptiles in the Elbeuf Museum.
- R. L. DITMARS, *Rep. New York Zool. Soc.* 1903, pp. 146-160, figg., has notes on Reptiles in captivity.

SQUAMATA.

- G. TORNIER, *SB. Ak. Berlin* 1904, pp. 1203-1214, figg., remarks on the origin and signification of the colour-patterns of Lizards and Snakes.

LACERTILIA.

- F. E. BEDDARD, *P. Z. S.* 1904, i, pp. 436-450, figg., 465-470, figg., and ii, pp. 6-22, has contributions to the anatomy of Lacertilia.
- F. E. BEDDARD, *P. Z. S.* 1904, ii, pp. 154-157, figg., and *Nature* lxx, p. 6, describes vestiges of a parasternum in *Tiliqua*.
- J. VERSLUYS, *Jun., Anat. Anz.* xxiv, pp. 641-644, writes on the muscles of mastication in the Lacertilia.
- K. PETER, *Normentafel zur Entwickel. der Zauneidech.* (Jena, 4to), describes and figures the development of *Lacerta agilis*.
- G. ALONZO, *Atti Acc. Gioen.* (4) xvi, 1903, No. 5, has made researches on the development of the limbs and tail of *Chalcides ocellatus*.
- A. N. SEWERTZOFF, *Anat. Anz.* xxv, pp. 472-494, figg., writes on the development of the limbs of *Tarentola mauritanica*.
- F. E. BEDDARD, *P. Z. S.* 1904, ii, pp. 145-147, fig., remarks on an apparently abnormal position of the fœtus in the body of a *Chalcides lineatus*.
- K. PETER, *Arch. mikr. Anat.* lxiii, pp. 659-700, figg., pls. xxxi & xxxii, continues his studies on the gastrulation of *Lacerta*.
- A. NICOLAS, *Arch. Biol.* xx, pp. 611-658, pls. xvii-xix, describes the segmentation of the egg in *Anguis fragilis*.
- J. KUNITZKY, *Trudui St. Petersb. Obshch.* xxxiv (2), pp. 1-19, pl. —, has investigated the origin and development of the cuticular hair-like organs of the digits of *Tarentola mauritanica*.
- A. MORGERA, *Boll. Soc. Napoli* xvii, pp. 221-224, fig., has a preliminary note on the male genital apparatus of *Lacerta viridis* and *L. muralis*.
- F. TÖLG, *Arch. Inst. Wien* xv, pp. 119-154, pls. ix-xi, has a contribution to the knowledge of femoral and præanal pores and other similar organs in the Lacertilia.
- L. COHN, *Zool. Anz.* xxvii, pp. 185-192, figg., has investigated the structure of the femoral pores of *Cnemidophorus lemniscatus*.
- On the parietal eye of *Chalcides tridactylus* and *ocellatus*: GIANNELLI, *Monit. Zool. ital.* xv, pp. 187-197, 325-332: STADERINI, *t. c.* pp. 341-343.
- D. CASELLA, *Arch. ital. Biol.* xlii, pp. 273-288, gives a French résumé of his observations on the effects of moisture in a fasting specimen of *Chalcides ocellatus*.

GECKONIDÆ.

- Gymnodactylus russovi*, Strauch, described by ELPATIEBSKI, Amph. Rept. Aral Exped., p. 3.
- Gonatodes boonii*, **sp. n.**, VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 87, pl. vii, figg. 1 & 2, Surinam.
- Phyllodactylus europæus*, Gené. On its variation: CAMERANO, Boll. Mus. Torino xix, No. 471; *P. paviei*, **sp. n.**, MOCQUARD, Mission Pavie Indo-Chine iii, p. 486, pl. xxiii, fig. 3, Siam [= *P. siamensis*, Blgr.—REC.].
- Hemidactylus garnoti*, D. & B. Note by R. MCGREGOR, P. U. S. Mus. xxviii, p. 115.
- Sphaerodactylus grandisquamis*, **sp. n.**, STEJNEGER, Rep. U. S. Mus. for 1902, p. 602, figg., Vieques and Porto Rico.

EUBLEPHARIDÆ.

- Eublepharis macularius*, Blyth. On a Transcaspiian specimen: MICHAÏLOVSKY, Annuaire Mus. St. Petersb. ix, p. 39.

AGAMIDÆ.

- Draco volans*, L. Notes on living specimens: P. KREFFT, Zool. Garten xlv, p. 246.
- Acanthosaura fruhstorferi*, **sp. n.**, WERNER, Zool. Anz. xxvii, p. 461, Tonkin.
- Calotes brevipes*, **sp. n.**, WERNER, t. c. p. 462, Tonkin.
- Agama galliæ*, Filhol (foss.). Note by DE STEFANO, Atti Mus. Milano xlii, p. 390.
- Chlamydosaurus kingii*, Gray. Stated to have no femoral pores: BEDDARD, P. Z. S. 1904, ii, p. 82.
- Amphibolurus websteri*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 414, pl. xi, W. Australia.

IGUANIDÆ.

- Anolis principalis*, L., recorded from Bermuda by VERRILL, Tr. Connect. Ac. xi, 1903, p. 57, pl. i, fig. 5. On the changes of colour: PARKER & STARRATT, P. Amer. Ac. xl, p. 457. *A. elegans*, Blgr. = *A. fasciatus*, Blgr.: PERACCA, Boll. Mus. Torino xix, No. 465, p. 3. *A. lentiginosus*, O'Sh. Note by LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 88. *A. krugi*, Peters, figured by STEJNEGER, Rep. U. S. Mus. for 1902, pl. i; *A. monensis*, p. 646, figg., Mona, *evermanni*, p. 647, figg., Porto Rico, and *poncensis*, p. 665, figg., Porto Rico, **spp. nn.**, id. *ibid.*; *A. festæ*, **sp. n.**, PERACCA, t. c. p. 4, Ecuador.
- Liolaemus*, Wieg. Synopsis of the Chilean species by WERNER, Ergebn. Hamburg. Magalhaen. Sammelr. vii, p. 10; *L. lativittatus*, **sp. n.**, id. *ibid.* p. 8, pl. —, figg. 3 & 4, Chili; *L. (Saccodeira) proximus*, **sp. n.**, id. *ibid.* p. 12, pl. —, figg. 1 & 2, S. W. Patagonia [= *L. magellanicus*, H. & J.—REC.]
- Iguana europea*, Filhol (foss.) Various bones described and figured by DE STEFANO, Atti Mus. Milano xlii, p. 393, pls. ix & x.
- Sceloporus undulatus*, Daud. Egg and embryos figured by DITMARS, Rep. New York Zool. Soc. 1903, p. 159. *S. merriami*, **sp. n.**, STEJNEGER, P. Soc. Washington xvii, p. 17, Rio Grande Valley, Texas.

ANGUIDÆ.

- Diploglossus cadurensis*, Filhol (foss.). Mandibles noticed and figured by DE STEFANO, Atti Mus. Milano xlii, p. 398, pl. ix, figg. 1, 4, 6.
- Ophisaurus ventralis*, L. Note on the eggs by DITMARS, Rep. New York Zool. Soc. 1903, p. 160. *O. gracilis*, Gray. Note on the habits by G. H. EVANS, J. Bombay Soc. xvi, p. 171.
- Propseudopus cayluxi*, **sp. n.** (foss.), DE STEFANO, t. c. p. 400, pl. ix, figg. 2, 5, 10, Miocene of Quercy, France.
- Placosaurus? rugosus*, Gerv. (foss.). Note by DE STEFANO, t. c. p. 43, pl. x, fig. 2.

ANNIELLIDÆ.

- W. R. COE & B. W. KUNKEL, Amer. Natural. xxxviii, pp. 487-490, figg., describe the reproductive organs of *Anniella pulchra*, Gray.

HELODERMATIDÆ.

- Heloderma suspectum*, Cope. Egg described and figured by DITMARS, Rep. New York Zool. Soc. 1903, p. 158, fig.

VARANIDÆ.

- Palæovaranus cayluxi*, Filhol (foss.). Note by DE STEFANO, Atti Mus. Milano xlii, p. 407, pls. ix & x. *P. filholi*, **sp. n.**, id. ibid. p. 408, Miocene of Quercy, France.

TEIIDÆ.

- Cnemidophorus sexlineatus*, L. Egg and embryos figured by DITMARS, Rep. New York Zool. Soc. 1903, p. 159.
- Arthrosaura versteegii*, **sp. n.**, VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 89, pl. vii, figg. 5 & 6, Surinam.
- Prionodactylus kockii*, **sp. n.**, VAN LIDTH DE JEUDE, t. c. p. 91, pl. vii, figg. 3 & 4, Surinam.
- Alopoglossus festæ*, **sp. n.**, PERACCA, Boll. Mus. Torino xix, No. 465, p. 7, Ecuador.
- Proctoporus simoterus*, O'Sh. Note by PERACCA, t. c. p. 9.

AMPHISBENIDÆ.

- Amphisbæna bakeri*, **sp. n.**, STEJNEGER, Rep. U. S. Mus. for 1902, p. 681, figg., Porto Rico; *A. haugi*, **sp. n.**, MOCQUARD, Bull. Mus. Paris 1904, p. 301, Gaboon.
- Lipidosternum laticeps* and *carcani*, **spp. nn.**, PERACCA, Boll. Mus. Torino xix, No. 460, pp. 3 & 5, figg., Matto Grosso, Brazil.

LACERTIDÆ.

- Tachydromus dorsalis*, **sp. n.**, STEJNEGER, Smithson. Collect. xlvii, p. 294, Loo Choo Ids.
- Gastrophalis*, Fisch. Synopsis of the species by WERNER, Zool. Anz. xxvii, p. 464. *G. prasina*, **sp. n.**, id. ibid. p. 462, German E. Africa.

Lacerta, L. Remarks on the affinities of the Mediterranean species : WERNER, Zool. Anz. xxvii, p. 254. *L. danfordii*, Gthr., redescribed by WERNER, t. c. p. 255. *L. viridis*, var. n. *intermedia*, MÉHELÿ, Allatt. Kozl. Magyar Tars. iii, p. 280, figg., S. W. Hungary ; *L. horvathi*, sp. n., MÉHELÿ, Ann. Mus. Hungar. ii, p. 362, figg., and Allatt. Kozl. Magyar Tars. iii, pp. 193 & 279, pl. v, S. W. Hungary. *L. lamandini*, Filhol (foss.). Note by DE STEFANO, Atti Mus. Milano xlii, p. 412.

Pseudolacerta, g. n. for *Lacerta mucronata*, Filhol (foss.), DE STEFANO, t. c. p. 413.

Eremias velox, Pall., and *arguta*, Pall., described and figured by ELPATIEBSKI, Amph. Rept. Aral Exped., pp. 11 & 18, pls. i & ii.

SCINCIDÆ.

Lygosoma elegantulum, Ptrs. & Doria = *Hinulia pardalis*, Macleay, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 80.

Ablepharus boutonii poecilopleurus, Wiegman. Note by R. MCGREGOR, P. U. S. Mus. xxviii, p. 117.

Eumeces quinquelineatus, L., is oviparous : DITMARS, Rep. New York Zool. Soc. 1903, p. 160. *E. scutatus*, Theob. On Transcasian specimens : MICHAÏLOVSKY, Annuaire Mus. St. Petersb. ix, p. 41, and VASILJEV, t. c. p. xiii.

Plestiodon cadurcensis, Filhol (foss.). Bones noticed and figured by DE STEFANO, Atti Mus. Milano xlii, p. 397, pl. x.

Scincus officinalis, Laur. On variations in the head-shields : A. SOKOLOWSKY, Biol. Centrbl. xxiv, p. 754, figg.

Protrachysaurus gaudryi, g. and spp. nn. (foss.), DE STEFANO, t. c. p. 406, pl. ix, Miocene of Quercy, France.

INCERTÆ SEDIS.

Thaumastosaurus bottii, g. and spp. nn. (foss.), DE STEFANO, Atti Mus. Milano xlii, p. 414, pl. ix, figg. 1 & 15, Miocene of Quercy, France.

RHIPTOGLOSSA.

G. TORNIER, Zool. Jahrb. Anat. xxi, pp. 1-40, pls. i & ii, has investigated the gular and occipital air-sacs of Chameleons.

F. E. BEDDARD, P. Z. S. 1904, ii, pp. 6-22, figg., writes on some points in the vascular system of Chameleons.

COUVREUR & GAUTIER, Ann. Soc. Linn. Lyon l, pp. 159 & 160, have made experiments on the respiration of Chameleons.

Palæochamæleo europæus, g. and sp. nn. (foss.), DE STEFANO, Atti Mus. Milano xlii, p. 391, pl. ix, figg. 7 & 12, Miocene of Quercy, France.

PYTHONOMORPHA.

On the systematic position and habits : S. W. WILLISTON, J. Geol. xii, pp. 43-51.

L. DOLLO, Mem. Soc. Belge Geol. xviii, pp. 207-216, pl. vi, reviews our knowledge of the Mosasaurs of Belgium, and, pp. 217-222, remarks on the derivation of the group from the Dolichosauria.

L. VAILLANT, Bull. Mus. Paris 1904, pp. 217 & 218, is inclined to refer the great "Sea Serpent" observed on the coast of Cochinchina to the Mosasaurs.

DOLICHOSAURIA.

- L. DOLLO, Mem. Soc. Belge Geol. xviii, pp. 217-222, and S. W. WILLISTON, J. Geol. xii, pp. 45-48, remark on the different views that have been expressed as to the phylogenetic relation between the Dolichosaurians and the Lacertilians and Pythonomorphs.

OPHIDIA.

- F. E. BEDDARD, P. Z. S. 1903, ii, pp. 319-328, figg., 1904, i, pp. 331-370, figg., 1904, ii, pp. 107-121, figg., and pp. 147-154, figg., writes on the anatomy of various groups of Snakes.
- E. BALLOWITZ brings out the first part of a work, "Entwicklungsgeschichte der Kreuzotter," Jena, 4to, dealing with the development of *Vipera berus*.
- H. DUBUISSON, C.R. Soc. Biol. lvii, pp. 286-288, 437 & 438, describes the resorption of the vitellus in the development of Vipers.
- R. S. N. PILLAY, Ann. Nat. Hist. (7) xiii, pp. 238 & 239, remarks on the dentition of some Indian Elapine Snakes.
- N. ROSÉN, Zool. Anz. xxviii, pp. 1-7, figg., writes on the muscles of the jaws of Snakes and on their mechanical relation to the poison-gland.
- A. BRANCA, Arch. zool. exp. Notes (4) ii, pp. xxxvii-xlv, has studied the epithelial covering of the sheath of the tongue in *Tropidonotus natrix*.
- F. CREVATIN, Anat. Anz. xxiv, pp. 539-542, figg., and U. CARPI, op. cit. xxv, pp. 225-230, figg., have studied the nerves in the transparent immovable eyelid of Snakes.
- T. NEUMANN, Ber. Senckenberg. Ges. 1904, pp. 72*-76*, remarks on poisonous Snakes and Snake poison.
- C. PHISALIX, C.R. Ac. Sci. cxxxviii, pp. 1459-1461, and C.R. Soc. Biol. lvi, pp. 976-978, remarks on the causes of the natural immunity of Snakes to their own poison, and op. cit. lvii, pp. 486-488, has further remarks on the difference between Viperid and Colubrid venom.
- L. ROGERS, Phil. Trans. B. cxcvii, pp. 123-191, has investigated the physiological action of Colubrine and Viperine venoms; R. H. ELLIOT, P. R. Soc. London lxxiii, pp. 183-190, that of *Naia tripudians*; R. H. ELLIOT, W. C. SILLAR, & G. S. CARMICHAEL, Phil. Trans. B. cxcvii, pp. 327-345, that of *Bungarus cœruleus*; and Sir T. R. FRASER & R. H. ELLIOT, t. c. pp. 249-279, that of *Enhydryna valakadien* and *Enhydryn curtus*.
- G. LAMB, Sci. Mem. India (2), No. 10, has further observations on Snake poisons.
- F. NÖC, Ann. Inst. Pasteur xviii, pp. 387-406, remarks on certain physiological properties of the different Snake poisons.
- F. WALL, J. Bombay Soc. xv, p. 524, records cases of Snakes feeding on other Snakes.

TYPHLOPIDÆ.

- Typhlops rostellatus*, sp. n., STEJNEGER, Rep. U. S. Mus. for 1902, p. 686, figg., Porto Rico; *T. kleebergi*, sp. n., WERNER, Zool. Anz. xxvii, p. 464, Usambara, German E. Africa.

BOIDÆ.

- On some points in their anatomy: BEDDARD, Ann. Nat. Hist. (7) xiii, p. 233, and P. Z. S. 1904, ii, p. 107, figg.

R. L. DITMARS, Bull. Zool. Soc. New York 1904, pp. 157-163, figg., has notes on the large Boas and Pythons in captivity.

Ungualia curta, Garm. = *U. pardalis*, Gundl., BARBOUR, Bull. Mus. Harvard xlv, p. 59.

PALÆOPHIIDÆ.

Archæophis proavus, Massalongo (foss.). Note by JANENSCH, SB. Ges. naturf. Berlin 1904, p. 133, and Zeitschr. Deutsch. geol. Ges. lvi, Protok., p. 54.

COLUBRIDÆ.

Stoliczkaia khasiensis, Jerd., noticed and figured by ANNANDALE, J. Asiat. Soc. Bengal lxxiii, p. 210, pl. ix, fig. 2.

Polyodontophis grahamsi, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 132, Yunnan.

Tropidonotus natrix, L. On its mode of feeding : H. BARBIER, Feuille Natural. xxxiv, p. 55, fig. On albinos : J. BERNARDI, Boll. Naturalista xxiv, p. 12 ; on specimens from Leghorn, id. ibid. p. 71. *T. tessellatus*, Laur. Recorded from Gera, Germany, by TORMIER, SB. Ges. naturf. Berlin 1904, p. 197. On its habits in Hungary : VEITH, Allatt. Kozl. Magyar Tars. iii, pp. 229 & 239. *T. quadrilineatus*, p. 132, *octolineatus*, p. 133, and *pleurotænia*, p. 133, **spp. nn.**, BOULENGER, Ann. Nat. Hist. (7) xiii, Yunnan.

Eutænia butleri, Cope, redescribed, with notes on the habits and affinities, by RUTHVEN, Biol. Bull. vii, p. 289, fig.

Liopholidophis, **g. n.**, for *Tropidonotus lateralis*, D. & B. and allies : MOCQUARD, Bull. Mus. Paris 1904, p. 302. *L. grandidieri*, **sp. n.**, id. ibid. p. 304, Madagascar.

Pseudoxenodon sinensis, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 134, S. China.

Hydrathlops lævis, **sp. n.**, BOULENGER, t. c. p. 450, S. Cameroon.

Siebenrockia, **n. n.** for *Simocephalus*, Gthr., nec Schödl., POCHÉ, Zool. Anz. xxviii, p. 38 = *Mehelya*, Csiki, 1903, CSIKI, t. c. p. 267.

Liparophis, **g. n.**, near *Tapinophis*, Blgr., PERACCA, Rev. Suisse Zool. xii, p. 663 ; *L. bedoti*, **sp. n.**, id. ibid. p. 664, China.

Trachischium læve, **sp. n.**, PERACCA, t. c. p. 665, E. Indies.

Aspidura drummondhayi, **sp. n.**, BOULENGER, Spolia Zeylan. ii, p. 95, pl. —, Ceylon.

Lumprophis rogeri, **sp. n.**, MOCQUARD, Bull. Mus. Paris 1904, p. 307, Abyssinia.

Pseudoxyrhopus dubius, **sp. n.**, MOCQUARD, t. c. p. 305, Madagascar.

Dendrophis bifrenalis, Blgr. Further notes by WILLEY, Spolia Zeylan. i, p. 116.

Dromicus. *Leimadophis stahli*, **sp. n.**, STEJNEGER, Rep. U. S. Mus. for 1902, p. 695, figg., Porto Rico.

Alsophis vudii, Cope. Note by BARBOUR, Bull. Mus. Harvard xlv, p. 60.

Coronella austriaca, Laur. On its mode of feeding : H. BARBIER, Feuille Natural. xxxiv, p. 58.

Contia walteri, Boettg. Note by MICHAILEVSKY, Annuaire Mus. St. Petersb. ix, p. 43 ; *C. angusticeps*, Blgr., figured by ANNANDALE, J. Asiat. Soc. Bengal lxxiii, pl. ix, fig. 1.

Atractus micheli, **sp. n.**, MOCQUARD, Bull. Mus. Paris 1904, p. 301, French Guiana ; *A. vertebralis*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 451, Peruvian Andes.

Hypsirhina multilineata, **sp. n.**, TIRANT, Mission Pavie Indo-Chine iii, p. 484, Cochinchina.

- Dipsadomorphus trigonatus*, Schneid., var. n. *melanocephalus*, ANNANDALE, J. Asiat. Soc. Bengal lxxiii, p. 210, pl. ix, fig. 4, Perso-Baluchistan frontier.
- Oxyrhopus bicolor*, **sp. n.**, PERACCA, Rev. Suisse Zool. xii, p. 667, Santa Fé, Argentina.
- Tachymenis peruviana*, Wiegman. On colour varieties: WERNER, Ergebn. Hamburg. Magelhaen. Sammelr. vii, p. 14.
- Apostolepis borellii*, **sp. n.**, PERACCA, Boll. Mus. Torino xix, No. 460, p. 9, fig., Matto Grosso, Brazil.
- Distira gillespiei*, Blgr. On a specimen from the Malabar coast: F. WALL, J. Bombay Soc. xv, p. 723, fig.
- Apistocalamus pratti*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 451, Owen Stanley Range, N. Guinea.
- Acanthophis pyrrhus*, Blgr. Note by BOULENGER, op. cit. xiv, p. 415.
- Boulengerina christyi*, **sp. n.**, BOULENGER, t. c. p. 14, Leopoldville, Congo.
- Elapechis duttoni*, **sp. n.**, BOULENGER, t. c. p. 15, Leopoldville, Congo.
- Naia tripudians*, Merr. On a specimen eating eggs: C. P. GEORGE, J. Bombay Soc. xvi, p. 174.

VIPERIDÆ.

- Vipera berus*, L. On variations in British specimens: G. LEIGHTON, P. Phys. Soc. Edinb. xv, p. 130, pl. iii & xvi, pl. 1. *V. berus*, L., var. *bosniensis*, Boettg. Note by MÉHELÿ, Allatt. Kozl. Magyar Tars iii, p. 285, fig. *V. russellii*, Shaw. On a very large specimen: L. L. FENTON, J. Bombay Soc. xvi, p. 173. *V. ammodytes*, L., var. n. *montandoni*, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 134, Roumania.
- Lachesis monticola*, Jerd., is oviparous: G. A. MILLER, J. Bombay Soc. xv, p. 729.
- Crotalus scutulatus*, Kenn. Note by A. E. BROWN, P. Ac. Philad. lv, p. 625.

ORNITHOSAURIA.

- S. W. WILLISTON, Geol. Mag. (v) i, p. 59, remarks on the homologies of the fingers of the Pterodactyls, the patagial finger being regarded as the fourth.
- Pteranodon longiceps*, Marsh, figured, with notes on the sclerotic circle and the vertebræ, by EATON, Amer. J. Sci. (4) xvii, p. 318, pls. xix & xx.

ORTHOPODA.

- F. NOPCSA, Denk. Ak. Wien lxxiv, pp. 256-260, figg., remarks on the so-called prædentary bone of Orthopods.
- Trachodon*, Leidy. Notes and figures of the skeleton by F. A. LUCAS, Smithsonian. Collect. i, p. 317, figg., pls. lxxii & lxxiii.
- Mochlodon suessi*, Bunz. Further descriptions and figures of various parts of the skull: NOPCSA, t. c. p. 229, figg., 2 pls.
- Claosaurus annectens*, Marsh. On the entire skeleton: BEECHER, Tr. Connect. Ac. xi, 1903, pp. 311-323, pls. xli-xlv.
- Eubrontes platypus*, **n. n.** for *Amblonyx giganteus*, Hitchcock, LULL, Mem. Boston Soc. v, p. 512.

DINOSAURIA.

- H. F. OSBORN, Science (2) xix, pp. 255 & 256, remarks on the position of the bones of the fore-arm in the Sauropoda.
- H. G. SEELEY, Ann. Nat. Hist. (7) xiv, p. 341, remarks on the pneumatic foramina in Dinosaurian vertebræ.
- H. F. OSBORN, Bull. Amer. Mus. xx, pp. 181-190, figg., remarks on the structure of the manus, sacrum, and caudal vertebræ of *Diplodocus* and *Brontosaurus*.
- Monoclonius canadensis*, **sp. n.**, LAMBE, Tr. R. Soc. Canada x, iv, p. 7, pl. 11. On the skull: LAMBE, Ottawa Natural. xviii, p. 33, pl. ii.
- Centrosaurus apertus*, **g.** and **sp. nn.**, allied to *Monoclonius*, LAMBE, t. c. p. 33, pl. i, and Tr. R. Soc. Canada x, iv, p. 3, pl. i, Cretaceous of Alberta, Canada.
- Algoasaurus bauri*, **g.** and **sp. n.**, apparently related to *Diplodocus*, BROOM, Geol. Mag. (v) i, p. 445, fig., Cretaceous near Port Elizabeth.
- Ornithomimus altus*, Lambe. On the manus: LAMBE, Ottawa Natural. xviii, p. 33, 2 pls.
- Dryptosaurus incrassatus*, Cope. Skulls and other remains described and figured by LAMBE, Contr. Canad. Pal. iii (4to), pt. iii, 8 pls.
- Dystrophæus viemalæ*, Cope. Various bones described and figured by F. v. HUENE, N. Jahrb. Min., Beil. xix, p. 319, pls. xiv-xvi.
- Otouphepus magnificus*, **g.** and **sp. n.**, for a Dinosaurian footprint from the Trias of the Connecticut Valley, CUSHMAN, Amer. Geol. xxxiii, p. 154, pl. vi.
- Anthisauripus*, **g. n.** for *Eubrontes dananus*, Hitchcock, the track of *Anchisaurus colurus*, Marsh, LULL, Mem. Boston Soc. v, p. 486; *A. hitchcocki*, **sp. n.**, id. ibid. p. 488, fig., Massachusetts.
- Stenonyx*, **n. n.** for *Leptonyx*, Hitchcock, preoccupied, LULL, t. c. p. 498. On footprints of a Dinosaur apparently related to *Allosaurus*, Marsh, RIGGS, Amer. J. Sci. (4) xvii, p. 423, fig.
- On Dinosaurian remains from the Trias of Rio Grande do Sul, Brazil, A. S. WOODWARD, Rep. Brit. Ass. 1903, p. 663.

EMYDOSAURIA.

- J. DOUGLAS OGILBY, P. Soc. Queensland, xviii, pp. 201-213, has remarks on the habits and distribution of Crocodiles, with special reference to the two Australian species.
- A. PETTIT, C.R. Soc. Biol. lvi, pp. 298-300, fig., and Bull. Mus. Paris 1904, pp. 66-68, fig., remarks on the structure of the liver of *Alligator mississippiensis*.
- A. PETTIT & F. GEAY, C.R. Soc. Biol. lvi, pp. 1087-1089, remark on the structure of the cloacal gland of *Caiman sclerops*.
- Crocodylus prenasalis*, **sp. n.** (foss.), LOOMIS, Amer. J. Sci. (4) xviii, p. 427, figg., Oligocene, White River, U.S.A.
- Thecachamps*, Cope (foss.). On various remains: CASE, Maryland geol. Surv. 1904, p. 64, pl. xxvii.
- Teleorhinus*, **g. n.**, allied to *Teleosaurus*, for *T. browni*, **sp. n.** (foss.), OSBORN, Bull. Amer. Mus. xx, pp. 239, Cretaceous of Montana.
- Metriorhynchus jaekeli*, **sp. n.** (foss.), W. E. SCHMIDT, Zeitschr. Deutsch. geol. Ges. lvi, Protok. p. 97, figg., pls. xi & xii, Oxford Clay of Huntingdonshire.
- Notochamps*, **g. n.**, for Mesosuchian remains, BROOM, Geol. Mag. (v) i, p. 582; *N. istedana* and *longipes*, **spp. nn.**, id. ibid. p. 583, figg., Upper Stormberg beds (Lower Jurassic), Barkly East, S. Africa.

ICHTHYOSAURIA.

Remarks on the relationships of the genera of Ichthyosaurs, BOULENGER, P. Z. S. 1904, i, p. 425.

On Ichthyosaurian remains from the Upper Cretaceous of New South Wales, ETHERIDGE, Rec. Austral. Mus. v, p. 313.

Ichthyosaurus quadriscissus, Quenst. Remarks on the skeleton and restoration of the fleshy parts by O. JAEKEL, Zeitschr. Deutsch. geol. Ges. lvi, Verh. p. 26, fig. *I. extremus*, **sp. n.**, BOULENGER, P. Z. S. 1904, i, p. 424, fig., Lower Lias (?) near Bath.

Merriamia, n. n. for *Leptochirus*, J. C. Merriam, preoccupied; BOULENGER, t. c. p. 425.

CHELONIA.

J. P. MUNSON, Amer. J. Anat. iii, pp. 311-347, 7 pls., has made researches on the oogenesis of *Clemmys marmorata*.

IDA H. HYDE, Amer. J. Physiol. xii, pp. 245-249, has made experiments on the differences in electrical potential in the developing egg of *Chrysemys picta*.

G. LOISEL, C.R. Ac. Sci. cxxxix, pp. 325 & 326, has ascertained the presence of toxic substances in the ovarian eggs of *Testudo ibera*.

G. TORNIER, SB. Ges. naturf. Berlin 1904, pp. 297-307, remarks on the origin and signification of the colour-patterns of Chelonians.

O. P. HAY, P. Amer. Phil. Soc. xlii, pp. 268-274, discusses the definition and nomenclature of the genera of *Trionychidae*.

Aspideretes, **g. n.** for *Trionyx gungeticus*, Cuv., and allies, HAY, t. c. p. 274. *A. beecheri*, **sp. n.** (foss.), HAY, Ann. Carnegie Mus. iii, p. 178, and Amer. J. Sci. (4) xviii, p. 274, pl. xvi, Laramie Beds, Wyoming.

Aspidonectes tritor, **sp. n.** (foss.), O. P. HAY, Science (2) xix, p. 254, Eocene of Wyoming.

Testudo calcarata, Schn. Note on the young by VAILLANT, Bull. Mus. Paris 1904, p. 186, fig. *T. tabulata*, Walb., redescribed by SIEBENROCK, Denk. Ak. Wien lxxvi, p. 6; On the S. African species allied to *T. geometrica*, L., id. SB. Ak. Wien cxiii, p. 307; *T. verreauxi*, Smith, *smithii*, Blgr., and *fiskii*, Blgr., redescribed and figured, id. ibid. pp. 313, 318, 322, pls. iii-v. *T. tornieri*, Siebenr. On an imperfectly ossified shell: id. ibid. p. 29, fig. *T. boettgeri*, **sp. n.**, id. Anz. Ak. Wiss. 1904, p. 194, and t. c. p. 310, pls. i & ii, Great Namaqualand; *T. ammon*, Andrews (foss.), noticed and figured by ANDREWS, Geol. Mag. (v) i, p. 527, fig., pl. xvii; *T. brontops*, Marsh (foss.), described and figured by HAY, Amer. J. Sci. (4) xviii, p. 272, figg.; *T. syriensis*, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, p. 21, pls. vii & viii, Pliocene of Szerem, Hungary.

Hadrianus majusculus, **sp. n.** (foss.), HAY, Amer. J. Sci. (4) xviii, p. 271, fig., pl. xv, Eocene, New Mexico.

Cistudo, Flem. On the characters of the species and varieties inhabiting the S. E. United States: C. S. BRIMLEY, J. E. Mitchell Soc. xx, No. 1.

Emys orbicularis, L. Additional note on two anomalous specimens recorded in 1893: R. BLANCHARD, Bull. Soc. zool. France xxix, p. 161; on its attempted re-introduction in Norfolk, F. B. BROWNE, Tr. Norfolk Soc. vii, p. 754; on fossil remains from Belgium, G. FOURNIER, Bull. Soc. geol. Belgique xxxi, p. 77.

Nicoria punctularia, Daud., redescribed by SIEBENROCK, Denk. Ak. Wien lxxvi, p. 5.

Orlitia borneensis, Gray (*Brookeia baileyi*, Bartl.). On its systematic position and synonymy: SIEBENROCK, Zool. Anz. xxvii, p. 580.

- Chrysemys rugosa*, Shaw. Notes on the breeding habits, by H. M. SMITH, Smithson. Collect. i, p. 252. *C. wyomingensis*, Leidy (foss.), described and figured by HAY, Amer. J. Sci. (4) xviii, p. 267, figg., pl. xiv; *C. inornata*, **sp. n.** (foss.), LOOMIS, t. c. p. 429, figg., Oligocene, White River, U.S.A.
- Pangshura cochinchinensis*, **sp. n.**, TIRANT, Mission Pavie Indo-Chine iii, p. 494, Cochinchina.
- Mesoclemmys gibba*, Schw. Redescribed and figured by SIEBENROCK, Denk. Ak. Wien lxxvi, p. 20, pl. iii.
- Lytoloma angusta*, Cope (foss.), described and figured by WIELAND, Amer. J. Sci. (4) xviii, p. 183, figg., pls. vi-viii.
- Baptemys wyomingensis*, Leidy (foss.), described and figured by HAY, Amer. J. Sci. (4) xviii, p. 265, figg., pl. xiii, figg. 1-3.
- Adocus punctatus*, Marsh (foss.), described and figured by WIELAND, t. c. p. 112, pls. i-iv.
- Osteopygis gibbi*, **sp. n.** (foss.), WIELAND, t. c. p. 118, pls. v-viii, Upper Cretaceous of New Jersey.
- Propleura borealis*, **sp. n.** (foss.), WIELAND, t. c. p. 129, pl. ix, Upper Cretaceous of New Jersey.
- Cinosternum scorioides*, L., redescribed by SIEBENROCK, Denk. Ak. Wien lxxvi, p. 3.
- Baëna marshi* and *cephalica*, **spp. nn.** (foss.), HAY, Amer. J. Sci. (4) xviii, pp. 261 & 263, fig., pl. xi, fig. 1, and pl. xii, figg. 1 & 3, Laramie beds, Wyoming. *B. callosa*, **sp. n.** (foss.), HAY, Ann. Carnegie Mus. iii, p. 178, figg., Judith River Beds of Montana.
- Podocnemis*, Wagl. On the Brazilian species: SIEBENROCK, Denk. Ak. Wien lxxvi, p. 10; *P. unifilis*, figured, id. ibid. pls. i & ii.
- Rhinemys*, Wagl., *Hydraspis*, Bell, and *Platemys*, Wagl. Remarks on the generic characters and descriptions of the Brazilian species: SIEBENROCK, t. c. p. 16, figg.
- Dermochelys coriacea*, L. On the capture of a specimen on the S. W. Coast of France: PELLEGRIN, La Nature xxxii, p. 321.

PLESIOSAURIA.

- N. JAKOWLEW, Ver. Russ. Min. Ges. (2) xli, pp. 13-16, fig., pl. i, remarks on Plesiosaurian remains from Siberia.
- On Plesiosaurian remains from the Upper Cretaceous of New South Wales, ETHERIDGE, Rec. Austral. Mus. v, p. 315.
- On a *Plesiosaurus*-skeleton from the White Lias of Westbury-on-Severn, GWINNELL, Quart. J. Geol. Soc. lx, p. 359.
- On the presence of stones in the stomach of Plesiosaurs, B. BROWN, Science (2) xx, p. 185; EASTMAN, t. c. p. 466; WILLISTON, t. c. p. 565; W. H. WICKES, P. Bristol Soc. (2) x, p. 220.
- Cimoliosaurus maccoyi*, **sp. n.**, ETHERIDGE, Rec. Austral. Mus. v, p. 306, pls. xlii-xlv, Upper Cretaceous, New South Wales.
- Branchanchenius lucasi*, Willist., figured by LUCAS, Smithson. Collect. xlv, pl. xxviii.
- R. BROOM, Tr. S. African Soc. xv, pp. 109-112, remarks on the affinities of the *Mesosauria*.
- Mesosaurus tenuidens*, Gerv. (?). On a new specimen: BROOM, t. c. p. 103, pl. ix.

THECODONTIA.

- On the relationships of this order, J. H. MCGREGOR, Science (2) xix, pp. 254 & 255.

Palæorhinus, g. n., allied to *Belodon* and *Phytosaurus*, for *P. bransoni*, sp. n., WILLISTON, J. Geol. xii, p. 696, fig., Upper Trias of Wyoming.
Stegomus longipes, sp. n., EMERSON & LOOMIS, Amer. J. Sci. (4) xvii, p. 377, pl. xxii, Trias of Connecticut.—On probable footprints, LULL, t. c. p. 381, fig.

PELYCOSAURIA.

F. BROILI, Zeitschr. Deutsch. geol. Ges. lvi, pp. 268–272, figg., pl. xvii, describes some Pelycosaurian remains from Texas.
 E. C. CASE, Science (2) xix, p. 253, remarks on the quadrate of the Pelycosauria.
Dimetrodon, Cope. On the skull and fore-foot: E. C. CASE, J. Geol. xii, pp. 304 & 312, figg.
Embolophorus dollorivianus, Cope. On the pelvis: BROILI, Palæontogr. li, p. 89, pl. vii, fig. 2.
Lysorophus tricarinatus, Cope, described and figured by BROILI, t. c. p. 94, pl. xii.

THALATTOSAURIA.

J. C. MERRIAM, Science (2) xix, p. 218, proposes this name for a new group of marine Reptiles, standing in somewhat the same relation to the typical Rhynchocephalia as the Pythonomorpha to the Lacertilia.
Thalattosaurus alexandre, g. & sp. n., for Reptilian remains from the Trias of California: J. C. MERRIAM, Bull. geol. Univ. Calif. iii, p. 419, fig.

RHYNCHOCEPHALIA.

Rhynchosaurus, Ow. (foss.). Footprints noticed and figured by A. S. WOODWARD, J. Northampt. Soc. xii, p. 22, fig.
Batrachopus dispar, n. n. for a footprint from Massachusetts, LULL, Mem. Boston Soc. v, p. 483, fig.

ANOMODONTIA.

On the classification of the *Terocephalia*, *Theriodontia*, and *Anomodontia*, R. BROOM, Rep. S. Afric. Ass. i, pp. 292–294.
 R. BROOM, t. c. pp. 286–294, deals with the classification of the Theriodonts and their allies.
 R. BROOM, Rec. Albany Mus. i, pp. 75–82, remarks on some points in the anatomy of the Anomodont skull.
 O. JAEKEL, SB. Ges. naturf. Berlin 1904, pp. 172–188, figg., remarks on the structure of the skull of Dicynodonts.
 R. BROOM, P. Z. S. 1904, i, pp. 490–498, fig., pl. xxxv, describes the structure of the Theriodont mandible and its mode of articulation with the skull.
 R. BROOM, Rec. Albany Mus. i, p. 177, remarks on an Anomodont tarsus, Dicynodont or Terocephalian?
Scapanodon duplessisi, g. n., sp. n., allied to *Titanosuchus*, BROOM, Rec. Albany Mus. i, p. 182, Trias of S. Africa.
Glanosuchus macrops, g. n., sp. n., for a Terocephalian skull from the Trias of S. Africa: BROOM, Tr. S. African Soc. xv, p. 85, pl. vi, figg. 1–6.
Pristerognathus baini, sp. n., BROOM, t. c. p. 87, pl. vi, figg. 7 & 8, Trias of S. Africa.

- Cynognathus platyceps*, Seeley. Note by BROOM, Rec. Albany Mus. i, p. 82.
- Gomphognathus kannemeyeri*, Seeley. Note by BROOM, t. c. p. 85.
- Trirachodon kannemeyeri*, Seeley. Note by BROOM, t. c. p. 86.
- Chelyoposaurus williamsi*, **g. n., sp. n.**, for an Endotheriodont skull from the Trias of South Africa, BROOM, t. c. p. 184.
- Prodicynodon pearstonensis*, **g. n., sp. n.**, for an Endotheriodont skull from the Trias of South Africa, BROOM, t. c. p. 70, pl. iv, figg. 3 & 4.
- Opisthocentron agilis*, **g. n., sp. n.**, for another Endotheriodont skull from the Trias of South Africa, BROOM, t. c. p. 71, pl. iv, fig. 1.
- Udenodon pusillus*, **sp. n.**, JAEKEL, SB. Ges. naturf. Berlin 1904, p. 174, figg., Trias of Orange River Colony. *U. trigoniceps* and *megalorhinus*, **spp. nn.**, BROOM, Rec. Albany Mus. i, pp. 73 & 180, Trias of S. Africa.
- Ptychocynodon pentangulatus*, **g. n., sp. n.**, for a tooth from the Upper Karroo beds of Cape Colony, SEELEY, Ann. Nat. Hist. (7) xiv, p. 290, figg.
- Tamboeria maraisi*, **g. n., sp. n.**, for an Anomodont (?) vertebra from the Lower Karroo beds of Cape Colony, SEELEY, t. c. p. 336, figg.

COTYLOSAURIA.

- Remarks on their affinities and classification by BOULENGER, P. Z. S. 1904, i, p. 476.
- Remarks on the characters of the *Cotylosauria* and *Pariosauria* by F. BROILI, Anat. Anz. xxv, pp. 577-587, figg.
- Labidosaurus hamatus*, Cope, described and figured by BROILI, Palæontogr. li, p. 53, pls. vii-x.
- Paritichus? isolomus*, Cope. On the skull: BROILI, t. c. p. 86, pl. xii.
- Placerias histernus*, **g. n., sp. n.**, for a Cotylosaurian humerus from the Trias of Arizona, LUCAS, P. U. S. Mus. xxvii, p. 194, pl. iv.
- Telerpeton elginense*, Mant., redescribed and figured by BOULENGER, P. Z. S. 1904, i, p. 470, figg., pls. xxx-xxxii.
- Procolophon*, Ow. Further notes by R. BROOM, Rep. S. Afric. Ass. i, p. 288. Note on the manus: BROOM, Rec. Albany Mus. i, p. 88. On footprints possibly referable to *Procolophon*: SEELEY, Ann. Nat. Hist. (7) xiv, p. 287, figg.
- Saurosternum griesbacki*, Ow. On the hind limb: BROOM, Rec. Albany Mus. i, p. 177.

PARIOSAURIA.

- On their classification, R. BROOM, Rep. S. Afr. Ass. i, p. 292.
- Seymouria baylorensis*, **g. n., sp. n.**, referred to the *Pariosauridae*, BROILI, Palæontogr. li, p. 81, pl. xiii, Permian of Texas.

INCERTÆ SEDIS.

- Dolichobrachium gracile*, **g. n., sp. n.**, p. 689, fig., *Eubrachiosaurus brownei*, **g. n., sp. n.**, p. 690, fig., *Brachybrachium brevipes*, **g. n., sp. n.**, p. 694, fig., WILLISTON, J. Geol. xii, Upper Trias of Wyoming.
- Varanosaurus acutirostris*, **g. n., sp. n.**, BROILI, Palæontogr. li, p. 71, pls. x-xii, Permian of Texas.
- Cyrtura temnospondyla*, **g. n., sp. n.**, for a Reptilian tail from the Upper Jurassic of Solenhofen, showing pleurocentra, hypocentra, and intercentra, JAEKEL, Zeitschr. Deutsch. geol. Ges. lvi, Protok. p. 118, fig.
- Tarsoplectrus*, **n. n.** for *Plectropterna*, Hitchcock, preoccupied, LULL, Mem. Boston Soc. v, p. 519.
- Sustenodactylus*, **n. n.** for *Stenodactylus*, Hitchcock, preoccupied, LULL, t. c. p. 537.

BATRACHIA.

- On Batsch's use of the term *Batrachia* in 1788, STEJNEGER, *Science* (2) xx, p. 924.
- GREIL, *Verh. Anat. Ges.* 1904, pp. 136 & 137, fig., remarks on the branchial derivatives.
- A. CARGIULO, *Riv. ital. Pal.* xxiv, pp. 9 & 10, compares the kidney of Batrachians to that of Fishes.
- D. P. FILATOW, *Anat. Anz.* xxv, pp. 33-47, figg., writes on the development of the excretory system.
- E. GRYNFELL, *J. Anat. Physiol.* xl, pp. 180-220, has studied the histology of the suprarenal capsule.
- R. W. HALL, *Bull. Mus. Harvard* xlv, pp. 31-125, figg., 8 pls., has investigated the development of the mesonephros and the Müllerian ducts.
- F. MEVES, *Anat. Anz.* xxiv, pp. 465-476, figg., and xxv, pp. 240-245, 465-472, figg., and *Verh. Anat. Ges.* 1904, pp. 37-40, writes on some points in the structure of the red blood-corpuscles.
- J. CAMERON, *Rep. Brit. Ass.* 1903, pp. 689 & 690, remarks on the origin of the epiphysis as a bilateral structure.
- C. BARBIERI, *Arch. zool. ital.* ii, pp. 79-105, figg., pls. v & vi, has investigated the development of the spinal cord.
- P. WINTREBERT, *C.R. Soc. Biol.* lvi, pp. 581-584, has observations on the reflex nervous system in the tail.
- E. OVERTON, *Verh. Ges. Wurzburg* (2) xxxvi, pp. 277-295, remarks on the water-economy and the osmotic properties of the skin.

ECAUDATA.

- Z. TÓTH, *Allatt. Kozl. Magyar Tars.* iii, pp. 89-98 & 117, pls. i-iii, has a contribution to the morphology of the nasal capsule of *Bombinator igneus*.
- ESTHER F. BYRNES, *Arch. Entwicklmech.* xviii, pp. 171-177, figg., pl. x, has made experiments on the regeneration of the fore limbs in tadpoles, and, *Biol. Bull.* vii, pp. 166-169, figg., remarks on the skeleton of regenerated anterior limbs in *Rana*.
- L. v. MÉHELÿ, *Math. naturw. Ber. Ungarn* xx, pp. 239-259, figg., describes and comments upon a *Pelobates fuscus* with supernumerary fore limb.
- A. CERRUTI, *Boll. Soc. Napoli* xvii, pp. 181-184, figg., writes on Bidder's organ in *Bufo vulgaris*.
- G. LOISEL, *C.R. Soc. Biol.* lvi, pp. 446-448, remarks on a supposed correlation between the pigmentation of the testes and that of the nuptial asperities on the inner fingers in *Rana temporaria*.
- W. WOODLAND, *Zool. Anz.* xxviii, pp. 404 & 405, fig., records an abnormal condition of the bladder in *Rana temporaria*.
- M. H. HOYER, *Bull. Ac. Cracovie* 1904, pp. 228-237, figg., writes on the lymph-hearts of Frogs.
- E. YUNG, *C.R. Ac. Sci.* cxxxix, pp. 749-751, has made observations on differences in the length of the intestine in larvæ of *Rana esculenta*.
- A. GUIEYSSE, *Bull. Soc. Philom.* (9) vi, pp. 189-191, remarks on the regression of the tail in tadpoles of *Bufo vulgaris*.
- N. MANICASTRI, *Boll. Naturalista* xxiv, pp. 1 & 2, writes on the regeneration of the tail in tadpoles.
- P. WINTREBERT, *C.R. Ac. Sci.* cxxxix, pp. 432-434, has made experiments on the regeneration of the tail in larvæ of *Alytes obstetricans*.
- L. MERCIER, *C.R. Soc. Biol.* lvii, pp. 660-662, has a note on the presence of exoplasma in the epithelial cells of the tail of the tadpole of *Rana temporaria*.

- E. GOGGIO, Atti Soc. Toscana xx, pp. 186-223, pls. vii & viii, has made experiments on the development of mutilated larvæ of *Bufo vulgaris*.
- LILIAN V. SAMPSON, Amer. J. Anat. iii, pp. 473-504, figg., 2 pls., has a contribution to the embryology of *Hylodes martinicensis*.
- T. W. MORGAN & E. TOULLE, Arch. Entwicklmech. xviii, pp. 507-554, pls. xxxi-xxxiii, have studied the relation between normal and abnormal development in Frogs.
- H. BRAUS, Verh. Anat. Ges. 1904, pp. 53-65, remarks on experiments on transplantation of organs in *Bombinator* larvæ.
- A. H. TODD, Arch. Entwicklmech. xviii, pp. 489-506, figg., pls. xxix & xxx, writes on the results of injuries to the blastopore region of the Frog's embryo.
- A. BRACHET, Arch. Biol. xxi, pp. 103-160, pl. iv, has made experiments on the segmentation of *Rana temporaria*.
- E. BATAILLON, C.R. Soc. Biol. lvi, pp. 749-751, has made further experiments on parthenogenetic segmentation of the ova of *Bufo vulgaris*.
- E. BATAILLON, Arch. Entwicklmech. xviii, pp. 1-56, figg., pls. i-iv, has made new experiments on artificial parthenogenesis on eggs of *Rana temporaria*.
- W. KOLMER, Anat. Anz. xxv, pp. 102-104, fig., remarks on some points in the structure of the retina of Frogs.
- A. SCHAPER, Anat. Anz. xxiv, pp. 305-326, figg., has studied the development of the lens in *Rana esculenta*.
- W. H. LEWIS, Amer. J. Anat. iii, pp. 505-536, figg., has made experimental studies on the origin of the lens in *Rana palustris*.
- G. CECCHERELLI, Anat. Anz. xxiv, pp. 428-435, figg., writes on the nerve-terminations of the dorsal muscles in Tailless Batrachians.
- R. G. HARRISON, Amer. J. Anat. iii, pp. 197-220, figg., has made an experimental study of the relation of the nervous system to the developing musculature in Frog embryos.
- On the mode of respiration in Frogs, M. D. HILL, Nature lxix, p. 489, and A. KEITH, t. c. pp. 511 & 512.
- O. HERTWIG, Festschr. Haeckel, pp. 17-30, pl. iii, has further observations on the orientation of Frog-eggs.
- T. H. MORGAN, Anat. Anz. xxv, pp. 94-96, writes on the dispensibility of the constant action of gravity and of a centrifugal force in the development of the Toad's egg.
- G. BOHN, C.R. Soc. Biol. lvi, pp. 633 & 634, 767 & 768, 789-792, has made experiments on the influence of the sun-rays on the eggs of Frogs and Toads in the evolution of the embryo and early larval stages.
- G. BOHN, C.R. Ac. Sci. cxxxviii, pp. 1244 & 1245, remarks on light, food, and chlorophylle as factors in the development of the Frog.
- J. W. JENKINSON, Rep. Brit. Ass. 1903, pp. 693 & 694, remarks on the effect of solutions of salt and other substances on the development of the Frog.
- POCHET, Arch. Sci. Nat. (4) xviii, pp. 205 & 206, has made experiments on the toxico-exciting action of copper on the development of Frogs' eggs.
- A. SCHAPER, Anat. Anz. xxv, pp. 298-314, 326-337, figg., has made experiments on the influence of Radium rays and emanations on the development of Frog larvæ.
- A. GURWITSCH, Verh. Anat. Ges. 1904, pp. 146-152, figg., has made experiments on the restoration of the protoplasm in injured Frogs' eggs.
- E. FUNAOKA, Verh. Ges. Wurzburg (2) xxxvii, pp. 1-11, figg., pl. i, remarks on the mechanism of various muscles of Frogs.
- L. LOEB & R. M. STRONG, Amer. J. Anat. iii, pp. 275-283, write on the regeneration of the pigmented skin of the Frog, and on the character of the chromatophores.

G. LOISEL, C.R. Soc. Biol. lvi, pp. 504-507, 883-886, has made experiments on the toxicity of the ovaries, testes, and other organs in *Rana esculenta* and *R. temporaria*.

RANIDÆ.

Rana, L. On variations in the European species : G. DEPOLI, Riv. ital. Sci. Nat. xxiv, pp. 38, 68, 151. *R. hexadactyla*, Schn., *limnocharis*, Boie, and *breviceps*, Schn. Tadpoles described and figured by H. S. FERGUSON, J. Bombay Soc. xv, pp. 500-502, pls. A & B. *R. esculenta*, var. *lessoneæ*, Camer., figured by WOLTERSTORFF, Schr. Ges. Danzig (2) xi, pl. i. fig. 6 ; *R. latastii*, Blgr., and *græca*, Blgr., recorded from Tessin by GHIDINI, Boll. Soc. Ticin. i, pp. 36 & 37 ; *R. arvalis*, var. *n. nigromaculata*, WOLTERSTORFF, t. c. p. 59, pl. i, figg. 1-3, N. Germany ; *R. pleuraden*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 131, Yunnan ; *R. greenii*, **sp. n.**, id. Spolia Zeylan. ii, p. 74, Ceylon ; *R. aurantiaca*, **sp. n.**, id. J. Bombay Soc. xv, p. 430, pl. —, fig. 1, Travancore.

Phrynobatrachus perpalmatus, Blgr., recorded from near Chartoum by L. G. ANDERSSON, Res. Swed. Zool. Exped., p. 10 ; *P. natalensis*, Smith, f. n. *gracilis*, id. ibid. p. 10, fig., S. of Kaka, White Nile ; *P. tellinii*, **sp. n.**, PERACCA, Boll. Mus. Torino xix, No. 467, p. 4, Erythræa.

Nyctibates, **g. n.**, related to *Trichobatrachus*, for *N. corrugatus*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 261, S. Cameroon.

Bulua, **g. n.**, near *Petropedetes*, for *B. ventrimarmorata*, **sp. n.**, BOULENGER, t. c. p. 262, S. Cameroon.

Prostherapis inguinalis, Cope. Note by PERACCA, Boll. Mus. Torino xix, No. 465, p. 15. *P. festæ*, **sp. n.**, id. ibid. p. 16, Ecuador.

Phyllodromus, Esp. = *Prostherapis*, Cope, PERACCA, t. c. p. 17.

Rhacophorus maculatus, Gray, and *malabaricus*, Jerd. Spawn and tadpoles described and figured by H. S. FERGUSON, J. Bombay Soc. xv, pp. 503 & 504, pls. A-C. *R. nigropalmatus*, Blgr., redescribed, with notes on the skeleton and the development, by ISENSCHMID, Mt. Ges. Bern 1903, pp. 10 & 22, pls. ii & vi ; *R. georgii*, **sp. n.**, J. ROUX, Verh. Ges. Basel xv, p. 430, pl. viii, Celebes ; *R. pleurotania*, **sp. n.**, BOULENGER, J. Bombay Soc. xv, p. 430, pl. —, fig. 2, Ceylon.

Ixalus halyi, **sp. n.**, BOULENGER, t. c. p. 431, pl. —, fig. 3, Ceylon.

Megalixalus leptosomus, Peters. Notes on the habits : VAILLANT, Bull. Mus. Paris 1904, p. 436.

ENGYSTOMATIDÆ.

Atelopus flavescens, D. and B. Note by VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 92 ; *A. ignescens*, Corn., *pulcher*, Blgr., and *elegans*, Blgr. Notes by PERACCA, Boll. Mus. Torino xix, No. 465, pp. 19 & 22. *A. festæ*, p. 18, *bufoniformis*, p. 20, and *boulengeri*, p. 20, **ssp. nn.**, id. ibid. Ecuador.

Ctenophryne, **g. n.**, allied to *Otophryne*, Blgr., for *C. geayi*, **sp. n.**, MOCQUARD, Bull. Mus. Paris 1904, p. 308, Colombia.

Phrynella pulchra, Blgr., redescribed and figured by ISENSCHMID, Mt. Ges. Bern 1903, p. 12, pl. v, fig. 1.

Calophrynus pleurostigma, Tsch., redescribed and figured as *Bufo studeri*, **sp. n.**, by ISENSCHMID, t. c. p. 14, pl. v, fig. 2, Sumatra.

Engystoma albopunctatum, Bttgr., and *leucostictum*, Blgr., compared by PERACCA, Boll. Mus. Torino xix, No. 460, p. 12 ; *E. æquatoriale*, **sp. n.**, id. ibid., No. 465, p. 23, Ecuador.

- Dermatonotus*, **g. n.**, for *Engystoma muelleri*, Bttgr., MÉHELÿ, Ann. Mus. Hungar. ii, p. 207; *D. muelleri*, Bttgr., redescribed, id. ibid. p. 208, pl. xiii, figg. 1-3.
- Chiasmocleis*, **g. n.**, for *Engystoma albopunctatum*, Bttgr., MEHELÿ, t. c. p. 210, pl. xiii, figg. 4 & 5.
- Microhyla rubra*, Jerd. Tadpole described and figured by H. S. FERGUSON, J. Bombay Soc. xv, p. 506, pl. A, fig. 4.
- Callula pulchra*, Gray. On the breeding habits: A. L. BUTLER, J. Bombay Soc. xv, p. 390. *C. obscura*, Gthr., tadpole described and figured by H. S. FERGUSON, t. c. p. 506, pl. A, fig. 1; *C. verrucosa*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiii, p. 131, Yunnan.
- Cacopus systoma*, Schn. Tadpole described and figured by H. S. FERGUSON, t. c. p. 507, pl. B, fig. 2.

DYSOPHIDÆ.

- Synopsis of the genera by BOULENGER, Ann. Nat. Hist. (7) xiii, p. 43.
- Colpoglossus*, **g. n.**, BOULENGER, t. c. p. 42; *C. brooksii*, **sp. n.**, id. ibid. p. 43, pl. ii, Sarawak.

CYSTIGNATHIDÆ.

- Hylodes conspicillatus*, Gthr., *unistrigatus*, Gthr., *buckleyi*, Blgr., *whymperi*, Blgr., *curtipes*, Blgr., *vertebralis*, Blgr., *subsigillatus*, Blgr., and *platydactylus*, Blgr. Notes by PERACCA, Boll. Mus. Torino xix, No. 465, pp. 24-27; *H. festæ* and *macrocephalus*, **spp. nn.**, id. ibid. pp. 28 & 29, Ecuador; *H. grandoculis*, **sp. n.**, VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 93, Surinam.
- Eleuthrodactylus richmondi* and *unicolor*, **spp. nn.**, STEJNEGER, Rep. U. S. Mus. for 1902, pp. 593 & 597, figg., Porto Rico.
- Lithodytes*, Fitz. (type *Hylodes lineatus*, Schn.) is a valid genus: PERACCA, t. c. p. 31.
- Paludicola signifera*, Gir., and *fuscomaculata*, Stdr., redescribed by MÉHELÿ, Ann. Mus. Hungar. ii, pp. 211 & 214; *P. festæ*, **sp. n.**, PERACCA, t. c., p. 32, Ecuador.
- Leptodactylus mystacinus*, Burm., and *mystaceus*, Spix, redescribed and figured by MÉHELÿ, t. c. pp. 217 & 219, pl. xiii, figg. 11 & 12; *L. discodactylus*, Blgr., and *pulcher*, Blgr. Notes by PERACCA, t. c. p. 34. *L. krefftii*, **sp. n.**, WERNER, Ergebn. Hamburg. Magelhaen. Sammelr. vii, p. 18, Chili.

BUFONIDÆ.

- Eupemphix nattereri*, Stdr., redescribed and figured by MÉHELÿ, Ann. Mus. Hungar. ii, p. 216, pl. xiii, figg. 8 & 9.
- Nectes subasper*, Tsch. Notes on the life coloration and habits: A. L. BUTLER, J. Bombay Soc. xv, p. 393. *N. obscurus*, **sp. n.**, BARBOUR, P. Soc. Washington xvii, p. 51, Sarawak.
- Bufo vulgaris*, Laur. On a monstrous tadpole: BANCHI, Monit. Zool. ital. xv, p. 396, figg. *B. viridis*, Laur., *mauritanicus*, Schleg., and *regularis*, Reuss. On individual variations: CAMERANO, Mem. Acc. Torino (2) liv, p. 183. *B. granulatus*, Spix, redescribed by MÉHELÿ, t. c. p. 225.

HYLIDÆ.

- Hyla andersoni*, Baird. On its occurrence in New Jersey, W. T. DAVIS, Amer. Natural. xxxviii, p. 893. *H. spegazzinii*, Blgr., p. 225, *nasica*,

Cope, p. 227, and *phrynoderma*, Blgr., p. 228, redescribed by MÉHELÿ, Ann. Mus. Hungar. ii. *H. maxima*, Laur. Note by PERACCA, Boll. Mus. Torino xix, No. 465, p. 36; *H. festæ*, sp. n., id. ibid. p. 38, Ecuador; *H. evansi*, sp. n., BOULENGER, P. Z. S. 1904, ii, p. 106, pl. v, British Guiana.

Hylella anisitsi, sp. n., MÉHELÿ, t. c. p. 229, pl. xiii, figg. 13 & 14, Paraguay; *H. capellei*, sp. n., VAN LIDTH DE JEUDE, Notes Leyden Mus. xxv, p. 94, Surinam.

Phyllomedusa hypochondrialis, Daud., redescribed by MÉHELÿ, t. c. p. 230.

PELOBATIDÆ.

Pelobates fuscus, Laur., recorded from Tessin by GHIDINI, Boll. Soc. Ticin. i, p. 38.

Scaphiopus solitarius, Holbr. Note on the habits by C. C. ABBOTT, P. Amer. Phil. Soc. xliii, p. 163.

Megalophrys longipes, Blgr. Notes on the life coloration and habits: A. L. BUTLER, J. Bombay Soc. xv, p. 400.

DISCOGLOSSIDÆ.

Bombinator igneus, Laur., and *pachypus*, Bp. On hybrids: MÉHELÿ, Allatt. Kozl. Magyar Tars. iii, p. 244, fig.

CAUDATA.

L. DRÜNER, Zool. Jahrb. Anat. xix, pp. 361-690, figg., pls. xiv-xxv, has concluded the second part of his studies on the myology of the hyoid, branchial arches, and larynx.

F. SIEGLBAUER, Arch. Anat. 1904, pp. 385-404, pl. xxii, writes on the anatomy of the limbs.

P. VAN PÉE, Anat. Anz. xxiv, pp. 476-482, figg., writes on the structure of the limbs of *Amphiuma*.

P. WINTREBERT, C.R. Soc. Biol. lvi, pp. 725 & 726, has made experiments on the regeneration of the hind limbs in adult Axolotls after removal of the lumbo-sacral marrow.

F. E. BEDDARD, P. Z. S. 1903, ii, pp. 298-315, figg., describes some points in the anatomy, chiefly of the heart and vascular system, of *Megalobatrachus maximus*.

WENDELSTADT, Arch. mikr. Anat. lxiii, pp. 766-795, pls. xxxviii-xliii, has made experiments on the regeneration of cartilage and bone in Tailed Batrachians.

MARIAN E. HUBBARD, Univ. Calif. publ. Zool. i, 1903, pp. 157-168, pl. xvi, and C. O. ESTERLY, t. c. pp. 227-268, pls. xx-xxiii, write on the poison glands, especially of the tail, of *Plethodon oregonensis*.

G. M. WINSLOW, Tufts Coll. Stud. No. 8, pp. 387-410, pls. i & ii, reports and comments upon cases of abnormality in Salamandrids.

G. A. BATES, Tufts Coll. Stud. No. 8, pp. 411-435, pls. iii & iv, has investigated the histology of the digestive tract of *Amblystoma punctatum*.

A. REINHARDT, Morphol. Jahrb. xxxii, pp. 195-231, pls. v & vi, writes on the hypochorda in *Salamandra maculosa*.

H. RABL, Arch. mikr. Anat. lxiv, pp. 258-359, figg., pls. xvi-xxii, and pp. 665-693, pls. xxxvii-xl, brings out the first part of a study of the pronephros and the formation of the Müllerian duct in *Salamandra maculosa*.

- J. S. KINGSLEY & F. W. THYNG, Tufts Coll. Stud. No. 8, pp. 363-378, figg., have studied the development of the hypophysis in *Amblystoma*.
- H. H. WILDER, Amer. Natural. xxxviii, pp. 93-115, figg., writes on the early development of *Desmognathus fusca*.
- A. C. EYCLESHYMER, Anat. Anz. xxv, pp. 230-240, figg., has made observations on the cleavage of the egg of *Necturus*.
- W. A. HILTON, Amer. Natural. xxxviii, pp. 498-500, figg., describes the segmentation of the egg of *Desmognathus fusca*.
- J. W. JENKINSON, Quart. J. Micr. Sci. xlviii, pp. 407-482, pls. xxix-xxxiii, has made observations on the maturation and fertilisation of the egg of the Axolotl.
- L. P. DE BUSSY, Tijdschr. Nederland. Dierk. Ver. (2) viii, pp. 267-378, figg., pls. xi-xx, describes the development of the egg of *Megalobatrachus maximus*.
- E. M. REESE, Amer. Natural. xxxviii, pp. 487-490, figg., remarks on the eggs and spermatozoa of *Cryptobranchus alleghaniensis*.
- A. M. REESE, Biol. Bull. vi, pp. 220-223, figg., describes the sexual elements of *Cryptobranchus alleghaniensis*.
- A. BRANCA, C.R. Soc. Biol. lvi, pp. 243-245, 350 & 351, and 704-706, and Arch. zool. exp. Notes (4) ii, pp. cv-cxiii, figg., has made observations on the condition of the testes and spermatogenesis in Axolotls kept in confinement.
- C. B. KLUNZINGER, Verh. Deutsch. zool. Ges. 1904, pp. 36-46, figg., summarises Zeller's observations on the spermatophores and mode of fecundation in European Newts.
- C. PEREZ, C.R. Soc. Biol. lvi, pp. 783 & 784, remarks on the resorption of the spermatozoa in *Molge vulgaris*.
- F. A. JANSSENS, Anat. Anz. xxiv, pp. 648-651, has a preliminary note on the chromatic element during the development of the ovocyt in Newts.
- H. SPEMANN, Zool. Jahrb., Suppl. vii, pp. 429-470, figg., describes artificially-produced monstrous Newt-larvæ.
- C. D. SNYDER, Biol. Bull. vii, pp. 280-288, has made experiments on the locomotion of *Batrachoseps* with sectioned nerve-cords.
- Salamandra maculosa*, Laur., and *atra*, Laur. On their relationships, with special reference to the mode of parturition and development: P. KAMMERER, Arch. Entwickmech. xvii, p. 1, pl. --. Notes on the breeding habits: KNOBLAUCH, Zool. Garten xlv, p. 329 & 361.
- Molge blasii*, De l'Isle. Further observations on its hybrid nature: WOLTERSTORFF, Zool. Jahrb. Syst. xix, p. 647, and Zool. Anz. xxviii, p. 82. *M. cristata*, var. *karelinii*, Strauch. Notes by MÉHELÿ, Allatt. Kozl. Magyar Tars. iii, p. 264, figg. *M. palmata*, Schn. On its occurrence near Hamburg: WOLTERSTORFF, Zool. Anz. xxviii, p. 59. *M. vulgaris*, L. On its varieties: MÉHELÿ, t. c. p. 256, figg. *M. vulgaris*, subsp. n. *kapelana*, id. ibid. p. 260, figg., S. W. Hungary [= *meridionalis*, Blgr.—REC.]
- Salamandrina perspicillata*, Savi. On its distribution in Italy: C. PATRONI, Annuar. Mus. Univ. Napoli (2) i, No. 14.
- Siredon*, Wagl., must supersede *Amblystoma*, Tschudi, Poche, Zool. Ann. i, p. 50.
- Amblystoma tigrinum*, Green. On the condition in which it undergoes metamorphosis: HERRERA, Amer. Natural. xxxviii, p. 88.
- Plethodon oregonensis*, Cope, figured, with notes on the habits, by MARIAN E. HUBBARD, Univ. Calif. publ. Zool. i, 1903, p. 157, pl. xvi.
- Megalobatrachus maximus*, Schleg. On the oviposition, nursing habits, and development: KERBERT, Zool. Anz. xxvii, p. 305, figg. Notes on the distribution in Japan, habits, and development: ISHIKAWA, P. Tokyo Mus. i, p. 19, pl. viii-xi.

APODA.

On the distribution : ALCOCK, Ann. Nat. Hist. (7) xiv, pp. 267-272.

A. BRAUER, Zool. Jahrb., Suppl. vii, pp. 381-408, figg., pls. xxi & xxii, continues his contribution to the knowledge of the development and anatomy of Coecilians.

Siphonops annulatus, Mik. Note by PERACCA, Boll. Mus. Torino xix, No. 460, p. 14.

Herpele fulleri, **sp. n.**, ALCOCK, t. c. p. 271, pl. vii, Cachar.

STEGOCEPHALIA.

A. S. WOODWARD, P. Z. S. 1904, ii, p. 171, fig., remarks on the occipital region of the Labyrinthodont skull.

Capitosaurus stantonensis, **sp. n.**, A. S. WOODWARD, t. c. p. 170, pl. xi, Trias, Staffordshire.

Aphaneramma rostratum, **g.** and **sp. nn.**, for remains of a skull from the Trias of Spitzbergen, apparently allied to *Trematosaurus*, A. S. WOODWARD, t. c. p. 173, pl. xii.

Ekbainacanthus tschernyschewi, Yakowlew. Further observations by YAKOWLEW, Verh. Russ. Min. Ges. (2) xli, p. 165, fig.

Cyclotosaurus albertynii, **sp. n.**, BROOM, Rec. Albany Mus. i, p. 178, Trias of South Africa.

Metoposaurus fraasi, **sp. n.**, LUCAS, P. U. S. Mus. xxvii, p. 194, pl. iii, Trias of Arizona.

Cordylodes carbonarius, **g.** and **sp. nn.**, for vertebræ similar to *Urocordylus*, Huxley, from the Carboniferous of Nyran, Bohemia, A. FRITSCH, Palæozoische Arachniden, p. 79, figg.

Diplocaulus magnicornis, Cope, described and figured by BROILI, Palæontogr. li, p. 8, pls. i, iv, & v ; *D. copei*, **sp. n.**, id. ibid. p. 21, pls. ii & iii, Permian of Texas.

Trimerorhachis insignis, Cope, described and figured by BROILI, t. c. p. 31, pls. iii & iv.

Aspidosaurus chiton, **g.** and **sp. nn.**, allied to *Dissorophus*, Cope, BROILI, t. c. p. 40, pl. vi, Permian of Texas.

Cardiocephalus sternbergi, **g.** and **sp. nn.**, of doubtful affinities, BROILI, t. c. p. 45, pl. vi, fig. 5, Permian of Texas.

L. NEUMAYER, Palæontogr. li, pp. 121-128, pl. xiv, describes and figures coprolites from the Permian of Texas, referred to *Eryops* and *Diplocaulus*.

On Palæozoic Batrachian footprints from North America : G. F. MATTHEW, Tr. R. Soc. Canada (2) ix, iv, 1903, pp. 109-121, figg.

INCERTÆ SEDIS.

P. E. VINASSA DE REGNY, Boll. Soc. geol. Ital. xxiii, describes pentadactyle footprints from the Trias (?) of Montenegro, the most distinct of which is named *Ichnytes baldaccii*, n. f., p. 320, pl. ix, fig. 7.

V. PISCES.

BY

G. A. BOULENGER, F.R.S.

CONTENTS.

| | Page | | Page |
|---------------------------|------|----------------------------------|------|
| I. TITLES | 1 | Systematic (<i>continued</i>). | |
| II. GENERAL SUBJECT . . . | 19 | Apodes | 44 |
| III. FAUNÆ | 20 | Ostariophysi | 45 |
| IV. PALÆONTOLOGY | 23 | Malacopterygii | 49 |
| V. REFERENCES ARRANGED | | Ganoidei | 51 |
| SYSTEMATICALLY | | Holostei | 51 |
| Teleostomi | 24 | Chondrostei | 52 |
| Teleostei | 24 | Dipneusti | 52 |
| Plectognathi | 25 | Crossopterygii | 52 |
| Pediculati | 26 | Ostracophori | 53 |
| Acanthopterygii | 26 | Chondropterygii | 53 |
| Anacanthini | 39 | Holocephali | 53 |
| Percesoces | 40 | Plagiostomi | 53 |
| Catosteomi | 42 | Ichthyotomi | 56 |
| Heteromi | 42 | Acanthodii | 56 |
| Haplomi | 42 | Cycliæ | 56 |
| | | Cyclostomi | 56 |
| | | Leptocardii | 57 |

I. TITLES.*

- AFLALO, F. G. British Salt-water Fishes. Woburn Library of Natural History. London: 1904, 8vo, 328 pp., 12 pls.
- ALBERT DE MONACO. Sur la 5^{me} campagne scientifique de la *Princesse Alice II*. C.R. Ac. Sci. cxxxviii, pp. 1398-1400.
- ANTIPA, Q. Die Clupeinen des westlichen Teiles des Schwarzen Meeres und der Donaumündungen. Anz. Ak. Wiss. 1904, pp. 299-303.
- ARIOLA, V. Pesci nuovi o rari per il Golfo di Genova. Ann. Mus. Genova (3) i, pp. 153-168.

* An asterisk prefixed to a quotation indicates that the recorder has not seen the Journal or Work referred to.

- BALLOWITZ, E. Ueber den Bau des Geruchsorgans der Cyclostomata. SB. Ak. Berlin 1904, pp. 671-676.
- . Die Riechzellen des Flussneunauges (*Petromyzon fluviatilis* L.). Arch. mikr. Anat. lxiv, pp. 78-95, pl. vi.
- . Ueber die Spermien des Flussneunauges (*Petromyzon fluviatilis* L.) und ihre merkwürdige Kopfborste. T. c. pp. 96-120, pl. vii.
- BATAILLON, E. Nouveaux essais de parthénogénèse expérimentale chez les Vertébrés inférieurs (*Rana fusca* et *Petromyzon planeri*). Arch. Entwickelm. xviii, pp. 1-56, figg., pls. i-iv.
- BEAN, B. A. A new Pelican Fish from the Pacific. Smithson. Collect. i, p. 254, fig.
- BELLOTTI, C. Sopra una forma ibrida di Ciprinide esistente nei laghi di Varano e Monate. Atti Mus. Milano xliii, pp. 1-6, pl. i.
- BENHAM, W. B. An apparently new species of *Regalecus* (*R. parkeri*). Tr. N. Zealand Inst. xxxvi, pp. 198-200, pl. ix.
- BERG, L. S. Zur Systematik der Acipenseriden. Zool. Anz. xxvii, pp. 665-667.
- BERNSTEIN, J. & TSCHERMAK, A. Ueber das thermische Verhalten des elektrischen Organs von *Torpedo*. SB. Ak. Berlin 1904, pp. 301-313, figg.
- BIGELOW, H. B. The sense of hearing in the Goldfish, *Carassius auratus*, L. Amer. Natural. xxxviii, pp. 275-284.
- BIGOT, A. & BRASIL, L. Description de la Faune des Sables jurassiques supérieurs du Calvados. Mem. Soc. Normandie xxi, pp. 85-108, pls. i-iv.
- BING, R. & BURCKHARDT, R. Das Zentralnervensystem von *Ceratodus forsteri*. Anat. Anz. xxv, pp. 588-599, figg.
- BIZZOZERO, E. Sur la régénération de l'épithélium intestinal chez les Poissons. Arch. ital. Biol. xli, pp. 233-245, pl. —.
- BLUNTSCHLI, H. Der feinere Bau der Leber von *Ceratodus forsteri*, zugleich ein Beitrag zur vergleichenden Histologie der Fischleber. In SEMON, Zool. Forsch. i, pp. 333-375, figg., pl. xxxv.
- BÖHL, U. Beiträge zur Entwicklungsgeschichte der Leibeshöhle und der Genitalanlage bei den Salmoniden. Morphol. Jahrb. xxxii, pp. 505-586, figg., pl. xiii.
- BOLTON, H. The Palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii, pp. 378-420, 578-650, & 668-689.
- BORCEA, J. Sur la glande nidamentaire de l'oviducte des Elasmobranches. C.R. Ac. Sci. cxxxviii, pp. 99-101.
- . Des différences de structure histologique et de sécrétion entre le rein antérieur et le rein postérieur chez les Elasmobranches mâles. T. c. pp. 1342 & 1343.
- . Sur le développement du rein et de la glande de Leydig chez les Elasmobranches. Op. cit. cxxxix, pp. 747-749.
- . Sur un cas de conformation anormale de l'oviducte droit chez une Petite Roussette, *Scyllium canicula*, ♀. Bull. Soc. zool. France xxix, pp. 138-140.

- [BORCEA, J.] Quelques observations sur une Epinoche, *Gasterosteus aculeatus* (Variété *leiurus*, C. et V.), provenant d'une rivière se déversant au fond de la Baie Aber, près du Laboratoire de Roscoff. T. c. pp. 140 & 141.
- . Sur les entonnoirs segmentaires du *Centrina risso salviani* ♂. Bull. Soc. sci. med. Ouest France xiii, pp. 108-110.
- BORSIERI, CLEMENTINA. Materiali per una fauna dell' Arcipelago Toscano. Isola del Giglio. I. Sulla presenza nell' Isola del Giglio del *Gobius kneri* Steind., e sulla sua identità col *Gobius steindachneri* Kolomb. Ann. Mus. Genova (3) i, pp. 7-13.
- . Contribuzione alla conoscenza della fauna ittologica della Colonia Eritrea. T. c. pp. 187-220.
- . Contribuzione alla conoscenza delle specie Europee del genere *Atherina*. Annali di Agricoltura, Rome, 1902, 92 pp., pls. vi-x, 1904 [Separate copy].
- BOULENGER, G. A. Teleostei (Systematic Part). Cambridge Natural History vii, pp. 539-727, figg.
- . Report on the Fishes collected by Mr Oscar Neumann and Baron Carlo von Erlanger in Gallaland and Southern Ethiopia. P. Z. S. 1903, pp. 328-334, pli. xxix-xxxi.
- . Descriptions of three new Fishes discovered by the late Mr J. S. Budgett in the Niger. Op. cit. 1904, i, pp. 197-199, pls. vii & viii.
- . On the type specimen of a West African Fish, *Clarias laevis* Gill. T. c. pp. 200 & 201.
- . A synopsis of the Suborders and Families of Teleostean Fishes. Ann. Nat. Hist. (7) xiii, pp. 161-190. Translated into German by F. HILGENDORF, Arch. Naturg. 1904, i, pp. 197-228.
- . Description of a new *Barbus* from Cameroon. T. c. pp. 237 & 238.
- . Diagnoses of three new species of *Barbus* from Lake Victoria. T. c. pp. 449 & 450.
- . Descriptions of new West African freshwater Fishes. Op. cit. xiv, pp. 16-20.
- . On a new Cyprinodontid Fish from Egypt. T. c. pp. 135 & 136.
- . Description of a new Fish of the Genus *Alestes* from Natal. T. c. p. 155.
- . *Barbus eutaenia* and *B. holotaenia*, new names for *Barbus kessleri* Günther nec Steindachner. T. c. p. 218.
- BOUNHOL, J. P. Régime respiratoire des Poissons marins vivant en captivité. C.R. Ass. Franc. xxxii, pp. 813-815.
- BOVERI, T. Ueber die phylogenetische Bedeutung der Sehorgane des Amphioxus. Zool. Jahrb., Suppl. vii, pp. 409-428, figg.
- . Bemerkungen über den Bau der Nierenkanälchen des Amphioxus. Anat. Anz. xxv, pp. 599-604, fig.
- BRAUER, A. Die Gattung *Myctophum*. Zool. Anz. xxviii, pp. 377-404, figg.
- BRAUS, H. Tatsächliches aus der Entwicklung des Extremitätenskelettes bei den niedersten Formen. Zugleich ein Beitrag zur Entwicklungsgeschichte des Skelettes der Pinnæ und der Visceralbogen. Festschr. Haeckel, pp. 377-435, figg., pls. xiii & xiv.

- BRIDGE, T. W. Fishes. Cambridge Natural History vii, pp. 139-537, figg.
- BRIOT, A. Sur l'existence d'une kinase dans le venin de la Vive (*Trachinus draco*). C.R. Soc. Biol. lvi, pp. 1113 & 1114.
- . La Rascasse a-t-elle un venin? Op. cit. lvii, pp. 666 & 667.
- BROILLI, F. Ueber *Diacranodus texensis* Cope (= *Didymodus* ? *compressus* Cope). N. Jahrb. Min., Beil. xix, pp. 467-484, pls. xxiv & xxv.
- BYKOWSKI, L. & NUSBAUM, J. Beiträge zur Morphologie des parasitischen Knochenfisches *Fierasfer* Cuv. Bull. Ac. Cracovie 1904, pp. 409-424, pl. xi.
- CALDERWOOD, W. L. The Bull Trout of the Tay and of Tweed. P.R. Soc. Edinb. xxv, pp. 27-38, pl.
- CAMERON, J. On the presence and significance of the Superior Commissure throughout the Vertebrata. J. Anat. Physiol. norm. path. (2) xviii, pp. 275-292, pls. xxv & xxvi.
- CARAZZI, D. Sulla circolazione arteriosa cardiaca ed esofagea dello *Scyllium catulus* (= *stellare*): Nota preliminare. Monit. Zool. ital. xv, pp. 147 & 148.
- . Sulla *Selache maxima*. Zool. Anz. xxviii, pp. 161-165, figg.
- . Sulla circolazione cardiaca ed esofagea dello *Scyllium catulus*. Int. Monatsschr. Anat. xxi, pp. 1-18, fig. 1, pl. 1.
- CARGIULO, A. Contributo all' Istologia del tessuto di sostegno nelle glandole. Riv. ital. Sci. Nat. xxiv, pp. 5-12.
- CARLOS DE BRAGANÇA. Resultados duo investigações scientificas fistas a bordo do Yacht 'Amelia.' Ichthyologia. II. Lisbon, 1904, 4to, 107 pp., 2 pls.
- CARLSON, A. J. The rate of the nervous impulse in the spinal cord and in the vagus and the hypoglossal nerves of the Californian Hagfish (*Bdellostoma dombeyni*). Amer. J. Physiol. x, pp. 401-418.
- CARLTON, F. C. The color changes of some Fishes. Science (2) xix, p. 245.
- CAVALIÉ, M. La vésicule biliaire et sa circulation artérielle chez *Torpedo galvani*, chez *Galeus canis* et chez *Scyllium catulus*. Trav. Lab. Arcachon vii, pp. 23-28, figg.
- . Les chromoblastes du tégument externe dorsal de *Torpedo galvani*. C.R. Soc. Biol. lvi, pp. 46 & 47.
- . Les ramifications nerveuses dans l'organe électrique de la Torpille (*Torpedo galvani*). Bibliog. anat. xiii, pp. 214-220, figg.
- CHAPMAN, F. & PRITCHARD, G. B. Fossil Fish Remains from the Tertiaries of Australia. Part I. P. Soc. Victoria (2) xvii, pp. 267-297, pls. xi & xii.
- CLIGNY, A. Sur l'éthologie du Hareng. C.R. Soc. Biol. lvii, pp. 347 & 348.
- COLLENETTE, A. Note on *Luvarus imperialis*, a very rare Fish. Rep. Guernsey Soc. 1903, pp. 235-237.
- COLLETT, R. Diagnoses of four hitherto undescribed Fishes from the depths South of the Faroe Islands. Forh. Selsk. Christian. 1904, No. 9, 7 pp.
- COOPER, C. F. Cephalochorda. Systematic and anatomical account. In J. S. GARDINER, Faun. Mald. and Laccad. Archip. i, pp. 347-360, figg., pl. xviii (1903).

- COUFFON, O. Étude critique sur les Faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35-85.
- CULBERTSON, G. A note on the breeding habits of the Common or White Sucker. P. Indiana Ac. 1903, pp. 65 & 66.
- DAGUIN, A. Répertoire alphabétique des noms vulgaires et locaux des Poissons d'eau douce de France. Naturaliste xxvi, pp. 185-187, 206, 217 & 218, 230 & 231, 242 & 243, 254 & 255, 267 & 268, 280.
- DANNEVIG, H. C. On the first successful experiment with importation of European sea Fishes to Australian waters. Rep. Fisher. N.S.W. for 1902, ii, pp. 5-17 (1903).
- . On the reproduction of sea Fishes. The result of preliminary investigations in New South Wales waters. T. c. pp. 21-25.
- . The Sea Mullet, *Mugil dobula* Günther. T. c. pp. 26-33, pl. iii.
- DAWSON, J. The mechanism of feeding and breathing in the Lamprey. Science (2) xix, pp. 218 & 219.
- DEAN, B. Notes on Japanese Myxinoids. A new Genus *Paramyxine*, and a new Species *Homea okinoseana*. Reference also to their eggs. J. Coll. Tokyo xix, No. 2, 23 pp., figg., 1 pl.
- . Notes on Chimæra. Two Japanese species, *C. phantasma* Jordan & Snyder and *C. mitsukurii* n. s., and their egg cases. T. c. No. 3, 9 pp., 1 pl.
- . Notes on the Long-snouted Chimæroid of Japan, *Rhinochimæra* (*Harriotta*) *pacifica* (Garman) Mitsukuri. T. c. No. 4, 20 pp., figg., 2 pls.
- . Evolution in a determinate line, as illustrated by the egg-cases of Chimæroid Fishes. Biol. Bull. vii, pp. 105-112.
- . L'œuf de *Chimæra colbiei* et l'adaptation de sa capsule. C.R. Soc. Biol. lvii, pp. 14 & 15.
- . The Egg-cases of Chimæroid Fishes. Amer. Natural xxxviii, pp. 486 & 487.
- . In the matter of the Permian Fish *Menaspis*. Amer. Geol. xxxiv, pp. 49-53, pl. ii.
- . In the matter of *Menaspis*. Science (2) xix, p. 253.
- . Still another Memoir on *Palæospondylus*. T. c. pp. 425 & 426.
- DEINEKA, D. Zur Frage über den Bau der Schwimmblase. Zeitschr. Wiss. Zool. lxxviii, pp. 149-164, figg., pls. viii & ix.
- DEKHUYZEN, M. C. Ergebnisse von osmatischen Studien, namentlich bei Knochenfischen, an der Biologischen Station des Bergenser Museums während eines Aufenthalts vom 23 Juli bis 27 Aug. 1904. Bergens Mus. Aarbog 1904, No. 8, 5 pp.
- DELFIN, F. T. Contribucion a la ictiologia Chilena. Revist. chilena viii, pp. 11-13, fig.
- DESTINEZ, P. Faune et flore des psammites du Condroz (Famennien). Mem. Soc. geol. Belgique xxxi, pp. 249-257.
- D'EVANT, T. Rudimentäre Amnionbildungen der Selachier. Anat. Anz. xxiv, pp. 490-492.
- DEWITZ, J. Bemerkungen zu Herrn E. P. Allis's Arbeit "The skull and the cranial and first spinal muscles and nerves in *Scomber scomber*." Anat. Anz. xxiv, pp. 408-410.

- DOHRN, A. Studien zur Urgeschichte der Wirbelthierkörpers. 23. Die Mandibularhöhle der Selachier. 24. Die Prämandibularhöhle. Mt. Stat. Neapel xvii, pp. 1-294, pls. i-xvi.
- DOLLO, L. Expédition Antarctique Belge. Résultats du Voyage du S. Y. Belgica. Zoologie. Poissons. Antwerp, 1904, 4to, 240 pp., figg., 12 pls.
- DRZEWINA, ANNA. Sur l'organe lymphoïde de l'œsophage des Sélaciens (Note préliminaire). C.R. Soc. Biol. lvi, pp. 637-639.
- . Sur la non-spécificité des cellules granuleuses du rein de l'*Acipenser sturio* L. (note préliminaire). T. c. pp. 957-959.
- . O tkance limfatycznej w nerce niektórych ryb (Sur le tissu lymphoïde du rein de certains Poissons). Kosmos polski. xxix, pp. 504-520.
- DUNCKER, G. Die Fische der malayischen Halbinsel. Mt. Mus. Hamburg xxi, pp. 133-207, fig., 2 pls.
- EASTMAN, C. R. On the nature of *Edestus* and related forms. Mark Anniv. Vol. pp. 279-289, pl. xxi.
- . Description of Bolca Fishes. Bull. Mus. Harvard xlvi, pp. 1-36, figg., 2 pls.
- . Systematic Palæontology. Miocene Pisces. Maryland geol. Surv. 1904, pp. 71-93, pls. xxviii-xxxiii.
- . Asterolepid Appendages. Amer. J. Sci. (4) xviii, pp. 141-144.
- . On Upper Devonian Fish remains from Colorado. T. c. pp. 253-260, figg.
- . On the dentition of *Rhynchodus* and other fossil Fishes. Amer. Natural. xxxviii, pp. 295-299, figg.
- . Marginal and ridge scales in *Cephalaspis* and *Drepanaspis*. Science (2) xix, pp. 703 & 704.
- . Jordan on fossil Labroid and Chaetodont Fishes. Op. cit. xx, pp. 245 & 246.
- . The earliest mention of fossil Fishes. T. c. pp. 648 & 649.
- EHRENBAUM, E. Eier und Larven von Fischen der deutschen Bucht. III. Fische mit festsitzenden Eiern. Wiss. Meeresuntersuch. vi, Helgoland, pp. 127-200, fig., pls. iii-xvi.
- & STRODTMANN, S. Eier und Jugendformen der Ostseefische. I. Bericht. T. c. pp. 57-126, figg.
- EIGENMANN, C. H. The eyes of the Blind Vertebrates of North America. v. The history of the eye of the Blind Fish *Amblyopsis* from its appearance to its disintegration in old age. Mark Anniv. Vol. pp. 167-204, pls. xii-xv.
- . The fresh-water Fishes of Western Cuba. Bull. U. S. Fish Comm. f. 1902, pp. 211-236, pls. xix-xxi (1903).
- . On a Leptocephalus of the Conger Eel. Science (2) xix, pp. 629 & 630, fig.
- EVANS, H. M. A new Cestracient spine from the Lower Triassic of Idaho. Bull. geol. Univ. Calif. iii, pp. 397-402, pl. xlvii.
- EYCLESHYMER, A. C. The early development of *Lepidosteus osseus*. Univ. Chicago Dec. Publ. x, 1903, 17 pp., pls. xvii & xviii.

- FASCILOLO, ALBA. Due casi di deformazione nel *Labrax lupus*. Atti Soc. Ligustica xv, pp. 92-99, pl. iii.
- FERREIRA, A. R. Memoria sobre o Peixe Pirá-Urucú. Arch. Mus. Rio Janeiro xii, 1903, pp. 155-158.
- FERRER Y HERNÁNDEZ, J. Materiales para la fauna ictiológica de las Baleares. Bol. Soc. espan. iii, 1903, pp. 89-98.
- FILIPPO TROIS, E. Nota sopra un' esconplare di *Epinephelus alexandrinus* preso nell' Adriatico. Atti Ist. Veneto lxiii, pp. 93-95.
- FLOWER, S. S. Zoological Gardens, Giza, near Cairo. Report for the year 1903. Cairo, 1904, 8vo, 48 pp.
- FOWLER, H. W. Descriptions of new, little known, and typical Atherinidæ. P. Ac. Philad. lv, pp. 727-742, pls. xli-xliv.
- . New and little known Mugilidæ and Sphyrænidæ. T. c. pp. 743-752, pls. xlv & xlvi.
- . Description of a new Lantern Fish. T. c. pp. 754 & 755.
- . Note on the Characinidæ. Op. cit. lvi, p. 119.
- . New, little known and typical Berycoid Fishes. T. c. pp. 222-238, figg.
- . Description of a new race of *Notropis chalybæus* from New Jersey. T. c. pp. 239 & 240, pl. xvii.
- . Notes on Fishes from Arkansas, Indian Territory, and Texas. T. c. pp. 242-249.
- FRAAS, E. *Ceratodus priscus* E. Fraas aus dem Hauptbuntsanstein. Ber. Oberrhein. geol. Ver. xxxvii, pp. 30-32, fig.
- FRITEL, P. H. Poissons fossiles des environs de Paris. Naturaliste xxvi, pp. 40-44, figg.
- FULTON, T. W. The rate of growth of Fishes. Rep. Fish. Board Scotland xxii, iii, pp. 141-241, pls. vi-xii.
- . Ichthyological Notes. T. c. pp. 281-287, pl. xviii.
- . Spawning of the Plaice. Nature lxi, p. 535.
- FÜRBRINGER, K. Beiträge zur Morphologie des Skelettes der Dipnoer, nebst Bemerkungen über Pleuracanthiden, Holocephalen und Squaliden. In SEMON, Zool. Forsch. i, pp. 423-510, figg., pls. xxxvii-xli.
- . Notiz über einige Beobachtungen am Dipnoerkopf. Anat. Anz. xxiv, pp. 405-408.
- GARMAN, S. The Chimæroids (*Chismopnea* Raf., 1815; *Holocephala* Müll., 1834), especially *Rhinochimæra* and its allies. Bull. Mus. Harvard xli, pp. 245-272, 15 pls.
- GATTI, M. Ricerche sugli organi luminosi dei Pesci. Annali di Agricoltura, Rome, 1902, 126 pp., 1 pl., 1903 [separate copy].
- GIACOMINI, E. Contributo alla conoscenza delle capsule surrenali dei Ganoidi e particolarmente sull' esistenza della loro sostanza midollare. Monit. Zool. ital. xv, pp. 19-32.
- GIARD, A. Sur l'éthologie du Hareng des côtes du Boulonnais. C.R. Soc. Biol. lvi, pp. 1058-1061.
- GILBERT, C. H. Notes on Fishes from the Pacific Coast of North America. P. Calif. Ac. Zool. (3) iii, pp. 255-271, pls. xxv-xxix.

- [GILBERT, C. H.] & STARKS, E. C. The Fishes of Panama Bay. Mem. Calif. Ac. iv, pp. 1-304, pls. i-xxxiii.
- GILCHRIST, J. D. F. Descriptions of new South African Fishes. Mar. invest. S. Africa iii, pp. 1-16.
- . Development of South African Fishes. Part II. T. c. pp. 131-152, pls. v-xi.
- GILL, T. A remarkable genus of Fishes—the Umbras. Smithson. Collect. i, pp. 295-305, figg.
- . *Labracinus* the proper name for the Fish genus *Cichlops*. P. U. S. Mus. xxviii, p. 119.
- . Note on the genus *Prionurus* or *Acanthocaulos*. T. c. p. 121.
- . On the systematic relations of the Ammodytoid Fishes. T. c. pp. 159-163, figg.
- . State Ichthyology of Massachusetts. Science (2) xx, pp. 321-338.
- . Extinct Pediculate and other Fishes. T. c. pp. 845 & 846.
- GLEYS, E. Recherches sur le sang des Sélaciens. Action toxique du sérum de Torpille (*Torpedo marmorata*). C.R. Ac. Sci. cxxxviii, pp. 1547-1549, and Bull. Mus. Paris 1904, pp. 282-284.
- GOETTE, A. Ueber den Ursprung der Lungen. Zool. Jahrb. Anat. xxi, pp. 141-160, figg.
- GÜPPERT, E. Der Kehlkopf von *Protopterus annectens* (Owen). Anatomische Untersuchung. Festschr. Haeckel, pp. 115-132, figg., pl. vii.
- GREGORY, W. K. The relations of the anterior visceral arches to the chondrocranium. Biol. Bull. vii, pp. 55-66.
- GUCCINI, L. Sul contenuto gastro-enterico dei Pesci del Ticino. R. Inst. Lomb. (2) xxxvii, pp. 194-201.
- GUITEL, F. Descriptions comparatives des *Lepadogaster bimaculatus* Pennant et *microcephalus* Brook. Arch. Zool. exp. (4) ii, pp. 357-495, figg., pl. xv.
- GOODRICH, E. S. On the dermal fin-rays of Fishes, living and extinct. Quart. J. Micr. Sci. xlvii, pp. 465-522, figg., pls. xxxv-xli.
- HAMBURGER, R. Ueber die paarigen Extremitäten von *Squalius*, *Trigla*, *Periophthalmus* und *Lophius*. Rev. Suisse Zool. xii, pp. 71-148, pls. ii & iii.
- HANITSCH, R. Annual Report on the Raffles Library and Museum for the year 1903. Singapore, 1904, 4to, 16 pp.
- HAUG, E. Sur la faune des couches à *Ceratodus* crétacées du Djoua, près Timassânine (Sahara). C.R. Ac. Sci. cxxxviii, pp. 1529-1531.
- HELBING, H. Beiträge zur Anatomie und Systematik der Laemargiden. Acta Ac. German. lxxxii, pp. 335-524, figg., pls. viii & ix.
- HERDMAN, W. A. Cephalochordata. Cambridge Natural History vii, pp. 112-138, figg.
- . Spawning of the Plaice. Nature lxix, pp. 465 & 488.
- HERRICK, C. J. The organ and sense of taste in Fishes. Bull. Denison Univ. xii, 1903, pp. 39-96, and Bull. U. S. Fish Comm. xxii, pp. 237-272, figg.

- HILGENDORF, F. Ein neuer Scyllium-artiger Haifisch, *Proscyllium habereri*, nov. subgen., n. spec. von Formosa. SB. Ges. naturf. Berlin 1904, pp. 39-41.
- HOFER, B. Handbuch der Fischkrankheiten. Munich, 1904, 8vo, 359 pp., figg.
- HOLT, E. W. L. & BYRNE, L. W. On the Fishes taken by the 'Oceana.' Ann. Nat. Hist. (7) xiv, pp. 37-40, fig.
- HOSCH, —. Das Sehorgan von *Protopterus annectens*. Arch. mikr. Anat. lxiv, pp. 99-110, pl. vi.
- HUTTON, F. W. Index Faunæ Novæ Zealandiæ. London, 1904, 8vo, 372 pp.
- . Description of a new Fish. Tr. N. Zealand Inst. xxxvi, p. — [separate copy].
- HYDE, IDA H. Localization of the respiratory centre in the Skate. Amer. J. Physiol. x, pp. 236-258, figg.
- . Differences in electrical potential in developing eggs. Op. cit. xii, pp. 241-275.
- IMMS, A. D. Notes on the Gill-rakers of the Spoonbill Sturgeon, *Polyodon spathula*. P. Z. S. 1904, ii, pp. 22-35, pl. ii.
- ISHIKAWA, C. Notes on some new or little known Fishes of Japan. I. P. Tokyo Mus. i, pp. 1-17, pls. i-vii.
- JAEGER, A. Die Schwimmblase der Fische. Ber. Senckenberg. Ges. 1904, pp. 63*-72*.
- . Die Physiologie der Schwimmblase der Fische. Biol. Centrbl. xxiv, pp. 129-142.
- JAEKEL, O. Ueber die Organisation und systematische Stellung der Asterolepiden. Zeitschr. Deutsch. geol. Ges. lv, Verh., pp. 41-60, figg.
- . Ueber *Tremataspis* und Pattens Ableitung der Wirbeltiere von Arthropoden. T. c. pp. 84-93, figg.
- JENKINS, O. P. Report on collections of Fishes made in the Hawaiian Islands, with descriptions of new species. Bull. U. S. Fish Comm. xxii, pp. 417-511, figg.
- JENSEN, A. S. The North-European and Greenland *Lycodinae*. Danish Ingolf-Expedition iii, No. 4, 99 pp., figg., 10 pls.
- . The Fishes of East-Greenland. Medd. Gronland xxix, pp. 213-276, pls. xi-xiii.
- JOHANSEN, A. C. Contributions to the biology of the Plaice, with special regard to the Danish Plaice-fishery. Meddel. Komm. Havunders., Fisk. i, No. 2, 69 pp., 12 pls.
- JOHNSTONE, J. On the Marine Fishes. Suppl. Rep. Ceylon Pearl Fisheries, No. xv, pp. 201-222, 2 pls.
- . Trawling observations and results. P. Liverp. biol. Soc. xviii, pp. 100-112, pl. i.
- JORDAN, D. S. Notes on Fishes collected in the Tortugas Archipelago. Bull. U. S. Fish Comm. xxii, pp. 539-544, pls. i & ii.
- . The transplanting of Trout in the streams of the Sierra Nevada. Amer. Natural. xxxviii, pp. 885-887.

- [JORDAN, D. S.] A Loach from Nanaimo. *Science* (2) xix, pp. 634 & 635.
- & SNYDER, J. O. On a collection of Fishes made by Mr Alan Owston in the deep waters of Japan. *Smithson. Collect.* i, pp. 230–240, pls. lviii–lxiii.
- & —. On the species of White Chimæra from Japan. *P. U. S. Mus.* xxvii, pp. 223–226, figg.
- & —. Notes on Collections of Fishes from Oahu Island and Laysan Island, Hawaii, with descriptions of four new species. *T. c.* pp. 939–948.
- & —. Description of a new species of Fish (*Apogon evermanni*) from the Hawaiian Islands, with notes on other species. *Op. cit.* xxviii, pp. 123–126.
- & STARKS, E. C. A review of the Scorpenoid Fishes of Japan. *Op. cit.* xxvii, pp. 91–175, figg., pls. i & ii.
- & —. A review of the Cottidæ or Sculpins found in the waters of Japan. *T. c.* pp. 231–335, figg.
- & —. A review of the Japanese Fishes of the Family of Agonidæ. *T. c.* pp. 575–599, figg.
- & —. *Schmidtina*, a genus of Japanese Sculpins. *T. c.* p. 961.
- & —. Description of a new Cyprinoid Fish, *Hemibarbus joiteni*, from the Pei Ho, Tientsin, China. *Smithson. Collect.* i, pp. 241 & 242, pl. lxiv.
- & —. List of Fishes dredged by the steamer 'Albatross' off the coast of Japan in the summer of 1900, with descriptions of new species and a review of the Japanese Macrouridæ. *Bull. U. S. Fish Comm.* xxii, pp. 577–630, figg., 8 pls.
- JOSEPH, H. Ueber eigentümliche Zellstrukturen im Zentralnervensystem von Amphioxus. *Verh. Anat. Ges.* 1904, pp. 16–26.
- JUDAY, C. Fishes of Boulder County, Colorado. *Stud. Univ. Colorado* ii, pp. 113 & 114.
- JUKES-BROWNE, A. J. The Cretaceous Rocks of Great Britain. III. The Upper Chalk of England. *Mem. geol. Surv. U. K.* 1904.
- KATURÍĆ, N. M. Novo nalazište jesetre atlantske, *Acipenser sturio* L. *Rad. Jugoslav. Ak.* cliv, 1903, pp. 1–6.
- KELLICOTT, W. E. The development of the vascular system of *Ceratodus*. *Biol. Bull.* vi, pp. 320 & 321.
- KEMNA, A. Les récentes découvertes de Poissons fossiles primitifs. *Mem. Soc. Belge Geol.* xvii, pp. 339–382, figg., and xviii, pp. 3–78.
- . Les caractères généraux des Vertébrés. *Bull. Soc. malac. Belgique* xxxviii, pp. xcvii–cvii.
- KENDALL, W. C. Notes on some fresh-water Fishes from Maine, with descriptions of three new species. *Bull. U. S. Fish Comm.* xxii, pp. 353–368, figg.
- KERR, J. G. On some points in the early development of motor nerve trunks and myotomes in *Lepidosiren paradoxa* (Fitz.). *Tr. R. Soc. Edinb.* xli, pp. 119–127, 6 pls.
- KERSHAW, J. A. A colour variety of the Common Eel, *Anguilla australis* Rich. *Victorian Natural.* xx, p. 140.

- KITAHARA, T. Note on the *Leucopsarion petersi* Hilg. Annot. zool. Japon. v, pp. 113-115, pl. v.
- . Preliminary note on the Salmon and Trout of Japan. T. c. pp. 117-120.
- KLUNZINGER, C. B. Entgegnung auf Nüsslin's Ausführungen in der Gangfisch-Blaufelchen-Frage vom September 1903. Jahresh. Ver. Württemb. lx, pp. 335-343.
- KNIPOWITSCH, N. Zoologische Ergebnisse der Russischen Expedition nach Spitzbergen. Fische. Nachtrag. Annuaire Mus. St. Petersb. viii, 1903, pp. 144-156.
- KOCH, A. Die fossilen Fische des Beocsiner Cement-Mergels. Ann. Mus. Hungar. ii, pp. 1-72, pls. i-vii.
- . Fossile Haifischzähne und Säugetierreste von Felsőestergály, im Komitate Nógrád. Foldtani Kozl. xxxiv, pp. 190-203, 260-274, figg., 1 pl.
- . Kleine paläontologische Mittheilungen. T. c. pp. 332-335, 365-368.
- KOLOMBATOVIĆ, G. Contribuzioni alla fauna die Vertebrati della Dalmazia. Glasnik Naravosl. druzt. xv, pp. 1-19.
- KOROTNEFF, A. DE. Résultats d'une Expédition Zoologique au Lac Baikal pendant l'été de 1902. Arch. Zool. exp. (4) ii, pp. 1-26, figg.
- . Ueber einen Baikalfisch. Biol. Centrbl. xxiv, pp. 641-644.
- KUNSTLER, J. Note sur les mœurs du Muge de l'étang de Mimizan. C.R. Soc. Biol. lvi, pp. 427 & 428.
- LAHILLE, F. Nota sobre un género nuevo de Escómbrido. An. Mus. Buenos Aires (3) ii, 1903, pp. 375 & 376.
- LAMBE, L. M. Progress of Vertebrate Palæontology in Canada. Tr. Soc. Canada x, iv, pp. 13-56.
- LAMS, H. Contribution à l'étude de la genèse du vitellus dans l'ovule des Téléostéens. Arch. anat. micr. vi, pp. 633-652, pls. xxi & xxii.
- LAURIE, R. D. The fecundity of the Plaice. P. Liverp. biol. Soc. xviii, pp. 153-156.
- LANGELAAN, J. W. On the form of the trunk-myotome. P. Ac. Amsterdam vii, pp. 34-40, figg.
- LARGE, T. A list of the native Fishes of Illinois, with keys. Rep. Fish Comm. Illinois 1900-1902, 30 pp., 2 pls.
- *LEONHARDT, E. Die Bastarde der Deutschen karpfenähnlichen Fische. Neudamm, 1904, 8vo, 58 pp., figg.
- LICHTENFELT, H. Ueber die chemische Zusammensetzung einiger Fischarten, warum und wie sie periodisch wechselt. Arch. ges. Physiol. ciii, pp. 353-402, figg.
- LO BIANCO, S. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. Jena, 1904, 8vo, 91 pp., 31 pls.
- LOCY, W. A. A new cranial nerve in Selachians. Mark Anniv. Vol. pp. 39-55, pls. v & vi.
- LOEWENTHAL, N. Beitrag zur Kenntniss der Körnerzeller des Neunauges. Anat. Anz. xxv, pp. 81-94, figg.
- LONG, J. A. The reaction of eyeless (blinded) Fish to light. Science (2) xix, p. 248.

- LÖNNBERG, E. Bronn's Klassen und Ordnungen des Thier-Reichs. VI. 1. Pisces (Fische). Lief. 13-15, pp. 209-240, pls. x-xii.
- . On some Fishes from the lakes of the Cameroon Mountain. Ann. Nat. Hist. (7) xiii, pp. 135-139.
- . On the occurrence of *Cottus quadricornis* in Lake Malären. Bull. Geol. Inst. Upsala vi, pp. 85-91, figg.
- LUBOSCH, W. Untersuchungen über die Morphologie des Neunaugeneies. Jena. Zeitschr. xxxviii, pp. 673-724, figg., pl. xxiii.
- LUCAS, F. A. The osteology and immediate relations of the Tile-fish, *Lopholatilus chamaeleonticeps*. Bull. Bur. Fisher. xxiv, pp. 81-86, figg.
- LYDEKKER, R. Vertebrate Palæontology of Cambridgeshire. In J. E. MARR & A. E. SHIPLEY, Handbook to the Natural History of Cambridgeshire. Cambridge, 1904, pp. 51-70.
- LYDELL, D. The habits and culture of the Black Bass. Bull. U. S. Fish Comm. xxii, pp. 39-44.
- LYON, E. P. On Rheotropism. I. Rheotropism in Fishes. Amer. J. Physiol. xii, pp. 149-161.
- MAXWELL, Sir H. British Fresh-water Fishes. Woburn Library of Natural History. London, 1904, 8vo, 316 pp., figg., 12 pls.
- MCINTOSH, W. C. Note on the egg of the Shanny (*Blennius pholis* L.). Rep. Brit. Ass. 1903, p. 697.
- MEEK, A. The migrations and the growth of Plaice. Rep. Sci. Observ. Northumb. Fisher. Comm. 1904, pp. 70-80, fig.
- . Faunistic Notes. T. c. pp. 86 & 87.
- . On the Fishes of the North-East Coast. Tr. Northumb. Soc. (2) i, pp. 35-38.
- . Notes on the auditory organ and the orbit of *Orthogoriscus mola*. Anat. Anz. xxv, pp. 217-219, figg.
- MEEK, S. E. The fresh-water Fishes of Mexico North of the Isthmus of Tehuantepec. Field Mus. Zool. v, pp. 1-252, figg., pls. i-xvii.
- MICHAILOVSKY, M. On two little-known Coregonids from Lake Onega [Russian text]. Annuaire Mus. St. Petersb. viii, 1903, pp. 345-355.
- . On an exceptionally large *Orthogoriscus mola* L. [Russian text.] T. c. pp. xlvi & xlvii.
- MIRANDA RIBEIRO, A. DE. Pescas do "Annie." A Lavoura, Bol. Soc. Agric. Rio Janeiro 1904, 53 pp. [Separate copy].
- MITCHELL, E. G. Oral breathing valves of Teleosts, their modifications and relation to the shape of the mouth. Amer. Natural. xxxviii, pp. 153-164, figg., & p. 405.
- MOENKHAUS, W. T. The development of the hybrids between *Fundulus heteroclitus* and *Menidia notata*, with especial reference to the behaviour of the maternal and paternal chromatin. Amer. J. Anat. iii, pp. 29-64, 4 pls.
- MOROFF, T. Ueber die Entwicklung der Kiemen bei Fischen. Arch. mikr. Anat. lxiv, pp. 189-213, pls. xi & xii.
- MOSER, FANNY. Beiträge zur vergleichenden Entwicklungsgeschichte der Schwimmblase. Arch. mikr. Anat. lxiii, pp. 532-574, pls. xxii-xxv.

- NEAL, H. V. The development of ventral nerves in Selachii. 1. Spinal ventral nerves. Mark Anniv. Vol. pp. 291-313, pls. xxii-xxiv.
- NEHRING, A. Ueber die geographische Verbreitung des *Pelecus cultratus* L. in Deutschland. SB. Ges. naturf. Berlin 1904, pp. 43-45.
- NEUMAYER, L. Die Entwicklung des Darmkanales, von Lunge, Leber, Milz, und Pankreas bei *Ceratodus forsteri*. In SEMON, Zool. Forsch. i, pp. 377-422, figg., pl. xxxvi.
- NEWTON, E. T. On the occurrence of *Edestus* in the Coal-Measures of Britain. Quart. J. Geol. Soc. lx, pp. 1-8, figg., pl. i.
- NICOLAS, A. Recherches sur le développement du pancréas, du foie et de la rate chez le Sterlet (*Acipenser ruthenus*). Arch. Biol. xx, pp. 425-460, pls. x-xii.
- NIKOLSKI, A. New species of Fishes from Eastern Asia [Russian text]. Annuaire Mus. St. Petersb. viii, 1903, pp. 356-363.
- NÜSSLIN, O. Gangfisch und Blaufelchen. Jahresh. Ver. Wurttemb. lx, pp. 189-197.
- OSBORN, H. F. The great Cretaceous Fish *Portheus molossus* Cope. Bull. Amer. Mus. xx, pp. 377-381, figg., pl. x.
- OTAKI, K., FUJITA, T. & HIGURASHI, T. Fishes of Japan. An account principally on economic species [in Japanese]. Vol. i, No. 2, 8vo text, 4to pls.
- PANTANELLI, D. Denti di *Ptychodus* nell' Appennino modenense. Pr.-verb. Soc. Toscana xiv, pp. 70 & 71.
- . Sugli otoliti fossili. T. c. pp. 71 & 72.
- PARKER, G. H. Hearing and allied senses in Fishes. Bull. U. S. Fish Comm. xxii, pp. 45-64, pl. ix.
- . The function of the lateral line organs of Fishes. Amer. Natural. xxxviii, pp. 496 & 497.
- PATTEN, W. New facts concerning *Bothriolepis*. Biol. Bull. vii, pp. 113-124, figg.
- PAVESI, P. Esquisse d'une Faune Valdôtaine. Atti Mus. Milano xliii, pp. 191-260.
- PELLEGRIN, J. Sur les pharyngiens inférieurs chez les Poissons du genre *Orestias*. C.R. Ac. Sci. cxxxix, pp. 682-684, figg.
- . Contribution à l'étude anatomique, biologique et taxinomique des Poissons de la famille des Cichlidés. Mem. Soc. zool. France xvi, pp. 41-402, figg., pls. iv-vii.
- . Mission G. de Créqui-Montfort et E. Sénéchal de la Grange. Note sur les Poissons des Lacs Titicaca et Poopo. Bull. Soc. zool. France xxix, pp. 90-96. Note sur les Poissons de la Côte Chilienne. T. c. pp. 117-121.
- . Diagnoses préliminaires de Poissons nouveaux du Lac Victoria, recueillis par M. Alluaud. T. c. pp. 184-186.
- . Characinidés nouveaux de Casamance. Bull. Mus. Paris 1904, pp. 218-221.
- . Cyprinodontidés nouveaux du Congo et de l'Oubanghi. T. c. pp. 221-223.

- [PELLEGRIN, J.] Poissons du Chari et du Lac Chad, récoltés per la Mission Chevalier-Decorse. T. c. pp. 309-313.
- . Mormyridés nouveaux de la collection du Muséum. T. c. pp. 438-442.
- . Poissons recueillis par M. Ch. Gravier à Djibouti et à Obock. T. c. pp. 543-545.
- PETERSEN, C. G. J. On the larval and postlarval stages of the Long Rough Dab and the genus *Pleuronectes*. Meddel. Komm. Havurders., Fisk. i, No. 1, 12 pp., 2 pls.
- PETTIS, C. R. Albino Brook Trout. Science (2) xix, pp. 867 & 868.
- PHILIPPI, E. Ein neuer Fall von Arrhenoidie. SB. Ges. naturf. Berlin 1904, pp. 196 & 197.
- POPTA, C. M. L. Les arcs branchiaux de quelques Murænidæ. Ann. Sci. Nat. (8) xix, pp. 367-390, figg.
- . Descriptions préliminaires des nouvelles espèces de Poissons recueillies au Bornéo central par M. le Dr A. W. Nieuwenhuis en 1898 et en 1900. Notes Leyden Mus. xxiv, pp. 179-202.
- PRICE, G. C. A further study of the development of the excretory organs in *Bdellostoma stouti*. Amer. J. Anat. iv, pp. 117-138, figg.
- PRIEM, F. Sur les Poissons du Bartonien et les Siluridés et Acipensérédés de l'Eocène du Bassin de Paris. Bull. Soc. geol. France (4) iv, pp. 42-47, figg.
- . Sur les Poissons fossiles des terrains tertiaires supérieurs de l'Hérault. T. c. pp. 285-294, figg.
- PUNNETT, R. C. Cephalochorda. Note on meristic variation in the group. In J. S. GARDINER, Faun. Mald. and Laccad. Archip. i, pp. 361-367.
- . Merism and sex in *Spinax niger*. Biometrika iii, pp. 313-362, pl. i.
- QUINTON, R. Degré de concentration saline du milieu vital de l'Anguille dans l'eau de mer et dans l'eau douce et après son passage expérimental de la première eau dans la seconde. C.R. Ac. Sci. cxxxix, pp. 938-941, and C.R. Soc. Biol. lvii, pp. 170-172.
- . Communication osmotique, chez le Poisson Sélacien marin, entre le milieu vital et le milieu extérieur. Tt. cc. pp. 995-979, 513 & 514.
- REGAN, C. T. A monograph of the Fishes of the Family *Loricariidæ*. Tr. Zool. Soc. London xvii, pp. 191-350, pls. ix-xxi.
- . On a collection of Fishes made by Mr John Graham at Yunnan Fu. Ann. Nat. Hist. (7) xiii, pp. 190-194.
- . Descriptions of new or little-known Fishes from Mexico and British Honduras. T. c. pp. 255-259.
- . Descriptions of *Holocentrum osculum* Poey, and of a new Fish of the genus *Centropomus*. T. c. pp. 259-261.
- . Description of a new Fish of the genus *Chaetodon* from the New Hebrides. T. c. pp. 276 & 277, fig.
- . The phylogeny of the Teleostomi. T. c. pp. 329-349, figg., pl. vii.
- . Descriptions of three new marine Fishes from South Africa. Op. cit. xiv, pp. 128-130.
- . Descriptions of two new Cyprinid Fishes from Yunnan Fu. T. c. pp. 416 & 417.
- . On the affinities of the genus *Draconetta*, with description of a new species. T. c. pp. 130 & 131.

- REIGHARD, J. The Natural History of *Amia calva* Linnæus. Mark Anniv. Vol. pp. 57-109, figg., pl. vii.
- . Further observations on the breeding habits and on the function of the pearl organs in several species of Eventognathi. Science (2) xix, pp. 211 & 212.
- RENNIE, J. The epithelial islets of the pancreas in Teleostei. Quart. J. Micr. Sci. xlviii, pp. 379-405, pls. xxvi-xxviii, and Rep. Brit. Ass. 1903, p. 696.
- REYNOLDS, S. H. Vertebrata, with notes on the position of the [Rhætic, South Wales] Bone-bed. Quart. J. Geol. Soc. lx, pp. 208-210.
- RICCI, O. Ricerche sulle metamorfosi dei Murenoidei. Atti. Soc. Modena (4) iv, pp. 11-35.
- RICHARDSON, R. E. A review of the Sunfishes of the current genera *Apomotis*, *Lepomis*, and *Eupomotis*, with particular reference to the species found in Illinois. Bull. Illinois Lab. vii, pp. 27-35, figg.
- RICHE, A. Description paléontologique de la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon (2) i, No. 14, pp. 75-214.
- RIDEWOOD, W. G. On the cranial osteology of the Fishes of the families *Elopidae* and *Albulidae*, with remarks on the morphology of the skull in the Lower Teleostean Fishes generally. P. Z. S. 1904, ii, pp. 35-81, figg.
- . On the cranial osteology of the Fishes of the Families *Mormyridæ*, *Notopteridæ* and *Hyodontidæ*. J. Linn. Soc. xxix, pp. 188-217, pls. xxii-xxv.
- ROMANOWKY, G. On the fossil Fish *Lyrolepis caucasicus* Rom. [Russian text]. Verh. Russ. Min. Ges. (2) xlii, pp. 1-8, figg., pl. 1.
- ROULE, L. La pisciculture. Mem. Ac. Toulouse (10) iii, 1903, pp. 390-402.
- . L'acclimatation des Poissons exotiques. Op. cit. iv, pp. 113-122.
- RUTTER, C. Natural history of the Quinnet Salmon. A report of investigations in the Sacramento River, 1896-1901. Bull. U. S. Fish Comm. xxii, pp. 65-141, pls. x-xvi.
- . Notes on Fishes from streams and lakes of Northeastern California not tributary to the Sacramento River. T. c. pp. 145-160, figg.
- . Notes on Fishes from the Gulf of California, with the description of a new genus and species. P. Calif. Ac. Zool. (3) iii, pp. 251-253, pl. xxiv.
- SABATIER, A. Sur les mains scapulaires et pelviennes des Poissons holo-céphales et chez les Dipneustes. C.R. Ac. Sci. cxxxviii, pp. 249-252.
- SAMARINE, C. A. The Fishes of the Government Perm. [Russian text.] Bull. Soc. Oural. xxiv, pp. 47-66.
- SARGENT, P. E. The torus longitudinalis of the Teleost brain: its ontogeny, morphology, phylogeny, and function. Mark Anniv. Vol. pp. 399-416, pl. xxix.
- . The optic reflex apparatus of Vertebrates for short-circuit transmission of motor reflexes through Reissner's fibre; its morphology, ontogeny, phylogeny, and function. Part I. The Fish-like Vertebrates. Bull. Mus. Harvard xlv, pp. 129-258, 11 pls.
- SCHMIDT, J. On pelagic post-larval Halibut (*Hippoglossus vulgaris* Flem. and *H. hippoglossoides* Walb.). Meddel. Komm. Havunders., Fisk. i, No. 3, 12 pp., 1 pl.

- SCHMIDT, P. J. On the deep-sea Fish from Japan, *Liparis (Trismegistus) owstoni* Jordan and Snyder [Russian text]. *Annuaire Mus. St. Petersb.* ix, pp. xvii-xix.
- . On the *Liparis (Trismegistus) owstoni* Jordan and Snyder. *P. U. S. Mus.* xxviii, pp. 189-191, figg.
- SCHNEIDER, GUIDO. Ueber die Urgeschlechtszellen der Knochenfische. *KB. Ver. Riga* xlv, 1903, pp. 4-9.
- . Zur Fischkunde in den Ostseeprovinzen. *Op. cit.* xlvii, pp. 65 & 66.
- SCHREINER, K. E. Ueber das Generationsorgan von *Myxine glutinosa* (L.). *Biol. Centrbl.* xxiv, pp. 91-104, 121-129 and 162-173.
- SCUPIN, H. Ueber *Nephrotus chorzoviensis* H. v. Meyer. *Zeitschr. Deutsch. geol. Ges.* lv, pp. 465-474, pls. xxi & xxii.
- SEALE, A. Report of a mission to Guam. Part II. Fishes. *Pap. B. P. Bishop Mus.* i, (1903?) pp. 61-128.
- . New Hawaiian Fishes. *T. c.* No. 4, pp. 1-15, figg.
- SEGRE, ROSETTA. *Res Italicæ.* XII. Pesci del Cadore. *Boll. Mus. Torino* xix, No. 472, 18 pp.
- SELLIER, J. Sur le pouvoir amyolytique du sang des Poissons et des Crustacés. *Trav. Lab. Arcachon* vii, pp. 29-31.
- SHARP, B. & FOWLER, H. W. The Fishes of Nantucket. *P. Ac. Philad.* lvi, pp. 504-512.
- SIMIONESCU, J. Vorläufige Mitteilung über eine oligocäne Fischfauna aus den rumänischen Karpathen. *Verh. geol. Reichsant.* 1904, pp. 147-149.
- . Asupra Cător-va Pesci fosili din Tertiariul Romanesc. *Publ. Ac. Romana*, No. xii, 18 pp., 2 pls.
- SMITH, H. M. Description of a new species of Blind Eel, of the genus *Anguilla*. *P. Soc. Washington* xvii, pp. 121 & 122, fig.
- . A new Cottoid Fish from Behring Sea. *T. c.* pp. 163 & 164, fig.
- . A Fish new to Florida waters. *Science* (2) xix, p. 314.
- & HARRON, L. G. Breeding habits of the Yellow Cat-Fish. *Bull. U. S. Fish Comm.* xxii, pp. 151-154.
- SNYDER, J. O. A catalogue of the Shore Fishes collected by the Steamer Albatross about the Hawaiian Islands in 1902. *Bull. U. S. Fish Comm.* xxii, pp. 513-538, pls. i-xiii.
- SOUTHWELL, T. Fauna and Flora of Norfolk. Additions to Part IV, Fishes (Fifth List). *Tr. Norfolk Soc.* vii, pp. 741-743.
- SOWINSKY, W. Introduction to the study of the fauna of the Ponto-Aralo-Caspian Marine Basin, from the point of view of an independent zoo-geographical province. [Russian text.] *Zapiski Kiev. Obsch.* xviii, pp. 1-216.
- SPENGLER, J. W. Ueber Schwimmblasen, Lungen und Kiementaschen der Wirbelthiere. *Zool. Jahrb., Suppl.* vii, pp. 727-749.
- STARKS, E. C. A synopsis of characters of some Fishes belonging to the Order Haplomi. *Biol. Bull.* vii, pp. 254-262.
- . The osteology of *Dallia pectoralis*. *Zool. Jahrb. Syst.* xxi, pp. 249-262, figg.
- . The osteology of some Berycoid Fishes. *P. U. S. Mus.* xxvii, pp. 601-619, figg.

- STEAD, D. G. Contribution to Australian Ichthyology. Rep. Fisher. N. S. W. for 1902, ii, pp. 34 & 35, figg. (1903).
- STROMER, E. Myliobatiden aus dem Mitteleocän der bayerischen Alpen. Zeitschr. Deutsch. geol. Ges. lvi, pp. 249-263, figg., pl. xvi.
- . Mematognathi aus dem Fajûm und dem Natronthale in Aegypten. N. Jahrb. Min. 1904, i, pp. 1-7, pl. i.
- STRONG, O. S. The cranial nerves of *Squalus acanthias*. Biol. Bull. vi, p. 314.
- SUND, O. Die Entwicklung des Geruchsorgan bei *Spinax niger*. Biol. Centrbl. xxiv, pp. 651-659, figg.
- SUPINO, F. Morfologia del Cranio dei Teleostei. Rome: 1904, 8vo. Fasc. 1. Percidæ. 21 pp., 4 pls. Fasc. 2. Berycidæ. Rome: 1904, 8vo, 17 pp., 1 pl. Fasc. 3. Trichiuridæ. Rome: 1904, 12 pp., 1 pl.
- . Contributo allo studio del tessuto osseo dell' *Orthogoriscus*. Rend. Acc. Lincei xiii, i, pp. 118-121.
- . Il cranio dei Teleostei in rapporto al loro genere di vita. Op. cit. ii, pp. 625-631.
- SUWOROFF, E. Ueber dei Regeneration der Flossen bei den Knochenfischen. Trudui St. Petersburg. Obshch. xxxiii, 4, pp. 1-81, pl. — [Russian text, German Résumé.]
- SWAEN, A. & BRACHET, A. Étude sur la formation des feuillets et des organes dans le bourgeon terminal et dans la queue des embryons des Poissons téléostéens. Arch. Biol. xx, pp. 461-610, pls. xiii-xvi.
- THOMSON, J. S. The periodic growth of scales in Gadidæ as an index of age. J. Mar. Biol. Ass. (2) vii, pp. 1-109, pls. i-viii.
- TRAQUAIR, R. H. A Monograph of the Fishes of the Old Red Sandstone of Britain. Part II, No. 2. The Asterolepidæ. Pal. Soc. Mon. 1904, pp. 91-118, figg., pls. xix-xxvi.
- VAILLANT, L. Poissons recueillis par M. A. Pavie en Indo-Chine. Mission Pavie Indo-Chine 1879-1895 iii, pp. 459-470, pl. xxiii.
- . Sur le *Mitsukurina owstoni* Jordan. C.R. Ac. Sci. cxxxviii, pp. 1517 & 1518.
- . Sur un Cyprinoïde nouveau de Tunisie, le *Leuciscus* (*Phoxinellus*) *chaignoni*. Bull. Mus. Paris 1904, pp. 188-190.
- . Quelques Reptiles, Batraciens et Poissons du Haut Tonquin. T. c. pp. 297-301.
- VALLÉ-POPE, E. The Fishes of Cambridgeshire. In J. E. MARR & A. E. SHIPLEY, Handbook to the Natural History of Cambridgeshire. Cambridge, 1904, pp. 108-113.
- VERRILL, A. E. Additions to the Fauna of the Bermudas from the Yale Expedition of 1901, with notes on other species. Tr. Connect. Ac. xi, 1903, pp. 15-62.
- . The Bermudas. T. c. pp. 413-956, figg.
- VIRÉ, A. Sur quelques expériences effectuées au laboratoire des Catacombes du Muséum d'histoire naturelle. C.R. Ac. Sci. cxxxviii, pp. 706-708.
- VOLZ, W. Fische von Sumatra, gesammelt von Herrn G. Schneider. Rev. Suisse Zool. xii, pp. 451-493.

- VUTSKITS, G. Ueber neuere Standorte und die geographische Verbreitung der selteneren Fischartens Ungarns and Kroatiens. Math. naturw. Ber. Ungarn xix, pp. 342 & 343.
- . A kurta baing (*Leucaspilus delineatus* Heck.). Allatt. Kozl. Magyar Tars. ii, 1903, pp. 169-188, pl. xv.
- WAGNER, G. Notes on *Polyodon*. i. Science xix, pp. 554 & 555.
- WAITE, E. R. Synopsis of the Fishes of New South Wales. Mem. N. S. Wales Club, No. 2, 59 pp.
- . Additions to the Fish fauna of Lord Howe Island. No. 4. Rec. Austral. Mus. v, pp. 135-186, pls. xvii-xxiv.
- . Catalogue of the Fishes of Lord Howe Island. T. c. pp. 187-230.
- . New records or recurrences of rare Fishes from Eastern Australia. No. 3. T. c. pp. 231-244, pls. xxv & xxvi.
- . A review of the Eleotrids of New South Wales. T. c. pp. 277-286, pls. xxxiv-xxxvi.
- . The breeding habits of the Fighting Fish (*Betta pugnax* Cantor). T. c. pp. 293-295, pl. xxxviii.
- WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Festschr. Haeckel, pp. 133-214, figg., pl. viii.
- WERNER, F. Die Fische der zoologisch-vergleichend-anatomischen Sammlung der Wiener Universität. i. Teil. Zool. Jahrb. Syst. xxi, pp. 263-302, figg.
- WICKES, W. H. The Rhætic Bone Beds. P. Bristol Soc. (2) x, pp. 213-227.
- WIEDERSHEIM, R. Nachträgliche Bemerkungen zu meinem Aufsatz über den Kehlkopf der Ganoiden und Dipnoer. Anat. Anz. xxiv, pp. 651 & 652.
- . Ueber das Vorkommen eines Kehlkopfes bei Ganoiden und Dipnoern sowie über die Phylogenie der Lunge. Zool. Jahrb., Suppl. vii, pp. 1-66, fig., pls. i-vi.
- *WIJHE, J. W. VAN. Beiträge zur Anatomie der Kopfregion des *Amphioxus lanceolatus*. In Petrus Camper i, pp. 109-195, pls. viii-xi (1901).
- WILLEY, A. Leaf-mimicry. Spolia Zeylan. ii, pp. 51-55, fig.
- WILLIAMSON, H. C. On the post-larval and early young stages of the Witch (*Pleuronectes cynoglossus* Linn.). Rep. Fish. Board Scotland xxii, iii, pp. 270-273, pl. xvi.
- WOODWARD, A. S. On the jaws of *Ptychodus* from the Chalk. Quart. J. Geol. Soc. lx, pp. 133-135, fig., pl. xv.
- . *Diplomystus marmorensis*, sp. n. T. c. pp. 284 & 285.
- . Some recent discoveries concerning the teeth of extinct Animals. Tr. Odontol. Soc. xxxvi, pp. 185-198, figg.
- . On a Carboniferous Acanthodian Fish, *Gyracanthides*. Rep. Brit. Ass. 1903, pp. 662 & 663.
- WOODWARD, H. The President's Address: The evolution of Vertebrate Animals in time. J. R. Micr. Soc. 1904, pp. 137-164.
- ZARNIK, B. Ueber die Geschlechtsorgane von *Amphioxus*. Zool. Jahrb. Anat. xxi, pp. 253-338, figg., pls. xvii-xxi.
- . Ueber segmentale Venen bei *Amphioxus* und ihr Verhältniss zum Ductus Cuvieri. Anat. Anz. xxiv, pp. 609-630, figg.

II. GENERAL SUBJECT.

Vol. VII. of the Cambridge Natural History is mainly devoted to the Fishes. The general part and the non-Teleostean orders by T. W. BRIDGE, the Teleosteans by G. A. BOULENGER, the Leptocardii by W. A. HERDMAN.

H. WOODWARD, J. R. Micr. Soc. 1904, pp. 138-141, remarks on the evolution of Fishes in time.

A. KEMNA, Bull. Soc. malac. Belgique xxxviii, pp. xcvi-cvii, remarks on the origin of Vertebrates.

A. KEMNA, Mem. Soc. Belge Geol. xvii, pp. 339-382, and xviii, pp. 3-78, figg., reviews our knowledge of the *Arthrodira*, *Ostracophori*, and *Cycliæ*.

C. T. REGAN, Ann. Nat. Hist. (7) xiii, pp. 329-349, figg., pl. vii, writes on the phylogeny of the Teleostomi, among which he includes the Placodermi (*Coccosteidae*, *Asterolepidae*, *Cephalaspidæ*). The *Chondrostei* are regarded as the most generalized Teleostomi, and the *Holostei* are included in the *Teleostei*. Remarks by C. R. EASTMAN, Amer. J. Sci. (4) xviii, pp. 141-144.

W. K. GREGORY, Biol. Bull. vii, pp. 55-66, remarks on the relations of the anterior visceral arches to the chondrocranium, with special reference to the conditions known as "autostylic," "amphistylic," and "hyostylic."

K. FÜRBRINGER, in SEMON, Zool. Forsch. i, pp. 423-510, pls. xxxvii-xli, deals with the skeleton of the Dipneusti and compares it to that of Plagiostomi, Holocephali, and Dipneusti.

A. SABATIER, C.R. Ac. Sci. cxxxviii, pp. 249-252, remarks on the pectoral and pelvic arches of the *Holocephali* and *Dipneusti*.

E. S. GOODRICH, Quart. J. Micr. Sci. xlvii, pp. 465-522, figg., pls. xxxv-xli, has investigated the structure and development of the dermal fin-rays of Fishes, living and extinct.

H. BRAUS, Festschr. Haeckel, pp. 377-435, figg., pls. xiii & xiv, has a contribution to the study of the development of the fins and visceral arches.

T. MOROFF, Arch. mikr. Anat. lxiv, pp. 189-213, pls. xi & xii, remarks on the development of the gills of Fishes.

A. S. WOODWARD, Tr. Odontol. Soc. xxxvi, pp. 185-190, figg., remarks on the teeth of some fossil fishes.

A. CARGIULO, Riv. ital. Sci. Nat. xxiv, pp. 5-12, remarks on the histology of the liver and kidney in Fishes.

H. BLUNTSCHLI, in SEMON, Zool. Forsch. i, pp. 357-375, figg., pl. xxxv, investigates the histology of the liver of Fishes.

E. BIZZOZERO, Arch. ital. Biol. xli, pp. 233-245, pl. —, has made experiments on the regeneration of the intestinal epithelium in Fishes.

J. P. BOUNHIOL, C.R. Ass. Franc. xxxii, pp. 813-815, remarks on the respiration of Marine Fishes kept in aquariums.

G. H. PARKER, Bull. U. S. Fish Comm. xxii, pp. 45-64, pl. ix, writes on the sense of hearing and allied senses in Fishes.

C. J. HERRICK, Bull. Denison Univ. xii, 1903, pp. 39-96, and Bull. U. S. Fish Comm. xxii, pp. 237-272, figg., writes on the organ and sense of taste in Fishes.

P. E. SARGENT has studied the optic reflex apparatus in Fishes. Bull. Mus. Harvard xlv, pp. 129-258, 11 pls.

E. P. LYON, Amer. J. Physiol. xii, pp. 149-161, writes on the sense of orientation in Fishes.

G. H. PARKER, Amer. Natural. xxxviii, pp. 496 & 497, remarks on the function of the lateral line organs of Fishes.

M. GATTI, Annali di Agricoltura, 1902 (1903), 126 pp., 1 pl., has investigated the luminous organs of Fishes.

A. VIRÉ, C.R. Ac. Sci. cxxxviii, p. 707, remarks on the effects of perpetual darkness on Fishes.

J. SELLIER, Trav. Lab. Arcachon vii, pp. 29–31, remarks on the amyolytic properties of the blood of Fishes.

H. LICHTENFELT, Arch. ges. Physiol. ciii, pp. 353–402, figg., writes on the chemical composition of Fishes.

On the diseases of Fishes: B. HOFER, Handbuch der Fischkrankheiten. Munich: 1904, 8vo, 359 pp., figg.

On the occurrence of pebbles in the stomach of Fishes: W. H. WICKES, P. Bristol Soc. (2) x, pp. 220 & 225.

F. WERNER, Zool. Jahrb. Syst. xxi, pp. 263–302, figg., gives a list of the non-Teleostean Fishes in the Vienna University Museum.

III. FAUNÆ.

EUROPE.

Spitzbergen. Additions to the Fish-fauna by N. KNIPOWITSCH, Annuaire Mus. St. Petersb. viii, 1903, pp. 144–156.

British Isles. British Fresh-water Fishes, by Sir H. MAXWELL, and British Salt-Water Fishes, by F. G. AFLALO. Woburn Library of Natural History. London: 1904, 8vo.

N. E. Coast of England. On additions to the list of the Fishes: A. MEEK, Tr. Northumb. Soc. (2) i, pp. 35–38. On some Fishes from Northumberland: A. MEEK, Rep. Sci. Observ. Northumb. Fisher. Comm. 1904, pp. 86 & 87.

Norfolk. Additions to the list of the Fishes, by T. SOUTHWELL, Tr. Norfolk Soc. vii, pp. 741–743.

Cambridgeshire. List of the Fishes, by E. VALLÉ-POPE, Handbook Nat. Hist. of Cambridgeshire, pp. 108–113.

Atlantic off West Coast of Ireland. On young or larval specimens obtained by the "Oceana": HOLT & BYRNE, Ann. Nat. Hist. (7) xiv, pp. 37–40, fig.

France. A. DAGUIN, Naturaliste xxvi, pp. 185–187, 206, 217 & 218, 230 & 231, 242 & 243, 254 & 255, 267 & 268, 280, gives an alphabetical index to the vernacular and local names of French fresh-water Fishes.

Bay of Biscay. On some deep-sea fishes dredged by the yacht "Princesse Alice II": ALBERT DE MONACO, C.R. Ac. Sci. cxxxviii, p. 1399.

Coast of Portugal. On the Sharks and Dog-fishes: CARLOS DE BRAGANÇA, Res. Inv. Sci. Y. Amelia, Ichthyol. ii, 107 pp., 2 pls.

Balearic Islands. Notes on the Fishes: J. FERRER Y HERNANDES, Bol. Soc. espan. iii, 1903, pp. 89–98.

Italy. S. LO BIANCO's paper on pelagic and deep-sea Fishes from near Capri (Zool. Rec. 1901, Pisc. pp. 8 & 14), translated into German. Pelagische Tiefseefischerei der "Maja." Jena: 1904, 8vo, pp. 1–24, with the addition of plates. On a collection of Fishes from the Cadore district: ROSETTA SEGRE, Boll. Mus. Torino xix, No. 472. On the Fishes of the Aosta Valley: PAVESI, Atti Mus. Milano xliii, pp. 215 & 216.

Gulf of Genoa. On rare Fishes: V. ARTOLA, Ann. Mus. Genova (3) i, pp. 153–168.

Adriatic. Synopsis of the Chondropterygians: WERNER, Zool. Jahrb. Syst. xxi, p. 277.

Hungary and Croatia. On the distribution of some of the rarer Fishes: G. VUTSKITS, Math. naturw. Ber. Ungarn xix, pp. 342 & 343.

Dalmatia. Additions to the Fish-fauna by G. KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, pp. 1–10.

Russia. GUIDO SCHNEIDER, KB. Ver. Riga xlvii, pp. 65 & 66, has a supplement to his account of the Fishes of the Baltic Provinces. On the Fishes of the Government Perm: C. A. SAMARINE, Bull. Soc. Oural. xxiv, pp. 47-66 [Russian text]. List of the Fishes of Southern Russia by W. SOWINSKY, Zapiski Kiev. Obshch. xviii, pp. 162-181.

ASIA.

Japan. Part 2 of OTAKI, FUJITA, and HIGURASHI's "Fishes of Japan" was issued in 1904. Further contributions by JORDAN & SNYDER, P. U. S. Mus. xxvii, pp. 223-226, figg., and JORDAN & STARKS, t. c. pp. 91-175, 231-335, and 575-599, figg. On the Fishes dredged by the "Albatross" on the Coast: JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, pp. 577-630, figg. On new deep-sea species: JORDAN & SNYDER, Smithsonian Collect. i, pp. 230-240, pls. lviii-lxiii. On new or little known Fishes: ISHIKAWA, P. Tokyo Mus. i, pp. 1-17, pls. i-vii. On the Chimæroids and Myxinoids: B. DEAN, J. Coll. Tokyo xix, Nos. 2-4, pls.

Yunnan. Descriptions of new Fishes by REGAN, Ann. Nat. Hist. (7) xiii, pp. 190-194, and xiv, pp. 416 & 417.

Gulf of Manaar. On a collection of Fishes: J. JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, pp. 201-222, 2 pls.

Indo-China. On a collection of Fishes: L. VAILLANT, Mission Pavie iii, pp. 459-470, pl. xxiii.

Upper Tonkin. On a small collection of Fishes: VAILLANT, Bull. Mus. Paris 1904, pp. 297-301.

Malay Peninsula. List of the Fishes, with descriptions of new species by G. DUNCKER, Mt. Mus. Hamburg xxi, pp. 133-207, fig., 2 pls. List of the Fishes in the Raffles Museum, with their Malay names: R. HANITSCH, Ann. Rep. Raffles Mus. f. 1903, pp. 9-15.

Central Borneo. Descriptions of new Fishes by C. M. L. POPTA, Notes Leyden Mus. xxiv, pp. 179-202.

Sumatra. On a collection of Fishes: W. VOLZ, Rev. Suisse Zool. xii, pp. 451-493.

AFRICA.

Egypt. List of Fishes kept in the Cairo Aquarium, with notes on the habits: S. S. FLOWER, Rep. Zool. Gardens Giza, f. 1903, pp. 39-47.

Red Sea. On a collection from Erythræa: CLEMENTINA BORSIERI, Ann. Mus. Genova (3) i, pp. 187-220. On some Fishes from Djibouti and Obock: PELLEGRIN, Bull. Mus. Paris 1904, pp. 543-545.

Gallaland and Southern Ethiopia. On a collection of Fishes: BOULENGER, P. Z. S. 1903, ii, pp. 328-334, pls. xxix-xxxi.

Lake Victoria. Diagnoses of new Fishes by PELLEGRIN, Bull. Soc. zool. France xxix, pp. 184-186.

Lake Chad and Shari River. List of Fishes by PELLEGRIN, Bull. Mus. Paris 1904, pp. 309-313.

Niger. Descriptions of new Fishes by BOULENGER, P. Z. S. 1904, i, pp. 197-199, pls. vii & viii.

Cameroon Mountain. On some lake Fishes: LÖNNBERG, Ann. Nat. Hist. (7) xiii, pp. 135-139.

South Africa. Descriptions of new Marine Fishes, by J. D. F. GILCHRIST, Mar. invest. S. Africa iii, pp. 1-16.

AMERICA.

East Greenland. On the Fishes: A. S. JENSEN, Medd. Gronland xxix, pp. 213-276, pls. xi-xiii.

Massachusetts. T. GILL, Science (2) xx, pp. 321-338, reviews the history of the ichthyology of Massachusetts. On the Fishes of Nantucket Id. : B. SHARP & H. W. FOWLER, P. Ac. Philad. lvi, pp. 504-512.

Maine. On some fresh-water Fishes : W. C. KENDALL, Bull. U. S. Fish Comm. xxii, pp. 353-368, figg.

Illinois. List of the Fishes, with keys, by T. LARGE, Rep. Fish. Comm. Illin. 1900-02, 30 pp., 2 pls.

Colorado. On the Fishes of Boulder County : C. JUDAY, Stud. Univ. Colorado ii, pp. 113 & 114.

Texas. Notes on Fishes, by H. W. FOWLER, P. Ac. Philad. lvi, pp. 242-249.

California. On Fishes from streams and lakes of North-eastern California not tributary to the Sacramento Basin. Bull. U. S. Fish Comm. xxii, pp. 145-160, figg.

Gulf of California. On some Fishes : C. RUTTER, P. Calif. Ac. Zool. (3) iii, pp. 251-253, pl. xxiv.

Bermudas. On the Fishes : VERRILL, Tr. Connect. Ac. xi, 1903, pp. 55-57, 698-705, figg.

Cuba. On the fresh-water Fishes of Western Cuba : EIGENMANN, Bull. U. S. Fish Comm. f. 1902, pp. 211-236, pls. xix-xxi (1903).

Tortugas Archipelago. On a collection of Fishes : D. S. JORDAN, Bull. U. S. Fish Comm. xxii, pp. 539-544, pls. i & ii.

Mexico. On the fresh-water Fishes known from North of the Isthmus of Tehuantepec : S. E. MEEK, Field Mus. Zool. v, pp. 1-252, figg., pls. i-xvii.

Mexico and British Honduras. On new or little-known Fishes : REGAN, Ann. Nat. Hist. (7) xiii, pp. 255-261.

Panama Bay. On the Fishes : C. H. GILBERT & E. C. STARKS, Mem. Calif. Ac. iv, pp. 1-304, pls. i-xxxiii.

South America. Monograph of the *Loricariidæ*, by REGAN, Tr. Zool. Soc. London xvii, pp. 191-350, pls. ix-xxi.

Coast of Brazil. On the Fishes collected by the SS. "Annie" : A. DE MIRANDA RIBEIRO, A Lavoura, Bol. Soc. Agric. Rio Janeiro 1904, 53 pp.

Peru. On a collection of Fishes from Lakes Titicaca and Poopo : PELLEGRIN, Bull. Soc. zool. France xxix, pp. 90-96.

Chili. On a collection of Marine Fishes : PELLEGRIN, Bull. Soc. zool. France xxix, pp. 117-121.

Magellan Strait and Archipelago. On the Fishes : L. DOLLO, Rés. du Voy. du S.Y. Belgica, Zool., Poiss., Antwerp 1904, 4to.

AUSTRALASIA and POLYNESIA.

Eastern Australia. Records of new or rare Fishes, by E. R. WAITE, Rec. Austral. Mus. v, pp. 231-244, figg., pls. xxv & xxvi.

New South Wales. List of the Fishes, by E. R. WAITE, Mem. N. S. Wales Club, No. 2, 59 pp.

Lord Howe Island. Fourth report and complete list of the Fishes, by E. R. WAITE, Rec. Austral. Mus. v, pp. 135-186, 187-230, pls. xvii-xxiv.

Hawaiian Islands. On collections of Fishes : JORDAN & SNYDER, P. U. S. Mus. xxvii, pp. 939-948 & xxviii, pp. 123-126. O. P. JENKINS, Bull. U. S. Fish Comm. xxii, pp. 417-511, figg., and J. O. SNYDER, t. c. pp. 513-538, pls. i-xiii.

Guam Id. On the Fishes : A. SEALE, Pap. B. P. Bishop Mus. i, pp. 61-128.

New Zealand. List of the Fishes : F. W. HUTTON, Index Faunæ Novæ Zealandiæ, pp. 40-55.

ANTARCTIC SEAS.

On the Fishes : L. DOLLO, Rés. du Voy. du S. Y. Belgica, Zool., Poissons, Antwerp 1904, 4to.

IV. PALÆONTOLOGY.

C. R. EASTMAN, Science (2) xx, pp. 648 & 649, remarks on the earliest mention of fossil Fishes.

Chalk of England. General list of the Fishes : JUKES-BROWNE, Upper Chalk of England (Mem. geol. Surv. U. K.), pp. 462-467.

Rhætic of Western England. On Fishes from the Bone Beds : W. H. WICKES, P. Bristol Soc. (2) x, pp. 216-227

Lower Coal Measures of Lancashire. List of the Fishes, by H. BOLTON, Tr. Manchester Geol. Soc. xxviii, pp. 401-405, 604-624.

Cambridgeshire. On the fossil Fishes : LYDEKKER, Handbook Nat. Hist. of Cambridgeshire, pp. 57-69.

Rhætic of South Wales. On some Fish-remains : S. H. REYNOLDS, Quart. J. Geol. Soc. lx, pp. 209 & 210.

Upper Devonian of the Condroz, Belgium. List of the Fish-remains : P. DESTINEZ, Mem. Soc. geol. Belgique xxxi, pp. 249 & 250.

France. P. H. FRITEL, Naturaliste xxvi, pp. 40-44, figg., gives a list of the fossil fishes known from the environs of Paris.

Eocene of the Paris Basin. On various Fish remains : F. PRIEM, Bull. Soc. geol. France (4) iv, pp. 42-47, figg.

Upper Jurassic of Calvados. On some Fish-remains : BIGOT & BRASIL, Mem. Soc. Normandie xxi, pp. 95-98, pl. iv.

Upper Miocene of the Hagüineau, Maine-et-Loire. List of the Fish-remains : O. COUFFON, Bull. Soc. Angers xxxiii, pp. 72-75.

Miocene and Pliocene of Herault, France. On the Fishes : F. PRIEM, Bull. Soc. geol. France (4) iv, pp. 285-294, figg.

Upper Jurassic of Solenhofen. On the fauna : J. WALTHER, Festschr. Haeckel, pp. 133-214.

Miocene and Pliocene of Italy. On otoliths : D. PANTANELLI, Pr.-verb. Soc. Toscana xiv, pp. 71 & 72.

Eocene of Monte Bolca. On the Fish-fauna : EASTMAN, Bull. Mus. Harvard xlvi, pp. 1-36, figg., 2 pls. Remarks by T. GILL, Science (2) xx, pp. 845 & 846.

Miocene of Felsöszertergály, Hungary. On Selachian teeth : A. KOCH, Foldtani Kozl. xxxiv, pp. 190-203, and 260-274, fig., 1 pl.

Pliocene of Szerem, Hungary. On the Fishes : A. KOCH, Ann. Mus. Hungar. ii, pp. 1-72, pls. i-vii.

Eocene of Roumania. On some Fish-remains : J. SIMIONESCU, Publ. Adamachi Ac. Romana, No. xii, 18 pp., 2 pls.

Oligocene of Roumania. On Fish-remains : J. SIMIONESCU, Verh. geol. Reichsanst. 1904, pp. 147-149.

Cretaceous of Djoua, Sahara. On Fish-remains : E. HAUG, C.R. Ac. Sci. cxxxviii, pp. 1529-1531.

Canada. On the fossil Fishes : L. M. LAMBE, Tr. R. Soc. Canada x, iv, pp. 13-56.

Miocene of Maryland. On the Fishes : C. R. EASTMAN, Maryland geol. Surv. 1904, pp. 71-93, pls. xxviii-xxxiii.

Upper Devonian of Colorado. On Fish-remains : C. R. EASTMAN, Amer. J. Sci. (4) xviii, pp. 253-260, figg.

Tertiary of Australia. On Fish-remains : F. CHAPMAN & G. B. PRITCHARD, P. Soc. Victoria (2) xvii, pp. 267-297, pls. xi & xii.

V. REFERENCES ARRANGED SYSTEMATICALLY.

TELEOSTOMI.

TELEOSTEI.

G. A. BOULENGER deals with the systematic part in the seventh volume of the Cambridge Natural History, pp. 539-727, figg. Synopsis of the Suborders and Families: idem, Ann. Nat. Hist. (7) xiii, pp. 161-190, translated into German in Arch. Naturg. 1904, i, pp. 197-228.

F. SUPINO brings out the three first fascicles of a work on the morphology of the Teleostean skull. These fascicles deal with the *Percidae*, *Serranidae*, *Berycidae*, and *Trichiuridae*.

F. SUPINO, Rend. Acc. Lincei xiii, ii, pp. 625-631, remarks on the skull of Teleosteans, in relation to the mode of life.

J. DEWITZ, Anat. Anz. xxiv, pp. 408-410, remarks on his share in the work of E. P. Allis on the skull of *Scomber scombrus*.

R. HAMBURGER, Rev. Suisse Zool. xii, pp. 71-148, pls. ii & iii, has studied the structure of the limbs of Teleosts (*Leuciscus*, *Trigla*, *Periophthalmus*, *Lophius*).

F. SUPINO, Rend. Acc. Lincei xiii, i, pp. 118-121, has a note on the bony tissue of *Orthogoriscus*.

E. G. MITCHELL, Amer. Natural. xxxviii, pp. 153-164, figg., and p. 405, writes on the oral breathing valves of Teleosts, their modifications and relation to the shape of the mouth.

R. WIEDERSHEIM, Zool. Jahrb., Suppl. vii, pp. 1-66, fig., pls. i-vi, writes on the presence of a larynx in Bony Ganoids, Crossopterygians, and Dipnoans.

J. W. SPENGLER, Zool. Jahrb., Suppl. vii, pp. 727-749, remarks on lungs and swim-bladders.

A. GOETTE, Zool. Jahrb. Anat. xxi, pp. 141-160, figg., writes on the origin of lungs.

A. JAEGER, Ber. Senckenberg. Ges. 1904, pp. 63*-72*, remarks on the swim-bladder.

FANNY MOSER, Arch. mikr. Anat. lxiii, pp. 532-574, pls. xxii-xxv, has studied the development of the swim-bladder.

D. DEINEKA, Zeitschr. wiss. Zool. lxxviii, pp. 149-164, figg., pls. viii & ix, deals with the structure and physiology of the swim-bladder.

A. JAEGER, Biol. Centrbl. xxiv, pp. 129-142, gives a summary of his researches on the physiology of the swim-bladder.

L. BYKOWSKI & J. NUSBAUM, Bull. Ac. Cracovie 1904, pp. 409-424, pl. xi, have investigated the swim-bladder of *Fierasfer*.

ANNE DRZEWINA, Kosmos polski. xxix, pp. 504-520, has a paper in Polish on the lymphoid tissue of the kidney in certain Ganoid and Teleostean Fishes.

J. RENNIE, Rep. Brit. Ass. 1903, p. 696, and Quart. J. Micr. Sci. xlviii, pp. 379-405, pls. xxvi-xxviii, writes on the epithelial islets of the pancreas in Teleosteans.

U. BÖHI, Morphol. Jahrb. xxxii, pp. 505-586, figg., pl. xiii, has studied the development of the body-cavity and of the genital gland in *Salmo salar* and *S. fario*.

C. H. EIGENMANN, Mark Anniv. Vol. pp. 167-204, pls. xii-xv, has further observations on the eye of *Amblyopsis*.

P. E. SARGENT, Mark Anniv. Vol. pp. 399-416, pl. xxix, writes on the torus longitudinalis of the Teleostean brain.

J. CAMERON, J. Anat. Physiol. norm. path. (2) xviii, pp. 279 & 280, remarks on the superior commissure of the brain in Teleosteans.

E. SUWOROFF, Trudui St. Petersburg. Obschch. xxxiii, 4, pp. 1-81, pl. —, writes on the regeneration of the fins in *Cyprinus auratus*.

GUIDO SCHNEIDER, KB. Ver. Riga xlvii, 1903, pp. 4-9, remarks on the primitive condition of the genital cells in Teleosteans.

H. LAMS, Arch. anat. micr. vi, pp. 633-652, pls. xxi & xxii, has investigated the genesis of the vitellus in ovarian ova of Teleosteans (*Osmerus* and *Alburnus*).

J. S. THOMSON, J. Mar. Biol. Ass. (2) vii, pp. 1-109, pls. i-viii, has a paper on the periodic growth of scales in Fishes.

E. EHRENBAUM, Wiss. Meeresuntersuch. vi, Helgoland, pp. 127-200, fig., pls iii-xvi, continues his descriptions of the breeding habits, eggs, and larval forms of the North Sea Fishes, and the same author, in collaboration with S. STRODTMANN, t. c. pp. 57-126, figg., contributes a first report on the eggs and postlarval forms of the Baltic Fishes.

A. SWAEN & A. BRACHET, Arch. Biol. xx, pp. 461-610, pls. xiii-xvi, have made observations on the early development of Teleostean Fishes.

On the reproduction of sea Fishes in New South Wales: DANNEVIG, Rep. Fisher. N. S. W. f. 1902, ii, pp. 21-25 (1903).

T. W. FULTON, Rep. Fish. Board Scotland xxii, iii, pp. 141-241, pls. vi-xii, has a further report on the rate of growth of Scottish Marine Fishes.

J. D. F. GILCHRIST, Mar. invest. S. Africa iii, pp. 131-152, pls. v-xi, continues his descriptions of the ova and young of S. African marine Fishes.

W. T. MOENKHAUS, Amer. J. Anat. iii, pp. 29-64, 4 pls., describes the development of hybrids between *Fundulus heteroclitus* and *Menidia notata*.

L. GUCCINI, Rend. Ist. Lombardo (2) xxxvii, pp. 194-201, remarks on the food of Tessin Fishes, as revealed by the contents of the stomach.

A. BRIOT, C.R. Soc. Biol. lvi, pp. 1113 & 1114, remarks on the nature of the poison of *Trachinus draco*.

H. B. BIGELOW, Amer. Natural. xxxviii, pp. 275-284, has made experiments on the sense of hearing in the Goldfish.

M. C. DEKHUYZEN, Bergens Mus. Aarbog 1904, No. 8, has made osmotic experiments on Norwegian Teleosteans.

IDA H. HYDE, Amer. J. Physiol. xii, pp. 249-252, has made experiments on the differences in electrical potential in the developing egg of *Fundulus*.

L. ROULE, Mem. Ac. Toulouse (10) iii, pp. 390-402 & iv, pp. 113-122, remarks on pisciculture and the acclimatization of exotic Fishes in France.

PLECTOGNATHI.

A. MEEK, Anat. Anz. xxv, pp. 217-219, figg., has notes on the auditory organ and the orbit of *Orthogoriscus mola*.

Orthogoriscus mola, L. On an exceptionally large specimen, MICHAÏLOVSKY, Annuaire Mus. St. Petersburg. viii, 1903, p. xli.

Diodon erinaceus, Ag. (foss.), noticed and figured by EASTMAN, Bull. Mus. Harvard xlvii, p. 34, fig.; *D. nudifrons*, sp. n., O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 488, fig., Honolulu.

Guentheridia, g. n. for *Tetrodon formosus*, Gthr., GILBERT & STARKS, Mem. Calif. Ac. iv, p. 158.

Tropidichthys oahuensis and *epilamprus*, spp. nn., O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 485, figg., Honolulu.

Liosacus intermedius, sp. n., MIRANDA RIBEIRA, A Lavoura, 1904, p. 33, Coast of Brazil.

- Ostracion oahuensis*, Jord. & Everm., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 487.
- Lactaria galeodon*, **sp. n.**, O. P. JENKINS, t. c. p. 487, fig., Hawaiian Islands; *L. schlemmeri*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxvii, p. 945, Laysan Island.
- Monacanthus tomentosus*, L. Young noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 203, pl. i, fig. 2; *M. albopunctatus*, **sp. n.**, SEALE, P. U. S. Mus. xxvii, p. 13, Honolulu [= *M. multimaculatus*, Regan.—REC.].
- Pseudomonacanthus analis*, **sp. n.**, WAITE, Rec. Austral. Mem. v, p. 173, fig., Lord Howe Is.
- Stephanolepis pricei*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 534, fig. 22, Hawaiian Ids.
- Balistes fuscolineatus*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, No. 4, p. 9, fig., Honolulu; *B. verres*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 153, pl. xxvi, Pacific Coast of C. America.

PEDICULATI.

- Melanocetus rotundatus*, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xv.
- Antennarius laysianus*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxvii, p. 947, Laysan Is.; *A. nexilis* and *duescus*, **spp. nn.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 537, pl. xiii, figg. 23 & 24, Hawaiian Ids.
- Histionotophorus*, **n. n.** for *Histiocephalus*, Zigno nec Diesing, EASTMAN, Bull. Mus. Harvard xlvii, p. 32; *H. bassani*, Zigno (foss.), redescribed and figured, id. ibid. p. 32, fig., pl. i, figg. 1-3. Referred to the *Antennariidae* by GILL, Science (2) xx, p. 845.

ACANTHOPTERYGII.

TRACHYPTERIDÆ.

- Trachypterus ishikawæ*, Jord. & Snyder (= *ijimæ*, Jord. & Snyder), redescribed and figured by JORDAN & SNYDER, Smithson. Collect. i, p. 240, pl. lxiii.
- Regalecus parkeri*, **sp. n.**, BENHAM, Tr. N. Zealand Inst. xxxvi, p. 198, pl. ix, New Zealand.

OPHIDIIDÆ.

- Lepophidium fluminense*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 44, Coast of Brazil.

ZOARCIDÆ.

- On the North European and Greenland *Lycodinae*: A. S. JENSEN, Danish Ingolf-Exped. iii, No. 4.
- Lycodes pallidus*, Coll., var. n. *squamiventer*, JENSEN, t. c. p. 39, pl. iv, fig. 2, off Iceland and the Faroes; *L. reticulatus*, Reinh., var. n. *microcephalus*, id. ibid. p. 66, pl. viii, fig. 1, N. E. Greenland.
- Lycenchelys kolthoffi*, **sp. n.**, JENSEN, t. c. p. 88, figg., pl. x, fig. 2, and Medd. Gronland xxix, p. 261, pl. xiii, fig. 1, N. E. Greenland.
- Selachophidium guentheri*, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xvii.
- Dinematichthys longifilis*, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 185, pl. xxiv, fig. 5.

- Lucifuga subterraneus*, Poey. Gravid specimen described and figured by EIGENMANN, Bull. U. S. Fish Comm. f. 1902, p. 236, pl. xxi.
Stygicola dentatus, Poey. Noticed and figured by EIGENMANN, t. c. p. 236, pl. xxi.

BATRACHIDÆ.

- Batrachoides boulengeri*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 182, pl. xxxi, Pacific Coast of C. America.
Porichthys greenei, **sp. n.**, GILBERT & STARKS, t. c. p. 184, pl. xxx, Panama.

BLENNIIDÆ.

- Blennius pholis*, L. Note on the egg, McINTOSH, Rep. Brit. Ass. 1903, p. 697.
Hypsoblennius piersoni, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 191, pl. xxxii, fig. 60, Panama.
Homesthes caulopus, Gilb., figured by GILBERT & STARKS, t. c. pl. xxxii, fig. 61.
Ericteis, **g. n.**, near *Lepisoma*, for *E. kalisheræ*, **sp. n.**, JORDAN, Bull. U. S. Fish Comm. xxii, p. 543, pl. ii, fig. 4, Tortugas Archipelago.
Collybus, **g. n.**, near *Taractes*, for *C. drachme*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 525, pl. ix, fig. 16, Hawaiian Ids.
Aspidonotus brunneolus, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 510, fig., Honolulu.
Auchenopterus mexicanus, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 269, pl. xxix, La Paz, Lower California.
Tripterygium minor, Kolomb. Note by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 9. *T. rufopileum*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 182, pl. xxiv, fig. 4, Lord Howe Is.; *T. atriceps*, **sp. n.**, O. P. JENKINS, t. c. p. 505, fig., Honolulu.
Petrosirtes icelii, Ogilby, figured by WAITE, t. c. pl. xxiv, fig. 3; *P. vinci-guerræ*, **sp. n.**, CLEMENTINA BORSIERI, Ann. Mus. Genova (3) i, p. 211, Coast of Erythræa.
Salarias nigripes, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 127, Guam Is.; *S. cypho*, p. 506, fig., *saltans*, p. 508, fig., and *rutilus*, p. 509, fig., **spp. nn.**, O. P. JENKINS, t. c. Honolulu; *S. furcatus*, **sp. n.**, JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 213, pl. i, fig. 4, Gulf of Manaar.
Emblemaria oculocirrus, Jord., redescribed by RUTTER, P. Calif. Ac. Zool. (3) iii, p. 252.
Lumpenus lampetiformis, Walb. On a specimen from the N. E. Coast of England, A. MEEK, Tr. Northumb. Soc. (2) i, p. 36.

CERDALIDÆ.

- Cerdale ionthas*, J. & G., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxxi, fig. 58.
Microdesmus retropinnis, J. & G., figured by GILBERT & STARKS, t. c. pl. xxxi, fig. 59.

GOBIESOCIDÆ.

- Lepadogaster bimaculatus*, Penn., and *microcephalus*, Brook, described and figured by GUITEL, Arch. Zool. exp. (4) ii, p. 357, figg., pl. xv.
Diplocrepis costatus, Ogilby, figured by WAITE, Rec. Austral. Mus. v, pl. xxiv, fig. 1.
Lepadichthys, **g. n.**, allied to *Gobiesox*, for *L. frenatus*, **sp. n.**, WAITE, t. c. p. 180, pl. xxiv, fig. 2, Lord Howe Is.

TRICHONOTIDÆ.

- Trichonotus setigerus*, Bl. Schn., noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 215, pl. i, fig. 7.
Limnichthys, **g. n.**, for *L. fasciatus*, **sp. n.**, WAITE, Rec. Austral. Mus. v, pp. 178 & 243, pl. xxiii, fig. 4, Lord Howe Is. and New South Wales.
Schizochirus, **g. n.**, allied to *Limnichthys*, WAITE, t. c. p. 241; *S. insolens*, **sp. n.**, id. ibid. p. 242, figg., pl. xxvi, fig. 3, New South Wales.

URANOSCOPIDÆ.

- Gnathagnus innotabilis*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 238, pl. xxvi, fig. 1, New South Wales.

NOTOTHENIIDÆ.

- Synopsis of the genera by DOLLO, Rés. Voy. Belgica, Poiss. p. 17.
Cryodraco antarcticus, Dollo, described and figured by DOLLO, t. c. p. 20, pl. 1 & pl. v, fig. 7.
Gerlachea australis, Dollo, described and figured by DOLLO, t. c. p. 25, pl. ii, fig. 1 & pl. v, fig. 2.
Racovitzia glacialis, Dollo, described and figured by DOLLO, t. c. p. 29, pl. ii, figg. 2 & 3, pl. v, fig. 3.
Hypsicometes heterurus, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 43, Coast of Brazil.
Bovichthys roseo-pictus, **sp. n.**, HUTTON, Tr. N. Zealand Inst. xxxvi, p. —, New Zealand.
Draconetta, Jord. & Fowl. On its affinities: REGAN, Ann. Nat. Hist. (7) xiv, p. 130.—*D. acanthopoma*, **sp. n.**, id. ibid., North Atlantic.

LEPTOSCOPIDÆ.

- Neopereis binivirgata*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 236, pl. xxv, fig. 3, New South Wales.

PERCOPHIIDÆ.

- Embolichthys*, Jord. On its relationship to *Hemerocoetes* and *Ammodytes*. GILL, P. U. S. Mus. xxviii, p. 160.

TRIGLIDÆ.

- Trigla picta*, Gthr. (*guttata*, Philippi, 1896). Note by DELFIN, Revist. chilena viii, p. 12, fig.; *T. queketti*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiv, p. 128, Natal.
Lepidotrigla guentheri, Hilg., and *microptera*, Gthr., redescribed by JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, pp. 594 & 595; *L. abyssalis*, **sp. n.**, id. ibid. p. 595, fig., Japan.
Prionotus ruscarius, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 165, pl. xxvii, Pacific Coast of C. America.
Peristedion amiscus, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 593, pl. iii, figg. 1 & 2, Japan; *P. roseum*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 37, Coast of Brazil.

AGONIDÆ.

- Review of the Japanese species by JORDAN & STARKS, P. U. S. Mus. xxvii, pp. 575–599, figg.
Percis cephalopunctatus, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 124, Guam Is.

- Agonomalus jordani*, **sp. n.** (SCHMIDT), JORDAN & STARKS, t. c. p. 581, fig., Japan.
Occa iburia, **sp. n.**, JORDAN & STARKS, t. c. p. 585, fig., Japan.
Podotheucus tokubire, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 15, Japan.
Xeneretmus infraspinatus, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 262, pl. xxvii, off Cape Flattery, Washington Territory.

CYCLOPTERIDÆ.

- Trimegistus*, **g. n.**, near *Liparis*, for *T. owstoni*, **sp. n.**, JORDAN & SNYDER, Smithson. Collect. i, p. 238, pl. lviii, Japan. Referred to *Liparis* and figured by P. SCHMIDT, P. U. S. Mus. xxviii, p. 189, figg., and Annuaire Mus. St. Petersb. ix, p. xvii.

COTTIDÆ.

Review of the *Cottidæ* of Japan by JORDAN & STARKS, P. U. S. Mus. xxvii, pp. 231-335, figg.

- Stlengis*, **g. n.**, for *S. osensis*, **sp. n.**, JORDAN & STARKS, t. c. p. 236, fig., Japan.
Schmidtia, **g. n.** [changed to *Schmidtina*, p. 961], for *S. misakia*, **sp. n.** JORDAN & STARKS, t. c. p. 237, fig., Japan.

- Daruma*, **g. n.**, for *D. sugamia*, **sp. n.**, JORDAN & STARKS, t. c. p. 241, fig., Japan.

- Ricuzenius*, **g. n.**, JORDAN & STARKS, t. c. p. 242; *R. pinetorum*, **sp. n.**, iid. ibid. p. 243, fig., Japan.

- Hemilepidotus gilberti*, **sp. n.**, JORDAN & STARKS, t. c. p. 254, fig., Japan.

- Ceratocottus namiyei*, **sp. n.**, JORDAN & STARKS, t. c. p. 259, fig., Japan.

- Cottus quadricornis*, L. On its freshwater varieties: LÖNNBERG, Bull. Geol. Inst. Upsala vi, p. 85, figg.—*C. kasika*, **sp. n.**, JORDAN & STARKS, t. c. p. 265, fig., Japan.

- Arteidiellus uncinatus*, Reinh., figured by JENSEN, Medd. Gronland xxix, pl. xii, fig. 2.

- Rheopresbe*, **g. n.**, JORDAN & STARKS, t. c. p. 269; *R. fujiiyamæ*, **sp. n.**, iid. ibid. p. 270, fig., Japan.

- Myoxocephalus edomius* and *raninus*, **spp. nn.**, JORDAN & STARKS, t. c. pp. 274 & 277, figg., Japan.

- Ainocottus*, **g. n.**, for *A. ensiger*, **sp. n.**, JORDAN & STARKS, t. c. p. 283, fig., Japan.

- Caracanthus maculatus*, Gray, redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 491.

- Gymnocanthus herzensteini*, **sp. n.**, JORDAN & STARKS, t. c. p. 294, fig., Japan.

- Crossias*, **g. n.**, for *C. allisi*, **sp. n.**, JORDAN & STARKS, t. c. p. 296, fig., Japan.

- Cottiusculus*, **g. n.** (SCHMIDT), JORDAN & STARKS, t. c. p. 298; *C. gonez* and *schmidtii*, **spp. nn.**, iid. ibid. pp. 298 & 299, figg., Japan.

- Alcichthys*, **g. n.**, for *Centridermichthys alcicornis*, Herz., JORDAN & STARKS, t. c. p. 301.

- Furcina*, **g. n.**, JORDAN & STARKS, t. c. p. 303; *F. ishikawæ* and *osimæ*, **spp. nn.**, iid. ibid. pp. 303 & 305, figg., Japan.

- Ocynectes*, **g. n.**, JORDAN & STARKS, t. c. p. 306; *O. maschalis*, **sp. n.**, iid. ibid. p. 307, fig., Japan.

- Pseudoblennius zonostigma* and *totomius*, **spp. nn.**, JORDAN & STARKS, t. c. pp. 312 & 315, figg., Japan.

- Bero*, **g. n.**, for *Centridermichthys elegans*, Stdr., JORDAN & STARKS, t. c. p. 317.

- Vellitor*, **n. n.**, for *Podabrus*, Rich. nec Fisch., JORDAN & STARKS, t. c. p. 318.

- Blepsius draciscus*, **sp. n.**, JORDAN & STARKS, t. c. p. 322, fig., Japan.
Thecopterus, **g. n.**, near *Dasycottus* and *Malacocottus*, for *T. aleuticus*,
sp. n., H. M. SMITH, P. Soc. Washington xvii, p. 163, fig., Behring
 Sea.
Hemitrepterus nipponicus, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 14,
 pl. vii, fig. 2, Japan.
Cottunculus macrocephalus, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii,
 p. 7, Cape of Good Hope, 190 fath.

COMEPHORIDÆ.

- A. KOROTNEFF, Biol. Centrbl. xxiv, pp. 641-644, figg., has remarks on the
 gills and teeth of *Comephorus baicalensis*, Dyb.
Comephorus baicalensis, Dyb. Note on the habits, KOROTNEFF, Arch.
 Zool. exp. (4) ii, p. 15, fig.; *C. dybowskii*, **sp. n.**, id. ibid. p. 17, figg.
 L. Baikal.

SCORPÆNIDÆ.

- Review of the Japanese species by JORDAN & STARKS, P. U. S. Mus. xxvii,
 pp. 91-175, figg., pls. i & ii.
Sebastes maderensis, Lowe, redescribed by KOLOMBATOVIĆ, Glasnik Naravosl.
 druzt. xv, p. 5.
Sebastes itinus, p. 99, fig., *guentheri*, p. 102, fig., *tokionis*, p. 104, fig.,
iracundus, p. 107, fig., and *flammeus*, p. 108, **spp. nn.**, JORDAN &
 STARKS, t. c. Japan.
Neosebastes entaxis, **sp. n.**, JORDAN & STARKS, t. c. p. 120, fig., Japan.
Thysanichthys, **g. n.**, near *Sebastodes*, JORDAN & STARKS, t. c. p. 122;
T. crossotus, **sp. n.**, id. ibid. p. 123, fig., Japan.
Sebastiscus, **g. n.**, for *Sebastes marmoratus*, C. & V., JORDAN & STARKS,
 t. c. p. 124.
Sebastes kelloggi, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii,
 p. 492, fig., Honolulu.
Sebastapistes corallicola, p. 493, fig., *coniorta*, p. 495, fig., and *galactacma*,
 p. 496, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu.
Helicolenus emblemarius, **sp. n.**, JORDAN & STARKS, t. c. p. 129, fig.,
 Japan.
Scorpena, Art., A. BRIOT, C.R. Soc. Biol. lvii, pp. 666, has ascertained by
 experiments that the stings of the Mediterranean species are not
 poisonous; *S. izensis*, **sp. n.**, JORDAN & STARKS, t. c. p. 134, fig.,
 Japan.
Pontinus corallinus, **sp. n.**, MIRANDA RIBEIRA, A Lavoura 1904, p. 35,
 Coast of Brazil.
Scorpenopsis cocopsis, Jenkins, redescribed and figured by SEALE, Pap.
 B. P. Bishop Mus. i, No. 4, p. 11, fig.
Lythrichthys, **g. n.**, near *Setarches*, for *L. eulabes*, **sp. n.**, JORDAN & STARKS,
 t. c. p. 140, fig., Japan.
Pterois nigripinnis, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 2,
 Natal.
Ebosia, **g. n.**, for *Pterois bleekeri*, Stdr. & Döderl., JORDAN & STARKS, t. c.
 p. 145.
Dendrochirus chloreus, **sp. n.**, O. P. JENKINS, t. c. p. 498, fig., Honolulu.
Apistus evolans and *venenans*, **spp. nn.**, JORDAN & STARKS, t. c. pp. 146 &
 148, figg., Japan.
Minous echigoniis, **sp. n.**, JORDAN & STARKS, t. c. p. 153, fig., Japan.
Decterias, **g. n.**, for *Minous pusillus*, Schleg., JORDAN & STARKS, t. c.
 p. 154.

- Tetraroge kagoshimensis*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 13, pl. viii, fig. 1, Japan.
- Aploactis aspersa*, Temm. & Schleg., noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 219, pl. i, fig. 5.
- Synancia thersites*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 121, Guam Id.
- Erosa*, **g. n.**, for *Synancia erosa*, Langsd., JORDAN & STARKS, t. c. p. 156.
- Inimicus*, **g. n.**, for *Pelor japonicus*, C. & V., JORDAN & STARKS, t. c. p. 158.
- Ocosia*, **g. n.**, near *Agriopus*, for *O. vespa*, **sp. n.**, JORDAN & STARKS, t. c. p. 162, fig., Japan.
- Erispex*, **g. n.**, for *Cocotropus pottii*, **sp. n.**, JORDAN & STARKS, t. c. p. 170.

GOBIIDÆ.

- E. R. WAITE, Rec. Austral. Mus. v, pp. 277-286, pls. xxxiv-xxxvi, reviews the *Eleotris* and their allies of New South Wales.
- Gobius æolosoma*, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 176, pl. xxiii, fig. 2; *G. parvus*, Meek, and *claytoni*, Meek, figured by S. E. MEEK, Field Mus. Zool. v, pl. xvii; *G. steindachneri*, Kolomb. = *G. kneri*, Sldr., redescribed by CLEMENTINA BORSIERI, Ann. Mus. Genova (3) i, p. 7; *G. deltoides*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 125, Guam Id.; *G. elongatus*, **sp. n.** (foss.), SIMIONESCU, Verh. geol. Reichsanst. 1904, p. 149, and Publ. Adamachi Ac. Romana, No. xii, p. 15, pl. ii, fig. 2, Eocene of Roumania.
- Microgobius miraflorensis*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 176, pl. xxix, fig. 54, Panama.
- Evermannia panamensis*, **sp. n.**, GILBERT & STARKS, t. c. p. 179, pl. xxx, fig. 55, Panama.
- Chlamydes*, **g. n.**, near *Gobius*, for *C. laticeps*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 503, fig., Honolulu.
- Gobionellus lonchotus*, **sp. n.**, O. P. JENKINS, t. c. p. 503, fig., Honolulu; *G. microdon*, Glb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxviii, fig. 51.
- Garmannia paradoxa*, Gthr., figured by GILBERT & STARKS, t. c. pl. xxvii, fig. 52.
- Enypnius seminudus*, Gthr., figured by GILBERT & STARKS, t. c. pl. xxix, fig. 53; *E. oligolepis*, **sp. n.**, O. P. JENKINS, t. c. p. 504, fig., Honolulu.
- Ctenogobius tortugæ*, **sp. n.**, JORDAN, Bull. U. S. Fish Comm. xxii, p. 541, pl. i, fig. 1, Tortugas Archipelago.
- Gnatholepis thompsoni*, **sp. n.**, JORDAN, t. c. p. 541, pl. i, fig. 2, Tortugas Archipelago.
- Clevelandia ios*, J. & G. Note by GILBERT, P. Calif. Ac. Zool. (3) iii, p. 263.
- Elacatinus*, **g. n.**, allied to *Gobiosoma*, for *E. oceanops*, **sp. n.**, JORDAN, t. c. p. 542, pl. ii, fig. 3, Tortugas Archipelago.
- Allogobius*, **g. n.**, intermediate between *Gobius* and *Oxymetopon*, WAITE, Rec. Austral. Mus. v, p. 176; *A. viridis*, **sp. n.**, id. ibid. p. 177, pl. xxiii, fig. 3, Lord Howe Id.
- Eviota*, **g. n.**, near *Oxymetopon*, Blkr., for *E. epiphanes*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 501, fig., Honolulu.
- Leucopsarion petersii*, Hilg., figured, with notes on the habits and eggs, by KITAHARA, Annot. zool. Japon. v, p. 113, pl. v.
- Eleotris sandwichensis*, Vaill. & Sauv., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 499; *E. miniatus*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 125, Guam Id.

- Pycnomma*, **g. n.**, near *Gymneleotris*, for *P. semisquamatus*, **sp. n.**, RUTTER, P. Calif. Ac. Zool. (3) iii, p. 252, pl. xxiv, Gulf of California.
- Carassiops compressus*, Krefft, and *galii*, Ogilby, figured by WAITE, Rec. Austral. Mus. v, pl. xxxiv, figg. 1 & 2.
- Krefftius adspersus*, Cast., *australis*, Krefft, and *coxii*, Krefft, figured by WAITE, t. c. pl. xxxv, figg. 1 & 2, & xxxvi, fig. 1.
- Philypnodon grandiceps*, Krefft, figured by WAITE, t. c. pl. xxxvi, fig. 2.
- Asterropteryx semipunctatus*, Rüpp., redescribed by O. P. JENKINS, t. c. p. 500.

PLEURONECTIDÆ.

- Hippoglossus vulgaris*, Flem., and *hippoglossoides*, Walb. On pelagic post-larval stages: J. SCHMIDT, Meddel. Komm. Havunders., Fisk. i, No. 3, 1 pl.
- Atheresthes evermanni*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 621, pl. vi, fig. 1, Japan.
- Cleisthenes*, **g. n.**, near *Hippoglossoides*, for *C. pinetorum*, **sp. n.**, JORDAN & STARKS, t. c. p. 622, fig., Japan.
- Alæops*, **g. n.**, near *Poecilopsetta*, for *A. plinthus*, **sp. n.**, JORDAN & STARKS, t. c. p. 623, pl. v, fig. 2, Japan.
- Paralichthys olivaceus*, Temm. & Schleg., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2; *P. triocellatus*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura 1904, p. 49, Coast of Brazil.
- Platophrys dimorphus*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 10, Natal.
- Pseudorhombus natalensis* and *andersoni*, **spp. nn.**, GILCHRIST, t. c. pp. 8 & 9, Natal.
- Arnoglossus macrolepis*, **sp. n.**, GILCHRIST, t. c. p. 12, Natal.
- Psettylis pellucida*, Alc., and *ocellata*, Alc. Discussed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 207, pl. i, fig. 3, & pl. ii.
- Dexistes*, **g. n.**, near *Pseudopleuronectes*, for *D. rikuzenius*, **sp. n.**, JORDAN & STARKS, t. c. p. 624, pl. vi, fig. 1, Japan.
- Pleuronectes*, L. On the larval and post-larval stages of the Danish species: PETERSEN, Meddel. Komm. Havunders., Fisk. i, No. 1, pl. ii. *P. platessa*, L. On its habits: JOHANSEN, t. c. No. 2. On its introduction in Australia: DANNEVIG, Rep. Fisher. N. S. W. f. 1902, ii (1903), p. 5. On a malformed specimen: J. JOHNSTONE, P. Liverp. biol. Soc. xviii, p. 111, pl. i. On its fecundity: R. D. LAURIE, t. c. p. 153. On the migration and growth: A. MEEK, Rep. Sci. Observ. Northumb. Fisher. Comm. 1904, p. 70. On the spawning season: HERDMAN, Nature lxi, pp. 465 & 488, and FULTON, t. c. p. 535. *P. cynoglossus*, L. On the post-larval and early young stages: H. C. WILLIAMSON, Rep. Fish. Board Scotland xxii, iii, p. 270, pl. xvi.
- Drepanopsetta platessoides*, Fabr. On the larval and post-larval stages: PETERSEN, Meddel. Komm. Havunders., Fisk. i, No. 1, pl. i.
- Araias*, **g. n.**, near *Pleuronectes*, for *A. ariommus*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 624, pl. vi, fig. 2, Japan.
- Verecqua*, **g. n.**, near *Microstomus* and *Limanda*, for *V. achne*, **sp. n.**, JORDAN & STARKS, t. c. p. 625, pl. vii, fig. 1, Japan.
- Microstomus kitahare*, **sp. n.**, JORDAN & STARKS, t. c. p. 625, pl. vii, fig. 2, Japan.
- Engyrosopon ijimæ*, **sp. n.**, JORDAN & STARKS, t. c. p. 626, pl. viii, fig. 1, Japan.
- Ancylosetta dendritica*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. lxii.
- Solea turbynei* and *fulvomarginata*, **spp. nn.**, GILCHRIST, Mar. invest. S. Africa iii, pp. 10 & 13, Cape of Good Hope.

- Gymnachirus zebrinus*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura 1904, p. 50, Coast of Brazil.
Synaptura melanoptera and *ciliata*, **spp. nn.**, GILCHRIST, t. c. pp. 13 & 14, Natal.
Aphoristia variegata, Gilchrist, figured by GILCHRIST, op. cit. ii, pl. xviii.
Cynoglossus, Han. Buch. On the Naso-pharyngeal communications, JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 209, fig.; *C. attenuatus* and *brachycephalus*, **spp. nn.**, GILCHRIST, t. c. pp. 11 & 12, Natal.

ZEIDÆ.

- Cyttosoma*, **g. n.**, for *C. boops*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 6, Cape of Good Hope, 120 faths.
Proantigonia longirostris, Kramb., and *caprossoides*, Cosm. (foss.), described and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, pp. 12 & 13, pl. ii, figg. 3-5.

LUVARIDÆ.

- Luvarus imperialis*, Raf. Recorded from Guernsey by A. COLLENETTE, Rep. Guernsey Soc. 1903, p. 235.

TRICHIURIDÆ.

- Xenogramma*, **g. n.**, near *Gempylus*, for *X. carinatum*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 157, pl. xix, fig. 1, Lord Howe Id.

SCOMBRIDÆ.

- Scomber colias*, Gm., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2.
Chenogaster, **g. n.**, near *Gastrochisma* and *Lepidothynnus*, for *C. holmbergi*, **sp. n.**, LAHILLE, An. Mus. Buenos Aires (3) ii, 1903, p. 375, Montevideo.
Sphyrænodus pictus, Ag. (foss.). On a fragment from the Middle Eocene of Hungary : A. KOCH, Foldtani Kozl. xxxiv, pp. 332 & 365.

CARANGIDÆ.

- Trachurus japonicus*, Temm. & Schleg., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2.
Carangus hippoides, p. 443, fig., *rhabdotus*, p. 444, fig., and *politus*, p. 445, fig., **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, Honolulu ; *C. cheilio*, **sp. n.**, SNYDER, t. c. p. 524, pl. viii, fig. 14, Honolulu.
Carangoides ajax, **sp. n.**, SNYDER, t. c. p. 524, pl. viii, fig. 15, Honolulu.
Caranx primevus, **sp. n.** (foss.), EASTMAN, Bull. Mus. Harvard xlv, p. 28, fig., pl. i, fig. 4, Eocene of Monte Bolca ; *C. petrodavæ*, **sp. n.** (foss.), SIMIONESCU, Verh. geol. Reichsanst. 1904, p. 148, and Publ. Adamachi Ac. Romana, No. xii, p. 8, pl. ii, fig. 6, Eocene of Roumania.
Hemicaranx zelotes, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xii, fig. 22.
Liognathus obscura, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 74 Guam Id.
Oligoplites altus, Gthr., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xi, fig. 20 ; *O. refulgens*, **sp. n.**, iid. ibid. p. 73, pl. xi, fig. 19, Panama.

- Decapterus muroatsi*, Temm. & Schleg., described and figured by OTAKI, FUJITA & HIGURASHI, Fishes of Japan i, pt. 2; *D. canonoides*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 442, pl. iv, Honolulu.
Seriola sparna, **sp. n.**, O. P. JENKINS, t. c. p. 442, fig., Honolulu.
Peprilus snyderi, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 87, pl. xii, fig. 23, Panama.

SCARIDÆ.

- Scarus cretensis*, C. & V., redescribed by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 3; *S. cypho*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 95, Guam Id.
Pseudoscarus platodoni, **sp. n.**, SEALE, t. c. p. 96, Guam Id.
Scaridae, **g. n.**, near *Scarichthys*, Blkr., O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 468; *S. zonarcha*, p. 468, fig., and *balia*, p. 469, fig., **spp. nn.**, id. ibid., Honolulu.

LABRIDÆ.

- Crenilabrus steinegeri*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 13, pl. vi, fig. 2, Japan.
Cirrhitlabrus lyukyuensis, **sp. n.**, ISHIKAWA, t. c. p. 12, pl. vi, fig. 1, Japan; *C. jordani*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 529, pl. x, fig. 18, Hawaiian Ids.
Chilinus nigropinnatus, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 86, Guam Id.
Halichoeres nigropunctatus, **sp. n.**, SEALE, t. c. p. 89, Guam Id.; *H. macgregori*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 145, pl. xxiii, fig. 45, Panama.
Symphodus szajnochæ, Zigno (foss.), described and figured by EASTMAN, Bull. Mus. Harvard xlv, p. 29, pl. i, fig. 5.
Thalassoma berendti, **sp. n.**, SEALE, t. c. No. 4, p. 15, fig., Honolulu.
Calotomus cyclurus, p. 465, fig., and *snyderi*, p. 467, fig., **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, Honolulu.
Hemipteronotus jenkinsi, **sp. n.**, SNYDER, t. c. p. 530, pl. x, fig. 19, Hawaiian Ids.
Novaculichthys tattoo, **sp. n.**, SEALE, t. c. No. 4, p. 5, fig., Honolulu.
Julis turcica, Risso, redescribed by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 2; *J. duperreyi*, Q. & G., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 463; *J. musume*, **sp. n.**, JORDAN & SNYDER, Smithson. Collect. i, p. 236, pl. lxi, Japan; *J. punctatus*, **sp. n.**, SEALE, t. c. p. 91, Guam Id.
Pseudojulis cerasina, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 528, Honolulu.
Stethojulis fulvoventris, **sp. n.**, SEALE, t. c. p. 92, Guam Id.
Gomphosus pacificus, **sp. n.**, SEALE, t. c. p. 94, Guam Id.

POMACENTRIDÆ.

- Chromis atrilobatus*, Gill, figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxi, fig. 43; *C. elaphrus*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 457, fig., Honolulu.
Amphiprion snyderi, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 11, pl. v, Japan.

- Pomacentrus gilli*, **sp. n.**, GILBERT & STARKS, t. c. p. 141, pl. xxii, fig. 44, Panama.
Glyphidodon polyacanthus, Ogilby, figured by WAITE, Rec. Austral. Mus. v, pl. xxiii, fig. 1.
Parma polylepis, Gthr., noticed and figured by WAITE, t. c. p. 169, pl. xxii.

CICHLIDÆ.

Monographed by PELLEGRIN, Mem. Soc. zool. France xvi, pp. 41-402, figg., pls. iv-vii.

- Heros tetracanthus*, C. & V., figured by EIGENMANN, Bull. U. S. Fish Comm. f. 1902, p. 231, figg.; *H. tetracanthus terralbasi*, *griseus*, and *cinctus*, subsp. nn., id. ibid. pp. 230-234, figg., Cuba; *H. nigricans*, **sp. n.**, id. ibid. p. 235, fig., Cuba; *H. (Cichlosoma) octofasciatus*, Reg., redescribed by REGAN, Ann. Nat. Hist. (7) xiii, p. 258; *H. callolepis*, **sp. n.**, id. ibid. p. 258, S. Domingo de Guzman, Mexico.
Cichlasoma hendricki, p. 208, fig., *evermanni*, p. 214, fig., and *majarra*, p. 217, fig., **spp. nn.**, S. E. MEEK, Field Mus. Zool. v, Mexico; *C. eigenmanni*, Meek, figured by S. E. MEEK, t. c. pl. xvi; *C. spinosissimum*, Vaill. & Pellegr., var. n., *immaculata*, PELLEGRIN, Mem. Soc. zool. France xvi, p. 225, Guatemala; *C. guentheri*, n. n. for *Heros oblongus*, Gthr., nec Casteln., id. ibid. p. 215.
Thorichthys, **g. n.**, near *Cichlasoma*, S. E. MEEK, t. c. p. 222; *T. ellioti*, **sp. n.**, id. ibid. p. 223, fig., Mexico.
Astatheros, **subg. n.**, for *Heros heterodontus*, Vaill. & Pellegr., PELLEGRIN, t. c. p. 203.
Heterotilapia, **g. n.**, for *Heros multispinosus*, Gthr., PELLEGRIN, t. c. p. 247.
Acara geayi, Pellegr., figured by PELLEGRIN, t. c. pl. iv, fig. 3.
Astronotus ocellatus, Ag., var. n. *zebra*, PELLEGRIN, t. c. p. 147, Santarem, Brazil.
Geophagus camopiensis, Pellegr., figured by PELLEGRIN, t. c. pl. iv, fig. 1.
Lamprologus mocquardi, Pellegr., figured by PELLEGRIN, t. c. p. 291, fig.
Lepidiolamprologus, **g. n.**, for *Lamprologus elongatus*, Blgr., PELLEGRIN, t. c. p. 295.
Symphysodon discus, Heck., var. n. *æquifasciata*, PELLEGRIN, t. c. p. 250, Brazil.
Pterophyllum altum, Pellegr., figured by PELLEGRIN, t. c. pl. iv, fig. 4.
Pelmatochromis nigrofasciatus, Pellegr., figured by PELLEGRIN, t. c. pl. vi, fig. 2.
Paratilapia dorsalis, Pellegr., figured by PELLEGRIN, t. c. pl. v, fig. 4; *P. prognathus* and *victoriana*, **spp. nn.**, id. Bull. Soc. zool. France xxix, p. 185, L. Victoria.
Nanochromis, **n. n.** for *Pseudoplesiops*, Blgr. nec Blkr., PELLEGRIN, Mem. Soc. zool. France xvi, p. 273; *N. dimidiatus*, Pellegr., figured, id. ibid. pl. iv, fig. 2.
Tilapia boulengeri, Pellegr., pl. v, fig. 3, *crassa*, Pellegr., p. 325, fig., *bilineata*, Pellegr., pl. v, fig. 1, and *giardi*, Pellegr., pl. v, fig. 2, figured by PELLEGRIN, t. c.; *T. guarti*, **sp. n.**, PELLEGRIN, Bull. Soc. zool. France xxix, p. 186, L. Victoria; *T. kottæ* and *dubia*, **spp. nn.**, LÖNNBERG, Ann. Nat. Hist. (7) xiii, pp. 135 & 137, Lake Barombikakotta, Cameroon Mountain.
Ophthalmotilapia, **g. n.**, for *Tilapia boops*, Blgr., and allies, PELLEGRIN, Mem. Soc. zool. France xvi, p. 345.
Boulengerochromis, **g. n.**, for *Tilapia microlepis*, Blgr., PELLEGRIN, t. c. p. 304.

- Astatotilapia*, **g. n.**, for *Tilapia desfontainesi*, Lacep., and allies, PELLEGRIN, t. c. p. 299.
- Astatoreochromis*, **g. n.**, between *Astatotilapia* and *Oreochromis*, PELLEGRIN, t. c. p. 384; *A. alluaudi*, **sp. n.**, id. *ibid.* p. 385, L. Victoria.
- Crenicichla geayi*, pl. vi, fig. 4, *vaillanti*, Pellegr., p. 376, and *multispinosa*, pl. vi, fig. 3, figured by PELLEGRIN, t. c.; *C. saxatilis*, var. n., *albo-punctata*, id. *ibid.* p. 374, Guianas; *C. brasiliensis*, Bl., varr. nn., *fasciata* and *marmorata*, id. *ibid.* p. 383, figg., Brazil.

OSPHROMENIDÆ.

- Osphromenus malayanus*, **sp. n.**, DUNCKER, Mt. Ges. Hamburg xxi, p. 163, pl. i, fig. 8, Kuala Lumpur, Malay Peninsula.
- Bettu pugnax*, Cantor, figured, with notes on the breeding habits, by WAITE, Rec. Austral. Mus. v, p. 293, pl. xxxviii.

TEUTHIDIDÆ.

- Note on the limb girdles of *Teuthis oramin* by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 217, fig.

ACANTHURIDÆ.

- Acanthurus incipiens*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 480, fig., Honolulu.
- Teuthis leucopareius*, p. 476, fig., and *guentheri*, p. 477, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu.
- Prionurus*, Lacep. Remarks on the validity of this name: GILL, P. U. S. Mus. xxviii, p. 121.
- Xesurus hopkinsi*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 155, pl. xxv, Panama.
- Callicanthus metoposophron*, **sp. n.**, O. P. JENKINS, t. c. p. 481, fig., Honolulu.
- Zabراسoma agana*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 110, Guam Id.
- Monoceros garretti*, **sp. n.**, SEALE, t. c. p. 112, Guam Id.
- Pygæus*, Ag. (foss.) is regarded by Jordan as a generalized type allied to the *Acronuridæ*, for which he proposes a new family *Pygæidæ*, EASTMAN, Science (2) xx, p. 245; *P. agassizii*, **sp. n.** (foss.), EASTMAN, Bull. Mus. Harvard xlv, p. 31, pl. ii, Eocene of Monte Bolca.

CHÆTODONTIDÆ.

- Scatophagus argus*, Gm. Young noticed and figured by JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 220, pl. i, fig. 1.
- Chaetodon nigrirostris*, Gill, figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xxiv; *C. dixonii*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 276, fig., New Hebrides; *C. corallicola*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 531, pl. xi, fig. 20, Hawaiian Id.
- Holacanthus fisheri*, **sp. n.**, SNYDER, t. c. p. 532, pl. xi, fig. 21, Hawaiian Ids.; *H. marianas* and *bishopi*, **spp. nn.**, SEALE, Pap. B. P. Bishop Mus. i, pp. 104 & 106, Guam Id.
- Platax vesperilio*, L., mimicking a dead leaf: WILLEY, Spolia Zeylan. ii, p. 51, fig.

MULLIDÆ.

- Upeneus saffordi*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 72, Guam Id.
Pseudupeneus porphyreus, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm.
 xxii, p. 454, fig., Honolulu.

SPARIDÆ.

- Heterognathodon dæderleini*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 10,
 pl. iv, Japan.

PRISTIPOMATIDÆ.

- Pomadasys starri*, p. 200, pl. xiii, and *templei*, p. 201, pl. xiv, **spp. nn.**,
 S. E. MEEK, Field Mus. Zool. v, Mexico.
Erythrichthys leucogrammicus, Blkr. Young described and figured by
 JOHNSTONE, Suppl. Rep. Ceylon Pearl Fisheries, No. xv, p. 221, pl. i,
 fig. 6.

HAPLODACTYLIDÆ.

- Haplodactylus etheridgii*, Ogilby, figured by WAITE, Rec. Austral. Mus. v,
 pl. xxi.

GERRIDÆ.

- Eucinostomus meeki*, **sp. n.**, EIGENMANN, Bull. U. S. Fish Comm. f. 1902,
 p. 229, fig., Cuba.

SCIENIDÆ.

- Sagenichthys mordax*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 121,
 pl. xvi, fig. 32, Panama.
Larimus effulgens, Gilb., and *acclivis*, Jord. & Brist., figured by GILBERT &
 STARKS, t. c. pl. xvi, figg. 33 & 34.
Odontoscion xanthops, Gilb., figured by GILBERT & STARKS, t. c. pl. xvii,
 fig. 35.
Stellifer illecebrosus, Gilb., and *zestocarus*, Gilb., figured by GILBERT &
 STARKS, t. c. pl. xviii, figg. 36 & 37.
Ophioscion simulus, Gilb., and *scierus*, J. & G., figured by GILBERT &
 STARKS, t. c. pl. xix, figg. 38 & 39.
Polyclenus goodei, Gilb., figured by GILBERT & STARKS, t. c. pl. xx, fig. 40.
Paralonchurus petersi, Bocourt, figured by GILBERT & STARKS, t. c. pl. xx,
 fig. 41.
Eques viola, Gilb., figured by GILBERT & STARKS, t. c. pl. xxi, fig. 42.

HOPLOGNATHIDÆ.

- Hoplognathus insignis*, Kner. Note by PELLEGRIN, Bull. Soc. zool. France
 xxix, p. 120.

PSEUDOCHROMIDIDÆ.

- Cichlops*, M. & T., is superseded by *Labracinus*, Schleg., GILL, P. U. S.
 Mus. xxviii, p. 119.
Lopholatilus chamaleonticeps, Goode. On its osteology and relationship:
 F. A. LUCAS, Bull. Bur. Fisher. xxiv, p. 81, figg.
Rathbunella alleni, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 267,
 pl. xxviii, Monterey Bay, California.

- Opisthognathus jacksoniensis*, Macleay, redescribed and figured by WAITE, Rec. Austral. Mus. v, p. 240, pl. xxvi, fig. 2.
Pseudopercis, **g. n.**, near *Pinguipes*, for *P. numida*, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 41, Coast of Brazil.

SERRANIDÆ.

- Morone labrax*, L. On cases of malformation: ALBA FASCIOLO, Atti Soc. Ligustica xv, p. 92, pl. iii.
Epinephelus alexandrinus, C. & V. On a specimen from the Adriatic: FILIPPO TROIS, Atti Ist. Veneto lxiii, p. 93. *E. quernus*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, No. 4, p. 1, fig., Honolulu. Redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 449.
Serranus brighami, Seale, redescribed and referred to *Apsilus* by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 452; *S. brighami*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, No. 4, p. 7, fig., Honolulu; *S. kyns-naensis*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 2, Cape of Good Hope.
Anthias duplicitatus, **sp. n.**, MIRANDA RIBEIRA, A Lavoura, 1904, p. 26, Coast of Brazil.
Rhegma thaumasium, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xv, fig. 31.
Priacanthus meeki, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 450, fig., Honolulu.
Lates pliocenius, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, pp. 17 & 52, pl. vi, Pliocene of Szerem, Hungary.
Centropomus argenteus, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 260, Barbadoes and British Guiana.
Scombrops chilodipteroides, Blkr., described and figured by OTAKI, FUGITA & HIGURASHI, Fishes of Japan i, pt. 2.
Apogon queketti, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xiv; *A. evermanni*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxviii, p. 123, Honolulu; *A. menesemus*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 448, fig., Honolulu; *A. erythrinus*, **sp. n.**, SNYDER, t. c. p. 526, pl. ix, fig. 17, Honolulu.
Fowleria brachygrammus, **sp. n.**, O. P. JENKINS, t. c. p. 447, fig., Honolulu.
Ariomma, **g. n.**, near *Apogon*, JORDAN & SNYDER, op. cit. xxvii, p. 942; *A. lurida*, **sp. n.**, iid. ibid. p. 943, Honolulu.
Howella brodiei, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 157, pl. xviii, fig. 4.
Lutianus jordani, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xiv, fig. 29.
Orthopristis brevipinnis, Sldr., figured by GILBERT & STARKS, t. c. pl. xv, fig. 30.
Eteliscus marshi, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 452, fig., Honolulu.
Chilodactylus vittatus, Garrett, redescribed by O. P. JENKINS, t. c. p. 489.
Cirrhitodea, **g. n.**, allied to *Oxycirrhites*, Blkr., for *C. bimacula*, **sp. n.**, O. P. JENKINS, t. c. p. 489, fig., Honolulu.
Histioporus spinifer, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 3, Mossel Bay, S. Africa.
Smerdis macrurus, Ag. (foss.). On a specimen from the Miocene of Hungary, A. KOCH, Foldtani Kozl. xxxiv, pp. 333 & 367.
Krambergeria, **g. n.**, near *Palimphytes*, Wettst., for *K. lanceolata*, **sp. n.** (foss.), SIMIONESCU, Verh. geol. Reichsanst. 1904, p. 148, and Publ. Adamachi Ac. Romana, No. xii, p. 10, pl. i, fig. 9, Oligocene of Roumania.

NANDIDÆ.

Mesonanta surinamensis, Sauv. = *Polycentrus schomburgki*, M. & T., PELLEGRIN, Mem. Soc. zool. France xvi, p. 221.

LOBOTIDÆ.

Lobotes pacificus, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. xiv, fig. 28.

CENTRARCHIDÆ.

R. E. RICHARDSON, Bull. Illinois Lab. vii, pp. 27-35, figg., reviews the species of the genera *Apomotis*, *Lepomis* and *Eupomotis*.

Centrarchus occidentalis, Meek, figured by S. E. MEEK, Field Mus. Zool. v, pl. xii.

Micropterus dolomieu, Lacep. Notes on the nesting habits: D. LYDELL, Bull. U. S. Fish Comm. xxii, p. 39.

Pomotis sparoides, Lacep., figured by T. LARGE, Rep. Fish Comm. Illinois 1900-02, pl. —.

Kuhlia marginata, C. & V. Noticed from Japan and figured by ISHIKAWA, P. Tokyo Mus. i, p. 9, pl. iii, fig. 1.

BERYCIDÆ.

On the osteology of the principal types: E. C. STARKS, P. U. S. Mus. xxvii, pp. 601-619, figg.

On the specimens in the collection of the Philadelphia Academy: H. W. FOWLER, P. Ac. Philad. lvi, pp. 222-238.

Beryx decadactylus, C. & V., redescribed by ARIOLA, Ann. Mus. Genova (3) i, p. 163.

Trachichthodes spinosus, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xiii, fig. 1.

Plectromus macrophthalmus, Gilchrist, figured by GILCHRIST, t. c. pl. xiii, fig. 2.

Myripristis murdjan, Forsk., redescribed by H. W. FOWLER, P. Ac. Philad. lvi, p. 222; *M. sealei*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 439, fig., Honolulu.

Holocentrum osculum, Poey, redescribed by REGAN, Ann. Nat. Hist. (7) xiii, p. 259; *H. siccifer*, Cope, redescribed and figured by H. W. FOWLER, t. c. p. 233, fig.; *H. gladiispinis*, p. 222, fig., Tahiti, *gracilispinis*, p. 228, fig., Honolulu, *polynesia*, p. 229, fig., Thornton Is., and *thorntonensis*, p. 231, fig., Thornton Is., **spp. nn.**, id. *ibid.*

Sargocentron, **subg. n.** for *Holocentrum leo*, Cuv., H. W. FOWLER, t. c. p. 235.

Flammeo chromopterus, **sp. n.**, H. W. FOWLER, t. c. p. 236, fig., Samoa.

Bradyrus, **g. n.** (Berycid. ?) for *Symphodus szajnochæ*, Zigno (foss.), GILL, Science (2) xx, p. 846.

ANACANTHINI.

GADIDÆ.

J. S. THOMSON, J. Mar. Biol. Ass. (2) vii, pp. 1-109, pls. i-viii, has investigated the periodic growth of scales in the principal British species, and regards the scales as giving a direct index of age in these fishes.

- Gadus pannonicus*, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, pp. 4 & 37, pls. i, ii, iv, Pliocene of Szerem, Hungary.
- Holargyreus affinis*, **sp. n.**, COLLETT, Forh. Selsk. Christian. 1904, No. 9, p. 6, Farøe Channel, 375-600 fath.
- Laemonemodes compressicauda*, Gilchrist, figured by GILCHRIST, Mar. invest. S. Africa ii, pl. xvi.
- Urophycis mystaceus* and *latus*, **spp. nn.**, MIRANDA RIBEIRA, A Lavoura, 1904, pp. 46 & 48, Coast of Brazil.
- Motella megalocynodon*, Kolomb., redescribed by KOLOMBATOVIĆ, Glasnik Naravosl. druzt. xv, p. 1.
- Eretmophorus kleinenbergi*, Gigl. Note by ARIOLA, Ann. Mus. Genova (3) i, p. 159.

MACRURIDÆ.

- Synopsis of the genera by DOLLO, Rés. Voy. Belgica, Poiss., p. 38.
- On the Japanese species: JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, pp. 600-627.
- Gadomus colletti*, **sp. n.**, JORDAN & STARKS, t. c. p. 603, fig., Japan.
- Regania*, **g. n.**, near *Gadomus*, JORDAN & STARKS, t. c. p. 604; *R. nipponica*, **sp. n.**, id. ibid. p. 605, fig., Japan.
- Melanobranchus antrodes*, **sp. n.**, JORDAN & STARKS, t. c. p. 606, pl. iv, fig. 1, Japan.
- Coryphænoides awae*, p. 608, fig., *garmani*, p. 610, fig., and *misakius*, p. 611, fig., **spp. nn.**, JORDAN & STARKS, t. c., Japan.
- Hymenocephalus striatissimus*, p. 612, fig., *papyraceus*, p. 614, fig., and *lethonemus*, p. 615, fig., **spp. nn.**, JORDAN & STARKS, t. c., Japan.
- Coelorhynchus unatirostris*, **sp. n.**, JORDAN & STARKS, t. c. p. 619, fig., Japan.
- Nezumia*, **g. n.**, near *Macrurus*, for *N. condylura*, **sp. n.**, JORDAN & STARKS, t. c. p. 620, pl. iv, fig. 2, Japan.
- Nematonurus lecointei*, Dollo, described and figured by DOLLO, t. c. p. 44, pl. vii.

PERCESOCES.

STROMATEIDÆ.

- Stromatioides nozawa*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 8, Japan.
- Platystethus cultratum*, Gthr., noticed and figured by WAITE, Rec. Austral. Mus. v, p. 161, pl. xix, fig. 2.
- Schedophilus maculatus*, Gthr., figured by WAITE, t. c. pl. xx, fig. 1; *S. heathii*, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 260, pl. xxvi, California.

SPHYRÆNIDÆ.

- Sphyræna picudilla*, Poey, diagnosed and figured by H. W. FOWLER, P. Ac. Philad. lv, p. 750, pl. xlvi; *S. ensis*, J. & G., and *borealis*, De Kay, notes by id. t. c. p. 750; *S. tome*, **sp. n.**, id. ibid. p. 750, pl. xlvi, Brazil (?); *S. idiastes*, **sp. n.**, HELLER & SNODGRASS, P. Washington Ac. v, p. 190, pl. ii, Galapagos Archipelago.
- Agriosphyræna*, **subg. n.**, for *Sphyræna snodgrassi*, Jenk., and *barracuda*, Walb., H. W. FOWLER, t. c. p. 749.
- Sphyrænodus hexagonalis*, **sp. n.** (foss.), A. KOCH, Ann. Mus. Hungar. ii, pp. 10 & 44, pls. iv-vi, Pliocene of Szerem, Hungary.

MUGILIDÆ.

- Mugil*, Art. On the habits of the Grey Mulletts in the Arcachon basin: KUNSTLER, C.R. Soc. Biol. lvi, p. 427; *M. dobula*, Gthr. Figured, with an account of the habits, by DANNEVIG, Rep. Fisher. N. S. W. f. 1902, ii, p. 26, pl. iii (1903); *M. brasiliensis*, Spix, and *kelaartii*, Gthr., Notes by H. W. FOWLER, P. Ac. Philad. lv, p. 743; *M. cephalus*, L., and *curema*, C. & V., Young figured, id. ibid. p. 744, figg.; *M. incilis*, Hancock, redescribed and figured, id. ibid. p. 744, pl. xlv.
- Liza caldwelli*, Fowl., note by H. W. FOWLER, t. c. p. 747; *L. alosoides*, **sp. n.**, id. ibid. p. 746, pl. xlv, Gaboon.
- Oedalechilus*, **subg. n.**, for *Agonostoma monticola*, Griff., H. W. FOWLER, t. c. p. 748.

ATHERINIDÆ.

- Atherina*, Art. On the European species: CLEMENTINA BORSIERI, Ann. di Agricolt. Rome, 1902 [1904], 92 pp. The five species: *A. presbyter*, C. & V., *hepsetus*, L., *boyeri*, Risso, *mochon*, C. & V., and *rissoi*, C. & V., figured, pls. vi-x. *A. insularum*, Jord. & Everm., redescribed by O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 437. *A. lacustris*, Bp., redescribed by H. W. FOWLER, P. Ac. Philad. lv, p. 727. *A. sardinella*, **sp. n.**, id. ibid. p. 729, pl. xli, Italy. *A. evermanni*, **sp. n.**, EIGENMANN, Bull. U. S. Fish Comm. f. 1902, p. 228, fig., Cuba.
- Atherinomorus*, **subg. n.** for *Atherina laticeps*, Poey, H. W. FOWLER, P. Ac. Philad. p. 730.
- Ischnomembras*, **g. n.**, near *Atherina*, H. W. FOWLER, t. c. p. 730; *I. gabunensis*, **sp. n.**, id. ibid. p. 731, pl. xlii, Gaboon.
- Atherinella panamensis*, Stdr., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. ix, fig. 17.
- Phoxargyreus*, **g. n.**, near *Menida*, for *P. dayi*, **sp. n.**, H. W. FOWLER, P. Ac. Philad. p. 732, India.
- Basilichthys regia*, Humb. & Val., redescribed by H. W. FOWLER, t. c. p. 734.
- Thyrina guatemalensis*, Gthr., redescribed and figured by H. W. FOWLER, t. c. p. 736, pl. xliii.
- Protistius semotilus*, Cope, redescribed and figured by H. W. FOWLER, t. c. p. 737, pl. xlv.
- Gasteropterus archæus*, Cope, redescribed and figured by H. W. FOWLER, t. c. p. 738, pl. xliii.
- Atherinopsis californiensis*, Gir., redescribed by H. W. FOWLER, t. c. p. 739; *A. magdaleneæ*, **sp. n.**, id. ibid. p. 740, pl. xlii, Lower California.
- Tropidostethus rhotophilus*, Ogilby, noticed and figured by WAITE, Rec. Austral. Mus. v, p. 234, pl. xxv, fig. 2.
- Chirostoma mezquital*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 170, fig., Durango, Mexico.

AMMODYTIDÆ.

Remarks by GILL, P. U. S. Mus. xxviii, p. 159, figg.

SCOMBRESOCIDÆ.

- Hemirhamphus fluviatilis*, Blkr. Note on the anal fin of the male: DUNCKER, Mt. Mus. Hamburg xxi, p. 170, fig. *H. saltator*, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 53, pl. ix, fig. 16, Panama.
- Cypsilurus simus*, C. & V., redescribed by O. P. JENKINS, Bull. U. S. Fish

Comm. xxii, p. 435; *C. atrisignis*, **sp. n.**, id. *ibid.* p. 436, pl. iii, Honolulu.

Exonantes gilberti, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 522, pl. vii, fig. 13, Hawaiian Ids.

CATOSTEOMI.

Syngnathus incompletus, Cosm. (foss.), described and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, p. 6, pl. i, fig. 1. *S. cosmovicti*, **sp. n.** (foss.), id., Verh. geol. Reichsanst. 1904, p. 148, Oligocene of Roumania.

Siphostoma brevicaudum, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 163, fig., Vera Cruz, Mexico.

Dorichthys boaja, Blkr., figured by DUNCKER, Mt. Mus. Hamburg xxi, pl. ii, fig. 9; *D. fluviatilis*, **sp. n.**, id. *ibid.* p. 188, pl. ii, fig. 10, Kuala Lumpur, Malay Peninsula.

Fistularia corneta, **sp. n.**, GILBERT & STARKS, Mem. Calif. Ac. iv, p. 56, pl. x, fig. 18, Pacific Coast of C. America.

Macrorhamphosus scolopax, L., recorded from Florida by H. M. SMITH, Science (2) xix, p. 314.

Gastrosteus aculeatus, L. On its life in salt and fresh waters: BORCEA, Bull. Soc. zool. France xxix, p. 140.

Lampris immaculata, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 4, False Bay, S. Africa.

HETEROMI.

Furasfer dentatus, Cuv. On a larva: FULTON, Rep. Fish Board Scotland xxii, iii, p. 283, pl. xviii, fig. 3. *F. acus*, Brünn. Larva figured by Lo BIANCO, Pelag. Tiefseefisch. 'Maja,' pl. iv, fig. 9.

HAPLOMI.

On the characters of this Suborder and of its principal constituent families and subfamilies: E. C. STARKS, Biol. Bull. vii, pp. 254-262.

CYPRINODONTIDÆ.

F. C. CARLTON, Science (2) xix, p. 245, has made experiments on the colour changes of *Fundulus heteroclitus*, to show their relation to nervous influences. J. A. LONG, t. c. p. 248, has made similar experiments on blinded specimens of this fish.

On hybrids between *Fundulus heteroclitus* and *Menidia notata*: MOENKHAUS, Amer. J. Anat. iii, p. 29.

Haplochilus macrurus, p. 19, Angola, and *schoelleri*, p. 136, Egypt, **spp. nn.**, BOULENGER, Ann. Nat. Hist. (7) xiv; *H. chevalieri* and *decorsei*, **spp. nn.**, PELLEGRIN, Bull. Mus. Paris 1904, pp. 222 & 223, Congo. *Procatopus*, **g. n.**, near *Haplochilus*, for *P. nototænia*, **sp. n.**, BOULENGER, t. c. p. 20, Cameroon.

Fundulus cubensis, **sp. n.**, EIGENMANN, Bull. U. S. Fish. Comm. f. 1902, p. 222, fig., Cuba.

Cynodonichthys, **g. n.**, near *Fundulus*, for *C. tenuis*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 101, fig., Oaxaca, Mexico.

Glaridichthys falcatus and *torralbasi*, **spp. nn.**, EIGENMANN, t. c. pp. 224 & 225, figg., Cuba.

- Girardinus caudimaculatus*, Hens. On a female assuming the male character of the anal fin: E. PHILIPPI, SB. Ges. naturf. Berlin 1904, p. 196. *G. garmani*, **sp. n.**, EIGENMANN, t. c. p. 226, fig., Cuba.
- Toxus*, **g. n.**, near *Glaridichthys* and *Girardinus*, for *T. riddlei*, **sp. n.**, EIGENMANN, t. c. p. 226, figg., Cuba.
- Heterandria cubensis*, **sp. n.**, EIGENMANN, t. c. p. 227, fig., Cuba.
- Zoogoneticus maculatus*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 257, Rio Santiago, Mexico.
- Characodon geddesi*, **sp. n.**, REGAN, t. c. p. 257, Lake Tezcoco, S. Mexico; *C. multiradiatus*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 119, Lerma, Mexico.
- Goodea luitpoldii*, Stdr., figured by S. E. MEEK, Field Mus. Zool. v, pl. i; *G. whitei* and *toweri*, **spp. nn.**, id. ibid. pp. 137 & 138, figg., Mexico.
- Skiffia lermæ*, Meek, figured by S. E. MEEK, t. c. pl. viii.
- Platyptæcilus maculatus*, Gthr., figured by S. E. MEEK, t. c. pl. ix; *P. variatus*, p. 146, pl. x, and *nelsoni*, p. 147, fig., **spp. nn.**, id. ibid., Mexico.
- Pœcilia latipunctata*, **sp. n.**, S. E. MEEK, t. c. p. 150, fig., Mexico.
- Xiphophorus jalapæ*, Meek, figured by S. E. MEEK, t. c. pl. xi.
- Pseudoxiphophorus pauciradiatus*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 256, Orizaba, Mexico.
- Orestias*, Cuv. On united lower pharyngeal bones in this genus: PELLEGRIN, C.R. Ac. Sci. cxxxix, p. 682, figg. *O. tschudii*, Cast. Note by PELLEGRIN, Bull. Soc. zool. France xxix, p. 92. *O. agassizii*, C. & V., vars. nn., *inornata*, *typica*, *senechali*, *crequii*, id. ibid. pp. 93 & 94, L. Titicaca; *O. neverui*, **sp. n.**, id. ibid. p. 95, L. Titicaca.
- Gambusia fasciata*, p. 129, fig., Oaxaca, and *bonita*, p. 132, fig., Vera Cruz, **spp. nn.**, S. E. MEEK, Field Mus. Zool. v.
- Paragambusia*, **g. n.**, for *Gambusia nicaraguensis*, Gthr., S. E. MEEK, t. c. p. 133.

ALEPIDOSAURIDÆ.

- Alepidosaurus æsculapius*, Bean = *A. ferox*, Lowe, JORDAN & SNYDER, Smithson. Collect. i, p. 235.

SCOPELIDÆ.

- Scopelus*, Cuv., or *Myctophum*, Raf. Remarks on the disposition of the photophores, and synopsis of the subgenera and species, by BRAUER, Zool. Anz. xxviii, p. 377.
- Scopelus rissoi*, Cocco, and *crocodilus*, Risso, figured, by LO BIANCO, Pelag. Tiefseefisch. "Maja," pl. ii, figg. 2 & 3; *S. argenteus*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 15, Cape of Good Hope.
- Myctophum valdiviæ*, p. 398, fig., Atlantic and Indian Oceans, *splendidum*, p. 399, fig., Atlantic and Indian Oceans, *luetkeni*, p. 400, Indian Ocean, *microps*, p. 400, fig., Indian Ocean, *elucens*, p. 401, fig., Indian Ocean, *fulgens*, p. 402, fig., Indian Ocean, *procerum*, p. 402, fig., Agulhas Bank, *nigrescens*, p. 403, Indian Ocean, and *macropteron*, p. 404, fig., Indian Ocean, **spp. nn.**, BRAUER, t. c.
- Neoscopelus alcocki*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 580, pl. ii, figg. 1 & 2, Japan.
- Diaphus watasei*, **sp. n.**, JORDAN & STARKS, t. c. p. 580, fig., Japan.
- Notoscopelus ejectus*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 150, pl. xviii, fig. 2, Lord Howe Id.
- Dasy Scopelus naufragus*, **sp. n.**, WAITE, t. c. p. 154, pl. xviii, fig. 3, Lord Howe Id.

- Centrobranchus*, **g. n.**, close to *Rhinoscopelus*, Lützk., for *Rhinoscopelus coruscans*, Fowl., which is redescribed, H. W. FOWLER, P. Ac. Philad. lv, p. 754.
- Æthopora perspicillata*, Ogilby, redescribed and figured by WAITE, t. c. p. 149, pl. xviii, fig. 1.
- Chlorophthalmus punctatus*, **sp. n.**, GILCHRIST, Mar. invest. S. Africa iii, p. 15, Cape of Good Hope, 154 fath.; *C. albatrossis*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 579, pl. i, fig. 1, Japan.
- Goodella hypozona*, Ogilby = *Trachinocephalus myops*, Forst., WAITE, t. c. p. 232, pl. xxv, fig. 1.
- Holosteus esocinus*, Ag. (foss.). Note by EASTMAN, Bull. Mus. Harvard xlvi, p. 28.

DALLIIDÆ.

On the osteology : STARKS, Zool. Jahrb. Syst. xxi, pp. 249–262, figg.

ESOCIDÆ.

Umbra, Kram. Notes on the habits by GILL, Smithson. Collect. i, p. 295, figg.

ENCHODONTIDÆ.

Ischyrrhiza antiqua, Leidy (foss.) = *Onchosaurus radicalis*, Gerv., EASTMAN, Amer. Natural. xxxviii, p. 298.

HAPLOCHITONIDÆ.

Prototroctes maræna, Gthr. Notes on its habits by D. G. STEAD, Rep. Fisher. N. S. W. f. 1902, ii, p. 34, figg. (1903).

GALAXIIDÆ.

Geographical list of the species by DOLLO, Rés. Voy. Belgica, Poiss. p. 150.

APODES.

- C. M. L. POPTA, Ann. Sci. nat. (8) xix, pp. 367–390, figg., has studied the differences in the branchial arches and their appendages in a large number of Apodal Fishes.
- O. RICCI, Atti Soc. Modena (4) iv, pp. 11–35, remarks on the researches on the metamorphoses of the Mediterranean Apodal Fishes.
- Muræna clepsydra*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. vii, fig. 13; *M. lampra* and *kauila*, **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, pp. 423 & 424, figg., Honolulu.
- Echidna vineta*, p. 429, fig., *obscura*, p. 430, fig., and *psalion*, p. 431, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu; *E. uniformis*, **sp. n.**, SEALE, Pap. B. P. Bishop Mus. i, p. 62, Guam Id.
- Gymnothorax chalazius*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 145, pl. xvii, fig. 2, Lord Howe Id.; *G. leucostictus*, p. 425, fig., *gracili-cauda*, p. 426, fig., *thalassopterus*, p. 427, pl. ii, *leucacme*, p. 427, fig., *ercodes*, p. 428, fig., and *leiuala*, p. 428, fig., **spp. nn.**, O. P. JENKINS, t. c., Honolulu; *G. nuttingi*, p. 518, pl. iv, fig. 7, *berndti*, p. 518, pl. iv, fig. 8, *mucifer*, p. 519, pl. v, fig. 9, *xanthostomus*, p. 519, pl. v, fig. 10, and *waiakua*, p. 520, pl. vi, fig. 11, **spp. nn.**, SNYDER, Bull. U. S. Fish Comm. xxii, Hawaiian Ids.

- Uropterygius leucurus*, **sp. n.**, SNYDER, t. c. p. 521, pl. vi, fig. 12, Hawaiian Ids.
- Muraenichthys nicholsæ*, **sp. n.**, WAITE, Rec. Austral. Mus. v, p. 142, pl. xvii, fig. 1, Lord Howe Id.
- Moringua hawaiiensis*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 517, pl. iii, fig. 6, Hawaiian Ids.
- Gastrostomus pacificus*, **sp. n.**, B. A. BEAN, Smithson. Collect. i, p. 254, fig., Pacific Ocean, 5269 faths.
- Nemichthys avocetta*, J. & G., redescribed by GILBERT, P. Calif. Ac. Zool. (3) iii, p. 256.
- Conger vulgaris*, Cuv. On the larva and young: FULTON, Rep. Fish. Board Scotland xxii, iii, p. 281, pl. xviii, figg. 1 & 2. On a larva: EIGENMANN, Science (2) xix, p. 629, fig.
- Congrellus bowersi*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 422, fig., Honolulu.
- Veternio*, **g. n.**, near *Conger*, for *V. verrens*, **sp. n.**, SNYDER, t. c. p. 516, pl. ii, fig. 3, Honolulu.
- Anguilla vulgaris*, Turt., R. QUINTON, C.R. Ac. Sci. cxxxix, pp. 938-941, and C.R. Soc. Biol. lvii, p. 170, has made experiments on the changes taking place in Eels artificially transferred from fresh into salt water, and vice-versa. The larva, *Leptocephalus brevirostris*, figured by LO BIANCO, Pelag. Tiefseefisch. "Maja," pl. i. *A. vulgaris*, var. *kieneri*, Kaup. Note by ARIOLA, Ann. Mus. Genova (3) i, p. 156. *A. australis*, Rich. On a case of icterism: J. A. KERSHAW, Victorian Natural. xx, p. 140. *A. caeca*, **sp. n.**, H. M. SMITH, P. Soc. Washington xvii, p. 121, fig., Atlantic, 60 miles S. of Nomans Land.
- Sphagebranchus flavicaudus*, **sp. n.**, SNYDER, Bull. U. S. Fish Comm. xxii, p. 516, pl. ii, fig. 4, Hawaiian Ids.
- Callechelys luteus*, **sp. n.**, SNYDER, t. c. p. 517, pl. iii, fig. 5, Hawaiian Ids.
- Brachysomophis henskawi*, **sp. n.**, JORDAN & SNYDER, P. U. S. Mus. xxvii, p. 940, Honolulu.
- Pisodonophis diaspilotus*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. vii, fig. 12.
- Microdonophis macgregori*, **sp. n.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, p. 422, fig., Hawaiian Ids.
- Eomyrus ventralis*, Ag. (foss.). Fragment noticed and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, p. 5, pl. i, fig. 3.

OSTARIOPHYSI.

LORICARIIDÆ.

Monographed by C. T. REGAN, Tr. Zool. Soc. London xvii, pp. 191-350, pls. ix-xxi.

- Plecostomus festæ*, Blgr., pl. ix, fig. 1, *cordovæ*, Gthr., pl. ix, fig. 3, *borellii*, Blgr., pl. ix, fig. 2, and *wuchereri*, Gthr., pl. x, fig. 2, figured by REGAN, t. c.; *P. latirostris*, p. 213, pl. xi, fig. 1, Matto Grosso and Goyaz, *garmani*, p. 214, pl. x, fig. 1, Rio dal Velhas, Brazil, and *pellegrini*, p. 218, Upper Amazon, **spp. nn.**, id. ibid.
- Ancistrus oligospilus*, Gthr., pl. xii, fig. 1, *platycephalus*, Blgr., pl. xii, fig. 4, and *setosus*, Blgr., pl. xii, fig. 2, figured by REGAN, t. c.; *A. annectens*, p. 225, pl. xi, fig. 2, N. W. Ecuador, and *guentheri*, p. 241, pl. xii, fig. 3, British Guiana, **spp. nn.**, id. ibid.
- Chæstostomus anomalus*, Regan, pl. xiii, fig. 2, and *microps*, Gthr., pl. xiv, fig. 3, figured by REGAN, t. c.; *C. maculatus*, p. 246, pl. xiv, fig. 4, High Peru, *marcapata*, p. 246, pl. xiv, fig. 1, E. Peru, *brevis*, p. 247, pl. xiii, fig. 3, E. Ecuador, *marginatus*, p. 249, pl. xiii, fig. 1, N. W.

- Ecuador, and *thomsoni*, p. 250, pl. xiv, fig. 2, Colombia, **spp. nn.**, id. *ibid.*
- Xenocara*, **g. n.**, near *Chaetostomus*, REGAN, t. c. p. 251; *X. latifrons*, Gthr., pl. xv, fig. 1, and *chagresi*, Eigenm., pl. xiv, fig. 7, figured, id. *ibid.*; *X. occidentalis*, p. 257, pl. xiv, fig. 5, E. Ecuador, *brevipinnis*, p. 257, Rio Grande do Sul, and *montana*, p. 258, pl. xiv, fig. 6, Andes of Bolivia, **spp. nn.**, id. *ibid.*
- Hypoptopoma guentheri*, Blgr., figured by REGAN, t. c. pl. xv, fig. 2.
- Otocinclus vittatus*, **sp. n.**, REGAN, t. c. p. 267, pl. xv, fig. 3, Matto Grosso.
- Loricaria jubata*, Blgr., pl. xv, fig. 5, and *latirostris*, Blgr., pl. xvi, fig. 1, figured by REGAN, t. c.; *L. nigricauda*, p. 275, pl. xv, fig. 2, Rio Janeiro, *steindachneri*, p. 281, E. Brazil, *microlepidogaster*, p. 283, pl. xv, fig. 4, Rio Grande do Sul, *punctata*, p. 285, pl. xvii, fig. 1, Amazon, *macrops*, p. 290, pl. xvii, fig. 3, R. La Plata, *simillima*, p. 292, pl. xvii, fig. 2, E. Ecuador, and *laticeps*, p. 295, pl. xx, fig. 1, Paraguay, **spp. nn.**, id. *ibid.*
- Oxyloricaria frenata*, Blgr., figured by REGAN, t. c. pl. xviii, fig. 2; *O. guentheri*, p. 299, pl. xviii, fig. 1, Upper Amazon, *robusta*, p. 300, pl. xix, fig. 1, Paraguay, and *lyra*, p. 300, pl. xix, fig. 2, R. Jurua, **spp. nn.**, id. *ibid.*
- Farlowella gladiolus*, Gthr., figured by REGAN, t. c. pl. xx, fig. 2; *F. gracilis*, **sp. n.**, id. *ibid.* p. 303, pl. xx, fig. 3, Cauca Valley, Colombia.
- Arges guentheri*, Blgr., pl. xxi, fig. 2, *orientalis*, Blgr., pl. xxi, fig. 4, *brachycephalus*, Gthr., pl. xxi, fig. 8, and *festæ*, Blgr., pl. xxi, fig. 7, figured by REGAN, t. c.; *A. homodon*, p. 309, pl. xxi, fig. 1, Andes of Colombia, *boulengeri*, p. 310, E. Ecuador, *eigenmanni*, p. 312, pl. xxi, fig. 3, Andes of Ecuador, *vallanti*, p. 312, Andes of Ecuador, *chotæ*, p. 313, pl. xxi, fig. 5, N. Ecuador, *marmoratus*, p. 314, pl. xxi, fig. 6, Andes of Colombia, *fissidens*, p. 316, Andes of Ecuador, and *simonsi*, p. 317, pl. xxi, fig. 9, Andes of Peru, **spp. nn.**, id. *ibid.*

SILURIDÆ.

- Clarias lœviceps*, Gill, redescribed by BOULENGER, P. Z. S. 1904, i, p. 200; *C. fuscus*, Lacep. Note by VAILLANT, Bull. Mus. Paris 1904, p. 298; *C. pulcher*, **sp. n.**, POPTA, Notes Leyden Mus. xxiv, p. 179, C. Borneo.
- Silurus mento*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 192, Yunnan.
- Silurichthys schneideri* and *indragiriensis*, **spp. nn.**, VOLZ, Rev. Suisse Zool. xii, pp. 463 & 464, Sumatra.
- Macrones pluriradiatus*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 462, pl. xxiii, fig. 2; *M. bimaculatus*, **sp. n.**, VOLZ, Rev. Suisse Zool. xii, p. 466, Sumatra; *M. howong*, p. 181, *bongan*, p. 182, *bo*, p. 183, *kajan*, p. 184, and *fortis*, p. 185, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, C. Borneo; *M. medianalis*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 194, Yunnan.
- Pseudobagrus ornatus*, **sp. n.**, DUNCKER, Mt. Mus. Hamburg xxi, p. 173, pl. ii, fig. 13, Muar R., Malay Peninsula.
- Liocassis fuscus*, **sp. n.**, POPTA, t. c. p. 186, C. Borneo.
- Neopangasius*, **g. n.**, near *Pseudopangasius*, Blkr., for *N. nieuwenhuisii*, **sp. n.**, POPTA, t. c. p. 180, C. Borneo.
- Liobagrus reini*, Hilg., figured by ISHIKAWA, P. Tokyo Mus. i, pl. i; *L. nigricauda*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 193, Yunnan.
- Fajumia schweinfurthi*, **g.** and **sp. nn.** (foss.), STROMER, N. Jahrb. Min. 1904, i, p. 3, pl. 1, figg. 1 & 2, Middle Eocene of Egypt.
- Socnopæa grandis*, **g.** and **sp. nn.** (foss.), STROMER, t. c. p. 6, pl. 1, fig. 3, Middle Eocene of Egypt.

- Amiurus nebulosus*, Les. Notes on the breeding habits by H. M. SMITH & L. G. HARRON, Bull. U. S. Fish Comm. xxii, p. 151; *A. melas*, Raf., figured by T. LARGE, Rep. Fish Comm. Illin. 1900-02, pl. —; *A. australis*, p. 13, S. Vera Cruz, and *mexicanus*, R. Panuco, Mexico, **spp. nn.**, S. E. MEEK, Field Mus. Zool. v.
- Rhamdia oaxacæ*, Meek, figured by S. E. MEEK, t. c. pl. v.
- Amphilius atesuensis*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 17, Gold Coast.
- Acrochordonichthys obscurus*, p. 187, *buettikoferi*, p. 188, and *varius*, p. 189, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, C. Borneo.
- Arius bonneti*, **sp. n.** (foss.), PRIEM, Bull. Soc. geol. France (4) iv, p. 44, figg., Upper Bartonian of the Paris Basin.
- Netrema mazatlanæ*, **sp. n.**, GILBERT, P. Calif. Ac. Zool. (3) iii, p. 255, pl. xxv, Mazatlan, Mexico.
- Galeichthys xenauchen*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. iv, fig. 8; *G. eigenmanni*, **sp. n.**, id. ibid. p. 21, pl. iv, fig. 7, Panama; *G. aguadulce*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 9, pl. iv, R. Papaloapam, Mexico.
- Tachysurus emmelane*, Gilb., figured by GILBERT & STARKS, t. c. pl. vi; *T. steindachneri*, p. 29, pl. v, fig. 9, and *evermanni*, p. 32, pl. v, fig. 10, **spp. nn.**, iid. ibid., Panama.
- Synodontis resupinatus*, **sp. n.**, BOULENGER, P. Z. S. 1904, i, p. 199, pl. viii, Upper Niger.
- Chiloglanis*, Peters. Synopsis of the species by BOULENGER, P. Z. S. 1903, ii, pp. 333; *C. modjensis*, **sp. n.**, id. ibid. p. 332, pl. xxxi, fig. 3, Modjo R., Gallaland; *C. cameronensis* and *batesii*, **spp. nn.**, id. Ann. Nat. Hist. (7) xiv, pp. 18 & 19, Cameroon.
- Bagarius nieuwenhuisii*, **sp. n.**, POPTA, Notes Leyden Mus. xxiv, p. 190, C. Borneo.
- Glyptosternum laak*, p. 190, and *tiong*, p. 191, **spp. nn.**, POPTA, t. c., C. Borneo.
- Pseudecheneis paviei*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 464, pl. xxiii, fig. 3.
- Callomystax schmidtii*, **sp. n.**, VOLZ, Rev. Suisse Zool. xii, p. 470, Sumatra.
- Trichomycterus dispar*, Tsch., and *rivulatus*, C. & V. Notes by PELLEGRIN, Bull. Soc. zool. France xxix, p. 91.

CYPRINIDÆ.

- J. REIGHARD, Science (2) xix, pp. 211 & 212, has made observations on the breeding habits of American Cyprinids, and on the function of the nuptial pearl-like warts of the males.
- On hybrids of German Cyprinids: E. LEONHARDT, Die Bastarde der Deutschen karpfenähnlichen Fische. Neudamm, 1904, 8vo, 58 pp., figg.
- Catostomus commersonii*, Lacep. On the breeding habits: CULBERTSON, P. Indiana Ac. 1903, p. 65. *C. tahoensis*, Gill & Jord., redescribed by RUTTER, Bull. U. S. Fish Comm. xxii, p. 147; *C. sonorensis*, Meek, and *conchos*, Meek, figured by S. E. MEEK, Field Mus. Zool. v, pls. vi & vii.
- Pantosteus lahonton*, **sp. n.**, RUTTER, t. c. p. 146, fig., N. E. California.
- Carpioides grayi*, Cope. Note by H. W. FOWLER, P. Ac. Philad. lvi, p. 242; *C. microstomus*, p. 27, fig., *elongatus*, p. 28, fig., and *labiosus*, p. 29, fig., **spp. nn.**, S. E. MEEK, t. c. Mexico.
- Moxostoma congestum*, B. & G. Note by H. W. FOWLER, t. c. p. 243.
- Dangila koedjem* and *rosea*, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, pp. 192 & 193, C. Borneo.

- Osteochilus jentinki*, p. 194, *vittatoides*, p. 195, *kelabau*, p. 196, *repang*, p. 196, and *bellus*, p. 197, **spp. nn.**, POPTA, Notes Leyden Mus. xxiv, C. Borneo.
- Labeo neumanni*, **sp. n.**, BOULENGER, P. Z. S. 1903, ii, p. 329, pl. xxix, Modjo and Wabbi Rivers, Gallaland; *L. chariensis*, **sp. n.**, PELLEGRIN, Bull. Mus. Paris 1904, p. 311, Shari R.
- Tylognathus kajanensis* and *bo*, **spp. nn.**, POPTA, t. c. pp. 198 & 199, C. Borneo.
- Zezera hilgendorfi*, Ishikawa, described and figured by ISHIKAWA, P. Tokyo Mus. i, p. 3, pl. ii, fig. 1.
- Discognathus*, Heck. Synopsis of the African species by BOULENGER, P. Z. S. 1903, ii, p. 331; *D. blanfordii*, Blgr., figured, id. ibid. pl. xxxi, fig. 2; *D. makiensis*, **sp. n.**, id. ibid. p. 330, pl. xxxi, fig. 3, Maki R., L. Zwai.
- Crossochilus oblongus*, C. & V., var. n. *nigroloba*, POPTA, t. c., p. 200, C. Borneo; *C. pseudobagroides*, **sp. n.**, DUNCKER, Mt. Mus. Hamburg xxi, p. 176, pl. ii, fig. 12, Muar R., Malay Peninsula.
- Paracrossochilus*, **g. n.**, near *Crossochilus*, for *P. bicornis*, **sp. n.**, POPTA, t. c. p. 200, C. Borneo.
- Barbus maculatus*, C. & V. Note by DUNCKER, Mt. Mus. Hamburg xxi, p. 177. *B. proctozyrson*, Blkr., redescribed by VOLZ, Rev. Suisse Zool. xii, p. 477; *B. halei*, p. 178, pl. ii, fig. 15, *soroides*, p. 178, pl. i, fig. 7, *pahangensis*, p. 179, pl. i, fig. 4, and *lineatus*, p. 180, pl. ii, fig. 14, **spp. nn.**, DUNCKER, Mt. Mus. Hamburg xxi, Malay Peninsula; *B. grahami* and *yunnanensis*, **spp. nn.**, REGAN, Ann. Nat. Hist. (7) xiii, pp. 190 & 191, Yunnan; *B. linnellii*, **sp. n.**, LÖNNBERG, Ann. Nat. Hist. (7) xiii, p. 138, Elephant Lake, Cameroon Mountain; *B. erlangeri*, **sp. n.**, BOULENGER, P. Z. S. 1903, ii, p. 331, pl. xxx, Wabbi, Modjo, and Iraro Rivers, Gallaland; *B. micronema*, p. 237, Cameroon, *nummifer*, p. 449, L. Victoria, *macropristis*, p. 449, L. Victoria, and *doggetti*, p. 450, L. Victoria, **spp. nn.**, id. Ann. Nat. Hist. (7) xiii; *B. ansorgii*, p. 16, Angola, *walkeri*, p. 16, Gold Coast, *eutenia*, p. 218, Angola, and *holotenia*, p. 218, Cameroon to Congo, **spp. nn.**, id. op. cit. xiv.
- Luciocyprinus*, **g. n.**, near *Barbus* and *Gobio*, for *L. lang-soni*, **sp. n.**, VAILLANT, Bull. Mus. Paris 1904, p. 299, Upper Tonkin.
- Oreinus grahami*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiv, p. 416, Yunnan.
- Acanthogobio paitschewskii* and *oxyrhynchus*, **spp. nn.**, NIKOLSKI, Annuaire Mus. St. Petersb. viii, 1903, pp. 356 and 358, L. Chanka, E. Asia.
- Hemibarbus joiteni*, **sp. n.**, JORDAN & STARKS, Smithson. Collect. i, p. 241, p. lxiv, Tientsin, China.
- Pimephales anuli*, **sp. n.**, KENDALL, Bull. U. S. Fish Comm. xxii, p. 360, fig., Maine.
- Chasmistes chamberlaini*, **sp. n.**, RUTTER, Bull. U. S. Fish Comm. xxii, p. 147, N.E. California.
- Agosia robusta*, **sp. n.**, RUTTER, t. c. p. 148, fig., N.E. California.
- Notropis chalybeus abbotti*, subsp. n., H. W. FOWLER, P. Ac. Philad. lvi, p. 239, pl. xvii, New Jersey; *N. nazas* and *forionensis*, **spp. nn.**, S. E. MEEK, Field Mus. Zool. v, p. 70, figg., Mexico.
- Paranotropis*, **subg. n.**, for *Notropis luciodus*, Cope, and, *N. pilsbryi*, **sp. n.**, H. W. FOWLER, t. c. p. 245, fig., White River Basin, Arkansas.
- Leuciscus erythrophthalmus*, L., and *L. aula*, Bp. On a hybrid: BELLOTTI, Atti Mus. Milano xliii, p. 1, pl. i. On a hybrid between *L. erythrophthalmus*, L., and *L. muticellus*, Bp., ROSETTA SEGRE, Boll. Mus. Torino xix, No. 472, p. 10; *L. dorobaë*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 6, pl. iii, fig. 2, Japan; *L. carletoni*, **sp. n.**, KENDALL, Bull. U. S. Fish Comm. xxii, p. 357, fig., Maine; *L. (Phaxinellus) chaignoni*, **sp. n.**, VAILLANT, Bull. Mus. Paris 1904, p. 188, Tunisia.

- Tinca vulgaris*, Cuv., var. n. *cestellæ*, ROSETTA SEGRE, Boll. Mus. Torino xix, No. 472, p. 2, Cadore, N.E. Italy.
- Rasbora vulgaris*, p. 181, *maculata*, p. 182, pl. i, fig. 6, *dorsiocellata*, p. 182, pl. i, fig. 2, and *heteromorpha*, p. 182, pl. i, fig. 5, **spp. nn.**, DUNCKER, Mt. Mus. Hamburg xxi, Malay Peninsula.
- Acanthorhodeus tonkinensis*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 465, pl. xxiii, fig. 4.
- Leucaspilus delineatus*, Heck., redescribed (in Hungarian) and figured by G. VUTSKITS, Allatt. Kozl. Magyar Tars. ii, 1903, p. 169, pl. xv.
- Barilius polylepis*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 191, Yunnan; *B. andersoni*, **sp. n.**, id. op. cit. xiv, p. 416, Yunnan.
- Zacco mitsukurii*, **sp. n.**, ISHIKAWA, P. Tokyo Mus. i, p. 4, pl. ii, fig. 2, Japan.
- Neobola argentea*, **sp. n.**, PELLEGRIN, Bull. Soc. zool. France xxix, p. 184, L. Victoria.
- Chanodichthys affinis*, Vaill., described and figured by VAILLANT, Miss. Pavie iii, p. 467, pl. xxiii, fig. 5.
- Pelecus cultratus*, L. On its distribution in Germany: NEHRING, SB. Ges. naturf. Berlin 1904, p. 43.
- Hemiculter varpachovskii*, **sp. n.**, NIKOLSKI, Annuaire Mus. St. Petersb. viii, 1903, p. 359, L. Buir-Nor, E. Mongolia.
- Hemicultrella soldatovi*, **sp. n.**, NIKOLSKI, t. c. p. 361, E. Mongolia.
- Pseudolaubuca* (?) *clupeoides*, **sp. n.**, DUNCKER, Mt. Mus. Hamburg xxi, p. 183, pl. i, fig. 1, Kuala Lumpur, Malay Peninsula.
- Nemachilus pleurotaenia* and *nigromaculatus*, **spp. nn.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 192, Yunnan; *N. selangoricus*, **sp. n.**, DUNCKER, t. c. p. 175, Kuala Lumpur, Malay Peninsula.
- Orthrias*, Jord. On a specimen from Vancouver (imported?): JORDAN, Science (2) xix, p. 634.
- Ussuria*, **g. n.**, allied to *Lepidocephalichthys*, for *U. leptcephala*, **sp. n.**, NIKOLSKI, Annuaire Mus. St. Petersb. viii, 1903, p. 362, Ussuri R. and E. Mongolia.

CHARACINIDÆ.

- Alestes natalensis*, **sp. n.**, BOULENGER, Ann. Nat. Hist. (7) xiv, p. 155, near Durban.
- Hemigrammus compressus*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 87, fig., R. Papaloapam, Mexico.
- Eucynopotamus*, n. n. for *Evermannella*, Eigenm. nec Fowler, H. W. FOWLER, P. Ac. Philad. lvi, p. 119.
- Neoborus quadrilineatus*, **sp. n.**, PELLEGRIN, Bull. Mus. Paris 1904, p. 219, Casamanza R.
- Nannocharax dimidiatus*, **sp. n.**, PELLEGRIN, t. c. p. 220, Casamanza R.

MALACOPTERYGII.

W. G. RIDEWOOD, P. Z. S. 1904, ii, pp. 35-81, figg., gives detailed descriptions and figures of the skulls of the *Elopidæ* and *Albulidæ*, and remarks on the morphology of the skull in the lower Teleosteans generally. The same author deals in similar manner with the cranial osteology of the *Mormyridæ*, *Notopteridæ*, and *Hyodontidæ*, J. Linn. Soc. xxix, pp. 188-217, pls. xxii-xxv.

GONORHYNCHIDÆ.

Gonorhynchus greyi, Rich. Young described and figured by WAITE, Rec. Austral. Mus. v, p. 147, pl. xvii, fig. 3; *G. abbreviatus*, Schleg., figured by JORDAN & SNYDER, Smithson. Collect. i, pl. lix.

STOMIATIDÆ.

- Chauliodus sloanii*, Bl. Schn., figured by Lo BIANCO, Pelag. Tiefseefisch. "Maja," pl. iii, fig. 6; *C. emmelas*, **sp. n.**, JORDAN & STARKS, Bull. U. S. Fish Comm. xxii, p. 579, pl. i, fig. 2, Japan.
- Cyclothone microdon*, Gthr., figured by Lo BIANCO, t. c. pl. ii, fig. 4.
- Argyropelecus hemigymnus*, Cocco. On a larval specimen: HOLT & BYRNE, Ann. Nat. Hist. (7) xiv, p. 38, fig.
- Polyipnus stereope*, **sp. n.**, JORDAN & STARKS, t. c. p. 581, pl. ii, fig. 3, Japan.

SALMONIDÆ.

- On the Japanese species: KITAHARA, Annot. zool. Japon. v, pp. 117-120.
- D. S. JORDAN, Amer. Natural. xxxviii, pp. 885-887, remarks on the present distribution of Californian Trout, natural and through human agency.
- Salmo salar*, L., and *S. trutta*, L. On specimens from the Tay and Tweed: CALDERWOOD, P. R. Soc. Edinb. xxv, p. 27, pl. —. *S. fontinalis*, Mitch. On albino specimens and their progeny: C. R. PETTIS, Science (2) xix, p. 867.
- Oncorhynchus quinnat*, Rich. On the habits: C. RUTTER, Bull. U. S. Fish Comm. xxii, p. 65, pls. x-xvi.
- Coregonus*, L. On the species found in Maine: KENDALL, Bull. U. S. Fish Comm. xxii, p. 363, figg. *C. stanleyi*, **sp. n.**, id. ibid. p. 366, fig., Maine; *C. macrophthalmus*, Nüssl., and *exiguus*, Klunz. Remarks by NÜSSLIN, Jahresh. Ver. Wurttemb. lx, p. 189, and KLUNZINGER, t. c. p. 335; *C. albula*, Art., var. n. Kietz, MICHAILOVSKY, Annuaire Mus. St. Petersb. viii, 1903, p. 347, L. Onega; *C. fera*, var. *tscholmu-gensis*, Danil., redescribed, id. ibid. p. 352.

CLUPEIDÆ.

- G. ANTIPA, Anz. Ak. Wiss. 1904, pp. 299-303, has a preliminary report on the Clupeines of the Western Coast of the Black Sea and the mouth of the Danube.
- Clupea harengus*, L., A. GIARD, C.R. Soc. Biol. lvi, pp. 1058-1061, has further notes on the movements of the Herring on the Boulogne coast. Remarks by CLIGNY, op. cit. lvii, p. 347. *C. pilchardus*, L. On a specimen from the Moray Firth: FULTON, Rep. Fish. Board Scotland xxii, iii, p. 284. *C. sprattus*, L. On its fecundity: FULTON, t. c. p. 285. *C. sulina*, **sp. n.**, ANTIPA, t. c. p. 302, Black Sea; *C. (Opis-thonema) bulleri*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 255, Jalisco, Mexico.
- Alosa pontica*, Eichw., varr. nn. *negrescens*, *danubii*, and *russac*, ANTIPA, t. c. pp. 300 & 301, Black Sea; *A. nordmanni*, **sp. n.**, id. ibid. p. 301, Black Sea.
- Sardina dobrogica*, **sp. n.**, ANTIPA, t. c. p. 302, Black Sea.
- Dorosoma anale*, **sp. n.**, S. E. MEEK, Field Mus. Zool. v, p. 93, fig., Mexico.
- Meletia crenata*, Heck. (foss.), redescribed and figured by SIMIONESCU, Publ. Adamachi Ac. Romana xii, p. 4, pls. i & ii.
- Diplomystus marmorensis*, **sp. n.** (foss.), A. S. WOODWARD, Quart. J. Geol. Soc. lx, p. 284, pl. xxiv, fig. 28, Miocene of Sarkeni, Sea of Marmora.
- Copeichthys*, n. n. for *Diplomystus*, Cope, nec Blkr., DOLLO, Res. Voy. Belgica, Poiss. p. 159.
- Engraulis (Stolephorus) argentivittatus*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiii, p. 255, Jalisco, Mexico.

- Anchovia rostralis*, Gilb. & Piers., and *spinifera*, C. & V., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. viii.
Lyrolepis caucasicus, g. and sp. nn. (foss.), ROMANOWKY, Verh. Russ. Min. Ges. (2) xlii, p. 1, figg., pl. i, Caucasus.

SAURODONTIDÆ.

- Portheus molossus*, Cope (foss.). On a complete skeleton: OSBORN, Bull. Amer. Mus. xx, p. 377, figg., pl. x.

OSTEOGLOSSIDÆ.

- Arapaima gigas*, Cuv., described, with notes on the habits, by A. R. FERREIRA, Arch. Mus. Rio Jan. xii, p. 155.

NOTOPTERIDÆ.

- On the cranial osteology and systematic position: RIDEWOOD, J. Linn. Soc. xxix, pp. 202-215, pl. xxiv.

HYODONTIDÆ.

- On the cranial osteology and systematic position: RIDEWOOD, J. Linn. Soc. xxix, pp. 206-215, pl. xxv.

MORMYRIDÆ.

- On the cranial osteology and systematic position: RIDEWOOD, J. Linn. Soc. xxix, pp. 188-214, pls. xxii & xxiii.
Marcusenius budgetti, sp. n., BOULENGER, P. Z. S. 1904, i, p. 197, pl. vii, fig. 1, Niger Delta.
Gnathonemus gilli, sp. n., BOULENGER, t. c. p. 198, pl. vii, fig. 2, Niger Delta; *G. lambouri*, p. 439, Diélé, Congo, *fritelii*, p. 440, Diélé, Congo, and *bruyerei*, p. 441, Ivory Coast, spp. nn., PELLEGRIN, Bull. Mus. Paris 1904.
Mormyrus curvifrons, sp. n., PELLEGRIN, t. c. p. 438, Congo.
Hyperopisus tenuicauda, sp. n., PELLEGRIN, t. c. p. 312, Shari R.

ALBULIDÆ.

- Monopterus gigas*, Volta (foss.), redescribed by EASTMAN, Bull. Mus. Harvard xlv, p. 27.

GANOIDEI.

HOLOSTEI.

- Amia calva*, L., figured, with full account of its habits, by REIGHARD, Mark Anniv. Vol. p. 57, pl. vii.
 A. C. EYCLESYMER, Univ. Chicago Publ. x, 1903, 17 pp., pls. xvii & xviii, has investigated the early development of *Lepidosteus osseus*.
 On the occurrence of a Pycnodont in the Lower Oligocene of Hungary: A. KOCH, Foldtani Közl. xxxiv, pp. 334 & 367.

CHONDROSTEI.

- A. NICOLAS, Arch. Biol. xx, pp. 425-460, pls. x-xii, has investigated the development of the pancreas, the liver, and the spleen in *Acipenser ruthenus*.
- E. GIACOMINI, Monit. Zool. ital. xv, pp. 19-32, writes on the suprarenal capsule of *Acipenser sturio*.
- ANNA DRZEWINA, C.R. Soc. Biol. lvi, pp. 957-959, has a preliminary note on the granular cells of the kidney of *Acipenser sturio*.
- G. WAGNER, Science xix, p. 554, points out the presence of minute rostral barbels and of small scales near the branchial region in *Polyodon*.
- A. D. IMMS, P. Z. S. 1904, ii, pp. 22-35, pl. ii, writes on the gill-rakers of *Polyodon*.
- Acipenseridae*. Definitions of the four recent genera, and list of the species, by L. S. BERG, Zool. Anz. xxvii, pp. 665-667.
- Acipenser*, L. Notes on the specimens in the Vienna University Museum: WERNER, Zool. Jahrb. Syst. xxi, pp. 266-269. *A. sturio*, L. Notes by N. M. KATURIĆ, Rad. Jugoslav. Ak. cliv, 1903, p. i.
- Huso*, g. n., for *Acipenser huso*, L., and *dauricus*, Georgi, L. S. BERG, t. c. p. 665.
- Nephrotus chorzoviensis*, H. v. Meyer (foss.), redescribed and figured by SCUPIN, Zeitschr. Deutsch. geol. Ges. lv, p. 465, pls. xxi & xxii.

DIPNEUSTI.

- On the morphology of the skeleton: K. FÜRBRINGER in SEMON, Zool. Forsch. i, pp. 423-510, figg., pls. xxxvii-xli.
- K. FÜRBRINGER, Anat. Anz. xxiv, pp. 405-408, remarks on some points in the anatomy of the head of the Dipneusti.
- R. WIEDERSHEIM, Anat. Anz. xxiv, pp. 651 & 652, has further remarks on the larynx of the Dipneusti.
- E. GÖPPERT, Festschr. Haeckel, pp. 115-132, figg., pl. vii, has investigated the larynx of *Protopterus annectens*.
- L. NEUMAYER in SEMON, Zool. Forsch. i, pp. 377-422, figg., pl. xxxvi, deals with the development of the viscera of *Neoceratodus forsteri*.
- H. BLUNTSCHLI in SEMON, Zool. Forsch. i, pp. 333-356, figg., pl. xxxv, deals with the histology of the liver of *Neoceratodus forsteri*.
- W. E. KELLICOTT, Biol. Bull. vi, pp. 320 & 321, has a note on the development of the vascular system of *Neoceratodus forsteri*.
- J. G. KERR, Tr. R. Soc. Edinb. xli, pp. 119-127, 6 pls., writes on the early development of the motor nerve trunks and of the myotomes in *Lepidosiren paradoxa*.
- R. BING & R. BURCKHARDT, Anat. Anz. xxv, pp. 588-599, figg., write on the central nervous system of *Neoceratodus forsteri*.
- HOSCH, Arch. mikr. Anat. lxiv, pp. 99-110, pl. vi, has studied the structure of the eye in *Protopterus annectens*.
- Ceratodus priscus*, sp. n. (foss.), E. FRAAS, Ber. Oberrhein. geol. Ver. xxxvii, p. 30, fig., Trias, Black Forest; *C. africanus*, sp. n. (foss.), HAUG, C.R. Ac. Sci. cxxxviii, p. 1529, Cretaceous of Djoua, Sahara.

CROSSOPTERYGII.

- Polypterus*, Geoffr. On the specimens in the Vienna University Museum: WERNER, Zool. Jahrb. Syst. xxi, p. 271.

OSTRACOPHORI.

- R. H. TRAQUAIR, Pal. Soc. Mon. 1904, pp. 91-118, figg., pls. xix-xxvi, continues his monograph of the *Asterolepidæ* of Britain.
- O. JAEKEL, Zeitschr. Deutsch. geol. Ges. lv, Verh., pp. 41-60, figg., discusses the structure and systematic position of the *Asterolepidæ*, and gives a restoration of *Asterolepis milleri*, Ag.
- C. R. EASTMAN, Science (2) xix, pp. 703 & 704, remarks on the marginal and ridge scales in *Cephalaspis* and *Drepanaspis*.
- O. JAEKEL, Zeitschr. Deutsch. geol. Ges. lv, Verh., pp. 84-93, figg., comments on Patten's views on *Tremataspis*.
- Bothriolepis*, Eichw. New observations by PATTEN, Biol. Bull. vii, p. 113, figg.; *B. coloradensis*, **sp. n.**, EASTMAN, Amer. J. Sci. (4) xviii, p. 254, fig., Upper Devonian of Colorado.

CHONDROPTERYGII.

HOLOCEPHALI.

- S. GARMAN, Bull. Mus. Harvard xli, pp. 245-272, 15 pls., writes on the classification of the living Chimæroids, and describes and figures the external characters and anatomy of *Rhinochimæra pacifica*, Mitsukuri, and *Harriotta raleighana*, Goode & Bean.
- Synopsis of the recent genera and species by WERNER, Zool. Jahrb. Syst. xxi, p. 275.
- B. DEAN, Amer. Natural. xxxviii, pp. 486 & 487, and Biol. Bull. vii, pp. 105-112, writes on the egg-cases of Chimæroids.
- Chimæra collieri*, Benn. On the egg and its capsule: B. DEAN, C.R. Soc. Biol. lvii, p. 14; *C. monstrosa*, L. Notes by WERNER, t. c. p. 273, figg.; *C. phantasma*, not specifically separable: id. ibid. p. 275. *C. phantasma*, Jord. & Snyder. Note by JORDAN & SNYDER, P. U. S. Mus. xxvii, p. 223, fig. Described and figured by B. DEAN, J. Coll. Tokyo xix, No. 3, p. 3, pl. 1, fig. 3; *C. mitsukurii*, **sp. n.**, id. ibid. p. 6, pl. i, fig. 1, Japan; *C. (Bathyalopea) mirabilis*, **sp. n.**, COLLETT, Forh. Selsk. Christian. 1904, No. 9, p. 5, Faroe Channel, 375-600 faths.
- Rhinochimæra pacifica*, Mitsuk. Notes and figure by B. DEAN, t. c. No. 4, 2 pls.
- Rhynchodus*, Newb. (foss.). On the dentition: EASTMAN, Amer. Natural. xxxviii, p. 295. *R. pertenuis*, **sp. n.**, id. ibid. p. 297, fig., Devonian of Delaware County, New York.
- Menaspis*, Ewald (foss.), is referred to the Holocephali by BASHFORD DEAN, Science (2) xix, p. 253, and Amer. Geol. xxxiv, p. 49, pl. ii.

PLAGIOSTOMI.

- A. DOHRN, Mt. Stat. Neapel xvii, pp. 1-294, pls. i-xvi, continues his studies on Selachian development, with the object of elucidating the question of the origin of Vertebrates.
- H. HELBIG, Acta Ac. German. lxxxii, pp. 335-524, figg., pls. viii & ix, deals with the structure and systematic relationships of the *Lamargidæ*.
- R. C. PUNNETT, Biometrika iii, pp. 313-362, pl. i, has a paper on merism and sex in *Spinax niger*, as a contribution to the question of the origin of limbs.

- J. W. LANGELAAN, P. Ac. Amsterdam vii, pp. 36-40, figg., describes the trunk-myotome of *Acanthias vulgaris*.
- H. V. NEAL, Mark Anniv. Vol. pp. 291-313, pl. xxii-xxiv, writes on the development of the spinal ventral nerves in Plagiostomes.
- J. BORCEA, C.R. Ac. Sci. cxxxviii, pp. 1342 & 1343, remarks on the difference in structure and in secretory power between the anterior and the posterior kidney in male Plagiostomes.
- J. BORCEA, op. cit. cxxxix, pp. 747-749, has a note on the development of the kidney and of Leydig's gland in the Plagiostomes.
- J. BORCEA, Bull. Soc. sci. med. Ouest France xiii, pp. 108-110, remarks on the male genital ducts of *Centrina salviani*.
- J. BORCEA, Bull. Soc. zool. France xxix, pp. 138-140, records a case of anomalous conformation of the right oviduct in a *Scyllium canicula*.
- J. BORCEA, C.R. Ac. Sci. cxxxviii, pp. 99-101, has investigated the gland secreting the envelop of the egg in Plagiostomes.
- ANNA DRZEVINA, C.R. Soc. Biol. lvi, pp. 637-639, has a preliminary note on the lymphoid organ of the œsophagus in Plagiostomes.
- D. CARAZZI, Monit. Zool. ital. xv, pp. 147 & 148, and Int. Monatsschr. Anat. xxi, pp. 1-18, fig., pl. i, has notes on the cardiac and œsophageal arterial circulation in *Scyllium catulus*.
- M. CAVALIÉ, Trav. Lab. Arcachon vii, pp. 23-28, figg., remarks on the bile vesicle and its arterial circulation in various Plagiostomes.
- T. D'EVANT, Anat. Anz. xxiv, pp. 490-492, remarks on rudiments of the amnion in *Pristiurus* and *Scyllium*.
- O. S. STRONG, Biol. Bull. vi, p. 314, has a note on the cranial nerves of *Acanthias*.
- W. A. LOCY, Mark Anniv. Vol. pp. 39-55, pls. v & vi, describes a new cranial nerve in Plagiostomes.
- O. SUND, Biol. Centrbl. xxiv, pp. 651-659, figg., writes on the development of the olfactory organ of *Spinax niger*.
- IDA H. HYDE, Amer. J. Physiol. x, pp. 236-258, figg., has made experiments to determine the localization of the respiratory centre in *Raia*.
- R. QUINTON, C.R. Ac. Sci. cxxxix, pp. 995-997, and C.R. Soc. Biol. lvii, pp. 513 & 514, has made experiments on Plagiostomes to establish the relation between the saline concentration of the fish and that of the water in which it lives.
- J. BERNSTEIN & A. TSCHERMAK, SB. Ak. Berlin 1904, pp. 301-313, figg., have made thermodynamic experiments on the electric organ of *Torpedo*.
- M. CAVALIÉ, Bibliog. anat. xiii, pp. 214-220, figg., writes on the nervous ramifications in the electric organ of *Torpedo galvani*.
- M. CAVALIÉ, C.R. Soc. Biol. lvi, pp. 46 & 47, remarks on the chromoblasts of *Torpedo galvani*.
- E. GLEY, C.R. Ac. Sci. cxxxviii, pp. 1547-1549, writes on the toxicity of the blood of *Torpedo marmorata*.
- A. KOCH, Foldtani Kozl. xxxiv, pp. 190-203, & 260-274, fig., 1 pl., describes and figures Selachian teeth from the Miocene of Felsőesztergály, Hungary.
- Carcharias velox*, Gilb., and *cerdale*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. i, fig. 3, and pl. ii, fig. 4; *C. azureus*, sp. n., GILBERT & STARKS, t. c. p. 11, pl. ii, fig. 5, Panama; *C. insularum* and *nesiotus*, spp. nn., SNYDER, Bull. U. S. Fish Comm. xxii, pp. 513 & 514, pl. i, figg. 1 & 2, Hawaiian Ids.; *C. cuvieri*, Ag. (foss.), noticed and figured by EASTMAN, Bull. Mus. Harvard xlv, p. 25, fig.; *C. collata* and *incidens*, spp. nn. (foss.), EASTMAN, Maryland geol. Surv. 1904, pp. 85 & 87, pl. xxxii, Miocene of Maryland.
- Galeocerdo davisii*, n. n. for *Notidanus marginalis*, Davis, part. (foss.), CHAPMAN & PRITCHARD, P. Soc. Victoria (2) xvii, p. 273; *G. triqueter*,

- sp. n.** (foss.), EASTMAN, Maryland geol. Surv. 1904, p. 89, pl. xxxii, fig. 12, Miocene of Maryland.
- Carcharodon humilis*, **sp. n.** (foss.), A. KOCH, Foldtani Kozl. xxxiv, pp. 194 & 265, pl. i, figg. 3-5, Miocene of Felsőesztergály, Hungary.
- Lamna macrota*, Ag., var. *n. hungarica* (foss.), A. KOCH, t. c. pp. 195 & 266, pl. i, fig. 6, Miocene of Felsőesztergály, Hungary.
- Odontaspis nasutus*, **sp. n.**, CARLOS DE BRAGANÇA, Res. Inv. Amelia, Ichthyol. ii, p. 49, pl. i, Coast of Portugal.
- Mitsukurina owstoni*, Jord. On the skeleton and systematic position: VAILLANT, C.R. Ac. Sci. cxxxviii, p. 1517.
- Selache maxima*, L. On various external and anatomical characters: CARAZZI, Zool. Anz. xxviii, p. 161, fig.
- Pseudotriacis acrales*, **sp. n.**, JORDAN & SNYDER, Smithson. Collect. i, p. 232, pl. lxii, Japan.
- Scyllium natalense*, **sp. n.**, REGAN, Ann. Nat. Hist. (7) xiv, p. 128, Natal.
- Proscyllium*, **g. n.**, for *Scyllium habereri*, **sp. n.**, HILGENDORF, SB. Ges. naturf. Berlin 1904, p. 39, Formosa.
- Pristiurus murinus*, **sp. n.**, COLLETT, Forh. Selsk. Christian. 1904, No. 9, p. 4, Faroe Channel, 600 fath.; *P. eastmani*, **sp. n.**, JORDAN & SNYDER, Smithson. Collect. i, p. 230, pl. lx, Japan.
- Ginglymostoma miqueli*, **sp. n.** (foss.), PRIEM, Bull. Soc. geol. France (4) iv, p. 288, fig., Miocene of Herault, France.
- Cestracion japonicus*, Macleay. Note by WERNER, Zool. Jahrb. Syst. xxi, p. 288. *C. cainozicus*, **sp. n.** (foss.), CHAPMAN & PRITCHARD, P. Soc. Victoria (2) xvii, p. 270, pl. xi, figg. 5-8 & xii, fig. 2, Tertiary (Balcombian) of Australia.
- Cosmacanthus elegans*, **sp. n.** (foss.), H. M. EVANS, Bull. geol. Univ. Calif. iii, p. 398, pl. xlvii, Lower Trias of Idaho.
- Asteracanthus coceanicus*, Tate (foss.), noticed and figured by CHAPMAN & PRITCHARD, P. Soc. Victoria (2) xvii, p. 271, pl. xi, figg. 3 & 4 & xii, fig. 1; *A. ornatissimus*, Ag. (foss.). On a fragment of a tooth: A. RICHE, Ann. Univ. Lyon (2) i, No. 14, p. 75, pl. i, fig. 1.
- Edestus*, Leidy (foss.). C. R. EASTMAN, Mark Anniv. Vol. pp. 279-289, pl. xxi, further deals with the question of the nature of *Edestus* and related forms. Remarks by E. T. NEWTON, Quart. J. Geol. Soc. lx, p. 1. *E. triserratus*, **sp. n.**, id. ibid. p. 6, fig., pl. 1, Carboniferous, Staffordshire.
- Notidanus jenningsi*, **sp. n.** (foss.), CHAPMAN & PRITCHARD, P. Soc. Victoria (2) xvii, p. 268, pl. xi, figg. 1 & 2, Tertiary (Kalinman beds?) of Port Phillip, Australia. *N. diffusidens*, **sp. n.** (foss.), A. KOCH, Foldtani Kozl. xxxiv, pp. 203 & 274, fig., Miocene of Tarnócz, Hungary.
- Etmopterus spinax*, L., and *pusillus*, Lowe, figured by CARLOS DE BRAGANÇA, Res. Inv. Amelia, Ichthyol. ii, pl. ii; *E. princeps*, **sp. n.**, COLLETT, Forh. Selsk. Christian. 1904, No. 9, p. 3, Faroe Channel, 375-600 fath.
- Acanthius geelongensis*, **sp. n.** (foss.), CHAPMAN & PRITCHARD, t. c. p. 269, p. xi, fig. 15, Tertiary (Balcombian) of Geelong, Australia.
- Squatina occidentalis*, **sp. n.** (foss.), EASTMAN, Maryland geol. Surv. 1904, p. 71, pl. xxviii, fig. 1, Miocene of Maryland.
- Pristis*, L. Synopsis of the species by WERNER, Zool. Jahrb. Syst. xxi, p. 294.
- Trygon pastinaca*, L. Note by FULTON, Rep. Fish. Board Scotland xxii, iii, p. 283. *T. schmardæ*, **sp. n.**, WERNER, Zool. Jahrb. Syst. xxi, p. 298, Jamaica.
- Raia agassizii*, varr. nn. *picta* and *meta*, MIRANDA RIBEIRA, A Lavoura, 1904, pp. 19 & 20, Coast of Brazil; *R. arctowski*, **sp. n.**, for egg-cases from the Antarctic region, DOLLO, Rés. Voy. Belgica, Poiss. p. 52, pl. ix, fig. 10.
- Myliobatis*, Cuv. On fossil remains from the Middle Eocene of the

Bavarian Alps: E. STROMER, Zeitschr. Deutsch. geol. Ges. lvi, pp. 249-263, figg., pl. xvi. *M. asperimus*, Gilb., figured by GILBERT & STARKS, Mem. Calif. Ac. iv, pl. iii. *M. frangens*, **sp. n.** (foss.), EASTMAN, Maryland geol. Surv. 1904, p. 75, pl. xxix, fig. 3, Miocene of Maryland.

Aëtobatis biochei, **sp. n.** (foss.), PRIEM, Bull. Soc. geol. France (4) iv, p. 286, fig., Miocene of Herault, France.

Dasyatis hawaiiensis and *sciera*, **spp. nn.**, O. P. JENKINS, Bull. U. S. Fish Comm. xxii, pp. 420 & 421, pl. 1, Hawaiian Islands.

Ptychodus, Ag. (foss.). On teeth from the Modenese Appennine: PANTANELLI, Pr-verb. Soc. Toscana xiv, p. 70. *P. decurrens*, Ag. (foss.). On the jaws and dentition: A. S. WOODWARD, Quart. J. Geol. Soc. lx, p. 133, fig., pl. xv.

ICHTHYOTOMI.

Diacranodus texensis, Cope. Skull described and figured by BROILI, N. Jahrb. Min., Beil. xix, p. 467, pls. xxiv & xxv.

ACANTHODII.

Gyracanthides, A. S. Woodw. Note by A. S. WOODWARD, Rep. Brit. Ass. 1903, p. 662.

CYCLIÆ.

B. DEAN, Science xix, p. 425, comments on the recent contributions to the knowledge of *Palæospondylus*.

CYCLOSTOMI.

B. DEAN, J. Coll. Tokyo xix, No. 2, 23 pp., figg., 1 pl., has notes on the Myxinids of Japan.

J. W. LANGELAAN, P. Ac. Amsterdam vii, pp. 34-36, figg., describes the trunk-myotome of *Petromyzon fluviatilis*.

E. BALLOWITZ, SB. Ak. Berlin 1904, pp. 671-676, has studied the structure of the olfactory organ in the Cyclostomes.

E. BALLOWITZ, Arch. mikr. Anat. lxiv, pp. 78-95, pl. vi, writes on the olfactory glands of *Petromyzon fluviatilis*, and, pp. 96-120, pl. vii, on the spermatozoa of the same.

K. E. SCHREINER, Biol. Centrbl. xxiv, pp. 91-104, 121-129, and 162-173, writes on the genital organs and the mode of reproduction of *Myxine glutinosa*.

G. C. PRICE, Amer. J. Anat. iv, pp. 117-138, figg., has made further observations on the development of the excretory organs in *Bdellostoma stouti*.

N. LOEWENTHAL, Anat. Anz. xxv, pp. 81-94, figg., has a contribution to the knowledge of the cells of the epidermis in *Petromyzon*.

W. LUBOSCH, Jena. Zeitschr. xxxviii, pp. 673-724, figg., pl. xxiii, has investigated the morphology of the egg of *Petromyzon fluviatilis*.

E. BATAILLON, Arch. Entwicklmech. xviii, pp. 1-56, figg., pls. i-iv, has made experiments on artificial parthenogenesis in *Petromyzon fluviatilis*.

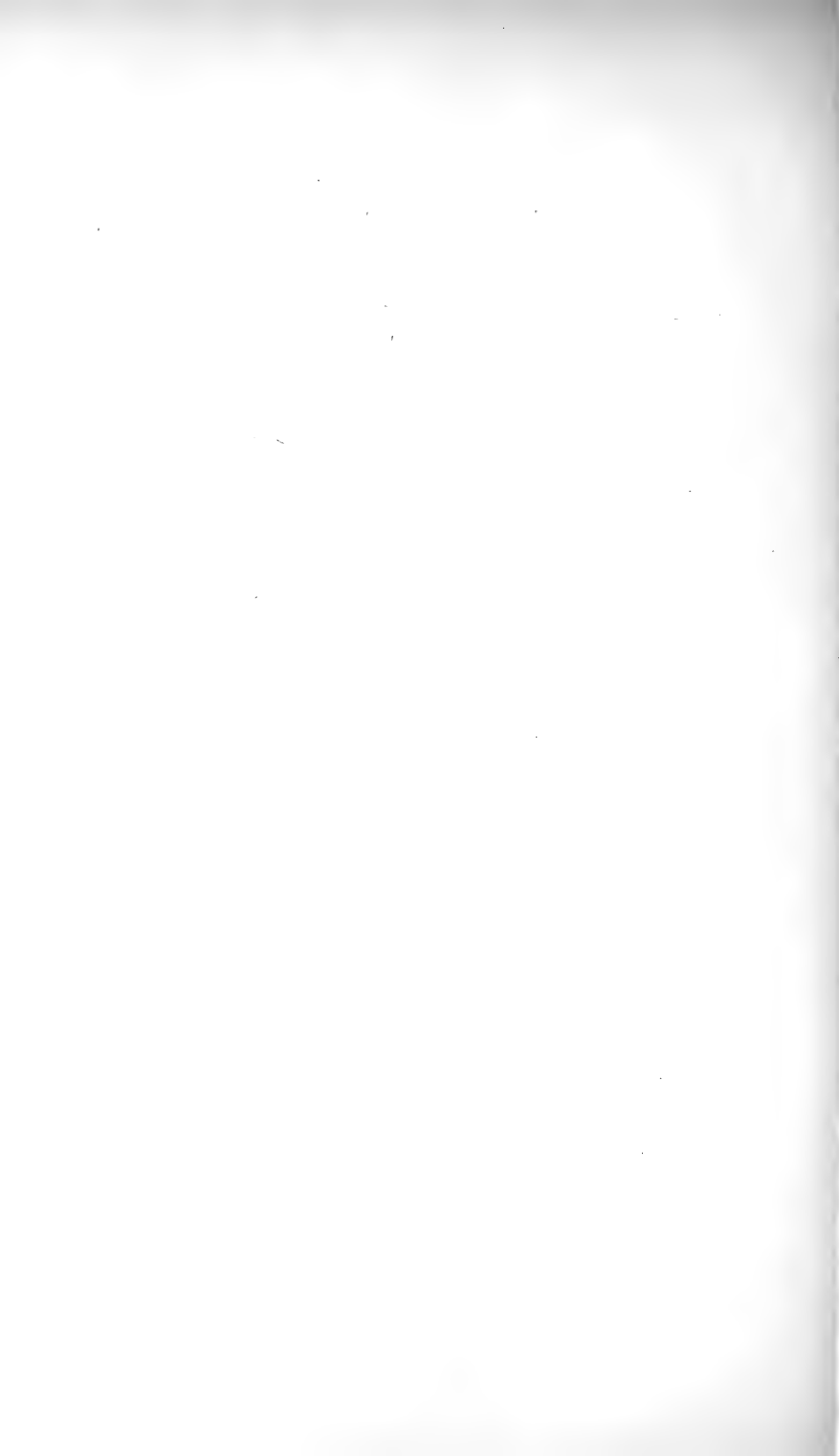
J. DAWSON, Science (2) xix, pp. 218 & 219, remarks on the mechanism of feeding and breathing in *Petromyzon*.

A. J. CARLSON, Amer. J. Physiol. x, pp. 401-418, has investigated the rate of the nervous impulse in the spinal cord and in the vagus and the hypoglossal nerves of *Bdellostoma dombeiyi*.

- Homea okinoseana*, **sp. n.**, B. DEAN, J. Coll. Tokyo xix, No. 2, p. 8, figg., pl. i, figg. 1 & 2, Japan.
Paramyxine atami, **g. & sp. nn.**, B. DEAN, t. c. p. 14, figg., pl. i, figg. 3-5, Japan.

LEPTOCARDII.

- W. A. HERDMAN contributes the chapter on the Leptocardii or Cephalochordata in vol. vii of the Cambridge Natural History, pp. 112-138, figg.
 E. LÖNNBERG, Bronn's Klassen Ordnungen vi, i, pp. 209-240, pls. x-xii, continues his account of the Leptocardii.
 R. C. PUNNETT, in GARDINER, Faun. Mald. Arch. i, p. 361, investigates meristic variation in the Maldives Leptocardii.
 J. W. VAN WIJHE, in Petrus Camper, i, pp. 109-195, pls. viii-xi (1901) has a contribution to the anatomy of the head of *Branchiostoma lanceolatum*.
 B. ZARNIK, Zool. Jahrb. Anat. xxi, pp. 253-338, figg., pls. xvii-xxi, has a paper on the sexual organs of the Amphioxus.
 T. BOVERI, Anat. Anz. xxv, pp. 599-604, fig., remarks on the excretory canals of the Amphioxus.
 B. ZARNIK, Anat. Anz. xxiv, pp. 609-630, figg., writes on the segmental veins in the Amphioxus, and on their relation to the Ductus Cuvieri.
 T. BOVERI, Zool. Jahrb. Suppl. vii, pp. 409-428, figg., writes on the organs of light-perception in the Amphioxus.
 H. JOSEPH, Verh. Anat. Ges. 1904, pp. 16-26, remarks on peculiar cell-structures in the central nervous system of the Amphioxus.
Branchiostoma lanceolatum, Pall., recorded from Djibouti by PELLEGRIN, Bull. Mus. Paris 1904, p. 544. *B. pelagicum*, Gthr. Note by C. F. COOPER in GARDINER, Faun. Mald. Arch. i, p. 348, p. 352, fig.
Asymmetron lucayanum, Andrews. On specimens from the Maldives: C. F. COOPER, t. c. pl. xviii, fig. 1 (1903).
Heteropleuron maldivense, **sp. n.**, C. F. COOPER, t. c. p. 349, pl. xviii, fig. 2, Maldives.



VI. TUNICATA.

BY

W. T. CALMAN, D.Sc.

CONTENTS.

| | Page |
|-------------------------------------|------|
| I. TITLES | 1 |
| II. SUBJECT-INDEX. | |
| A. Anatomy, Physiology, &c. | 3 |
| B. Embryology | 4 |
| C. Distribution | 4 |
| 1. Geographical | 4 |
| 2. Geological [Vacant] | |
| III. SYSTEMATIC INDEX | 4 |

I. TITLES.

1. ANON. Bull. internat. expl. Mer. Année 1903-1904, No. 3, Partie D. Plankton, pp. 115-146. [Tables.]
2. APSTEIN, C. Salpes d'Amboine (Voyage de MM. M. Bedot et C. Pictet dans l'archipel Malais). Rev. Suisse Zool. xii, pp. 649-656, pl. xii.
3. BLUNTSCHLI, H. Beobachtungen am Ovarialei der Monascidie *Cynthia microcosmus*. Morphol. Jahrb. xxxii, pp. 391-450, pls. ix & x, 5 text-figg.
4. CONKLIN, EDWIN G. Organ-forming germ regions in the eggs of Ascidians and Snails. Amer. Natural. xxxviii, pp. 501 & 502.
5. ———. The Organization and Orientation of the Ascidian egg. Biol. Bull. vi, p. 322.

6. DAMAS, DÉSIÉ. Contribution à l'étude des Tuniciers. Arch. Biol. xx, pp. 745-833, pls. xx-xxiii.
 - I. La segmentation de la queue des Appendiculaires.
 - II. Étude comparée de la branchie des Tuniciers.
 - III. Quelques remarques sur l'anatomie de la larve de *Distaplia magnilarva*.
7. —. Les Molgules de la côte belge. Op. cit. xxi, pp. 161-181, 6 text-figg.
8. ENRIQUES, PAOLO. Della circolazione sanguigna nei Tunicati (*Ciona intestinalis*). Arch. zool. ital. ii, pp. 11-17.
9. FERNANDEZ, MIGUEL. Zur mikroskopischen Anatomie des Blutgefäß-systems der Tunikaten. Nebst Bemerkungen zur Phylogenese des Blutgefäß-systems im allgemeinen. Jena. Zeitschr. xxxix, pp. 323-422, pls. xv-xviii.
10. GUTHERZ, S. Selbst- und Kreuzbefruchtung bei solitären Ascidien. Arch. mikr. Anat. lxiv, pp. 111-120.
Abstract by O. SEELIGER, Zool. Zentrbl. xii, pp. 252 & 253.
11. HARTMEYER, ROBERT. Zoologische Ergebnisse einer Untersuchungsfahrt.....nach der Bäreninsel und Westspitzbergen.....von Dr CL. HARTLAUB. v. Die Ascidien. Wiss. Meeresuntersuch. Abth. Helgoland v (2), pp. 87-95.
12. —. Tunicaten von Ægina. Zool. Anz. xxvii, pp. 321-327, 2 text-figg.
13. HERDMAN, W. A. Ascidians and Amphioxus. Cambridge Natural History vii, pp. 33-138, text-figg. 15-90.
14. JULIN, CHARLES. Recherches sur la phylogenèse des Tuniciers. Développement de l'appareil branchial. Zeitschr. wiss. Zool. lxxvi, pp. 544-611, 42 text-figg.
Abstract and criticism by O. SEELIGER, Zool. Zentrbl. xii, pp. 209-214.
15. —. Recherches sur la phylogenèse des Tuniciers. *Archiascidia neapolitana* nov. gen., nov. sp. Mt. Stat. Neapel xvi, pp. 489-552, pl. xx.
16. KOROTNEFF, A. Ueber den Polymorphismus von *Dolchinia*. Biol. Centrbl. xxiv, pp. 61-65, 3 text-figg.
17. —. Notes sur les Cyclomyaires. Mt. Stat. Neapel xvi, pp. 480-488, pl. xix, 2 text-figg.
18. MARINE BIOLOGICAL ASSOCIATION. Plymouth Marine Invertebrate Fauna. Being Notes of the local distribution of species occurring in the neighbourhood. J. Mar. Biol. Ass. vii, pp. 155-298, 1 chart. [Tunicata, pp. 295-298.]
19. MICHAELSEN, W. Revision der compositen Styeliden oder Polyzoinen. Jahrb. Hamburg. Anst. xx, 2 Beiheft, Mt. Mus. Hamburg, pp. 1-124, pls. i & ii, 1 text-fig., 1 map.
20. —. Die stolidobranchiaten Ascidien der deutschen Tiefsee-Expedition. Wiss. Ergeb. deutschen Tiefsee-Exp. "Valdivia" vii, pp. 183-260, pls. x-xiii.
Quoted hereafter as Stolid. Ascidien Valdivia.
Abstract by O. SEELIGER, Zool. Zentrbl. xii, pp. 253 & 254.

21. NERESHEIMER, EUGEN. Ueber *Lohmannella catenata*. Zeitschr. wiss. Zool. lxxvi, pp. 137-166, pls. x & xi, 6 text-figg. [Parasite of *Fritillaria*.]
22. NOBRE, AUGUSTO. Subsídios para o estudo da fauna marinha do sul de Portugal. Ann. Sci. nat. Porto viii, pp. 153-160.
23. PÉREZ, CH. Sur un mode nouveau d'association des blastozoïtes en chaînes chez une Salpe du golfe Persique. Pr.-verb. Soc. Sci. Bordeaux 1902-1903, p. 35.
Abstract of (4) Zool. Rec. 1903.
24. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. Biol. Untersuch. (n. s.) xi, pp. 1-32, pls. i-xii.
25. RITTER, WILLIAM E. The structure and affinities of *Herdmania claviformis*, the type of a new genus and family of Ascidians from the coast of California. Mark Anniversary Volume (4to, New York, 1903), pp. 237-261, pls. xviii & xix.
Abstract by O. SEELIGER, Zool. Zentrbl. xii, pp. 254 & 255.
26. ——. *Euherdmania* vs. *Herdmania* preoccupied. Zool. Anz. xxvii, pp. 650 & 651.
27. SEELIGER, OSWALD. Tunicata (Manteltiere). Bronn's Klassen und Ordnungen des Tier-Reichs. iii, Suppl., Lief. 44-47, pp. 689-752, pls. xxix & xxx, figg. in text, and Lief. 48-52, pp. 753-832, pls. xxxi & xxxii, figg. in text.
28. SLUITER, C. PH. Die Tunicaten der Siboga-Expedition. i. Abtheilung. Die socialen und holosomen Ascidien. Monogr. lvia. Uitkomsten... H. M. Siboga... uitgegeven door Dr Max Weber. 126 pp., 15 pls.
Quoted hereafter as Tunic. Siboga i.
Abstract by O. SEELIGER, Zool. Zentrbl. xii, pp. 255 & 256.
29. SOWINSKY, W. Introduction a l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante [Russian text]. Zapiski Kiev. Obshch. xviii, pp. i-xiii, 1-487, 1-216, i-iv, 4 pls.

II. SUBJECT-INDEX.

A. ANATOMY, PHYSIOLOGY and GENERAL.

General account of Tunicata; HERDMAN (13): general account continued; SEELIGER (27).

Anatomy of *Archiascidia* in relation to general morphology and phylogeny of Tunicata; JULIN (15).

Anatomy and affinities of *Herdmania* (*Euherdmania*); RITTER (25).

Structure of branchiæ with reference to classification of Tunicata; DAMAS (6).

Segmentation of tail in *Oikopleura* and other *Appendiculariæ*; DAMAS (6).

Histology of vascular system in Tunicata, general morphological conclusions; FERNANDEZ (9).

Circulation of blood in *Ciona*; ENRIQUES (8).

Polymorphism of *Dolchinia*; KOROTNEFF (16 & 17).

Structure of stolon in *Dolchinia* and *Doliolum*; KOROTNEFF (17).

Spermatozoa of Tunicata; RETZIUS (24).

Parasitic fish (*Fierasfer*) in *Styela aurata*; SLUITER (28).

Mesozoon (*Lohmannella*), parasitic in *Fritillaria*; NERESHEIMER (21).

Self- and cross-fertilisation in Ascidians; GUTHERZ (10).

B. EMBRYOLOGY.

Development of ovarian egg in *Cynthia* ; BLUNTSCHLI (3).

Differentiation in unsegmented egg of Tunicata ; CONKLIN (4 & 5).

Anatomy of larva of *Distaplia* ; DAMAS (6).

Development of *Archiascidia*, placental attachment of embryo ; JULIN (15).

Development of branchia in Tunicata ; DAMAS (6), JULIN (14).†

C. DISTRIBUTION.

1. *Geographical.*

Distribution of *Polyzoine*, new localities for many spp. ; MICHAELSEN (19).

Spitzbergen and Bear Island ; HARTMEYER (11).

North Sea and Baltic Plankton ; ANON (1).

N. W. Europe, *Alloeocarpa*, n. sp. ; MICHAELSEN (19).

Atlantic, Cape, Agulhas Bank, E. Africa, Sumatra, Enderby Land, Bouvet Id., n. spp. ; MICHAELSEN (20).

Plymouth ; MAR. BIOL. ASS. (18).

Belgium, *Molgulidae*, n. sp. ; DAMAS (7).

Portugal, *Pyrosoma* ; NOBRE (22).

Goree, W. Africa, *Alloeocarpa*, n. sp. ; MICHAELSEN (19).

Naples, *Archiascidia*, n. g. ; JULIN (15).

Ægina, n. sp. ; HARTMEYER (12).

Southern Russia ; SOWINSKY (29).

Red Sea, *Eusynstyela*, n. sp. ; MICHAELSEN (19).

Dar-es-Salâm, *Diandrocarpa*, n. sp. ; MICHAELSEN (19).

East Indian Archipelago, n. spp. ; SLUITER (28).

Amboina, *Salpa*, n. spp. ; APSTEIN (2).

Port Jackson, *Chorizocarpa*, n. sp. ; MICHAELSEN (19).

California, n. sp. ; RITTER (25).

2. *Geological.*

[Vacant.]

III. SYSTEMATIC INDEX†.

Abyssascidia pediculata, 304 metres, p. 27, pl. iv, figg. 13-17 ; SLUITER, Tunic. Siboga i, n. sp.

Alloeocarpa, p. 72, key to spp. p. 73, *fusca*, p. 73, pl. ii, figg. 17-19, *zschau*, p. 88, *incrustans*, p. 88, pl. i, fig. 13, *intermedia*, p. 91, *bridgesi*, p. 92 ; MICHAELSEN, Mt. Mus. Hamburg xxi.

A. hupferi, Goree, W. Africa, p. 77, pl. ii, figg. 14-16, *apolis*, N. W. Europe, p. 81, pl. i, figg. 9-12 ; MICHAELSEN, t. c. n. spp.

Amaroucium fuscum, p. 324 ; HARTMEYER, Zool. Anz. xxvii.

A. vitreum, Ægina, p. 325, text-figg. 1 & 2 ; HARTMEYER, t. c. n. sp.

Archiascidia n. g. (*Archiascidiidae*) *neapolitana*, Bay of Naples ; JULIN, Mt. Stat. Neapel xvi, pp. 489-552, pl. xx, n. sp.

Archiascidiidae, n. fam., near *Clavelinidae*, p. 548 ; JULIN, t. c.

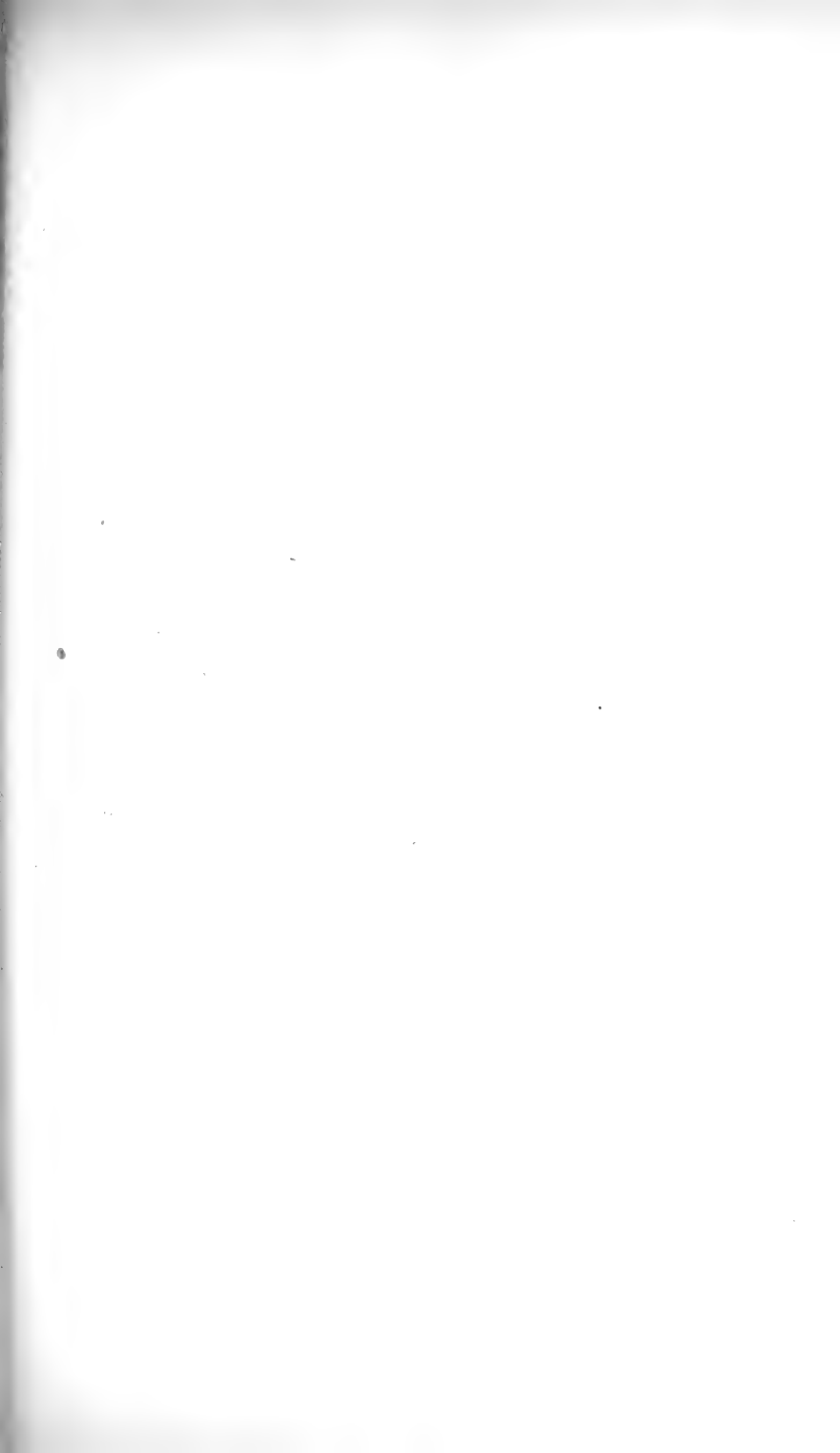
† When the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- Ascidia mentula*, branchia, p. 801; DAMAS, Arch. Biol. xx: *A. divisa*, p. 30, pl. v, fig. 20, *cylindracea*, p. 32, pl. v, figg. 17-19; SLUITER, Tunic. Siboga i.
- A. krechii*, Cape, p. 253, pl. x, fig. 8, pl. xiii, figg. 59-61; MICHAELSEN, Stolid. Ascidién Valdivia: *A. lapidosa*, p. 32, pl. v, figg. 1-5, *spinosa*, p. 34, pl. ii, fig. 5, pl. v, figg. 6-10, *granosa*, p. 36, pl. v, figg. 11-14, *mikreuterica*, p. 37, pl. v, figg. 15 & 16, *aperta*, 90-274 metres, p. 38, pl. ii, fig. 4, pl. vi, figg. 1-5, *austera*, p. 39, pl. vi, figg. 6-8, *perflua*, 274 metres, p. 40, pl. vi, figg. 9-11, *tricuspis*, 560 metres, p. 42, pl. vi, figg. 12 & 13, *bisulca*, p. 43, pl. vi, figg. 14-16, *limpida*, 310 metres, p. 44, pl. ii, fig. 2, pl. vi, figg. 17 & 18, *rhabdophora*, p. 45, pl. vi, figg. 19-23; SLUITER, Tunic. Siboga i: **n. spp.**
- Ascopera bouvetensis*, near Bouvet Id., 439 metres, p. 188, pl. x, fig. 7, pl. xi, figg. 20-22; MICHAELSEN, Stolid. Ascidién Valdivia, **n. sp.**
- Bathyoncus enderbyanus*, p. 226, pl. x, fig. 1, pl. xiii, figg. 45-48, *herdmani*, p. 228, pl. x, fig. 3, fig. 3, pl. xiii, figg. 49-51, off Enderby Land, 4636 metres; MICHAELSEN, t. c.: **n. spp.**
- Bathypera*, **n. g.** (*Molgulidae*), p. 192, *splendens*, off Enderby Land, 4636 metres, p. 192, pl. x, fig. 9, pl. xi, figg. 15-19; MICHAELSEN, t. c. **n. sp.**
- Boltenia bouvetensis*, off Bouvet Id., 567 metres, p. 216, pl. x, fig. 6, pl. xi, figg. 23 & 24; MICHAELSEN, t. c., **n. sp.**
- Botryllus separatus*, p. 100, pl. xv, fig. 22; SLUITER, Tunic. Siboga i, **n. sp.**
- Chelyosoma sibogae*, 275 metres, p. 18, pl. i, fig. 3, pl. iv, figg. 11 & 12; SLUITER, t. c. **n. sp.**
- Chorizocarpa*, **n. g.** (*Polyzoineae*), p. 92, *sidneyensis*, p. 93, pl. ii, figg. 24-26, *michaelseni*, p. 108, pl. ii, figg. 27 & 28; MICHAELSEN, Mt. Mus. Hamburg xxi.
- C. guttata*, Port Jackson, p. 104, pl. ii, figg. 20-23; MICHAELSEN, t. c. **n. sp.**
- Ciona intestinalis*, circulation; ENRIQUES, Arch. zool. ital. ii, pp. 11-17: cross- and self-fertilisation, p. 115; GUTHERZ, Arch. mikr. Anat. lxiv: spermatozoa, p. 15, pl. v, figg. 14-24; RETZIUS, Biol. Untersuch. (n. s.) xi.
- C. indica*, 64-274 metres, p. 24, pl. iv, figg. 1-3; SLUITER, Tunic. Siboga i, **n. sp.**
- Clavelina lepadiformis*, development of branchia, p. 792; DAMAS, Arch. Biol. xx: spermatozoa, p. 16, pl. v, figg. 25-36; RETZIUS, Biol. Untersuch. (n. s.) xi.
- Corella aequabilis*, 13-397 metres, p. 17, pl. iv, figg. 7-10; SLUITER, Tunic. Siboga i, **n. sp.**
- Corynascidia sedens*, 694 metres, p. 20, pl. vii, figg. 6-9; SLUITER, t. c. **n. sp.**
- Culeolus murrayi*, p. 219, pl. x, fig. 5, pl. xi, figg. 27 & 28; MICHAELSEN, Stolid. Ascidién Valdivia.
- C. gigas*, 924 metres, p. 102, pl. i, fig. 1, pl. xii, figg. 1-3, *herdmani*, 204-521 metres, p. 105, pl. xii, figg. 4-9, *thysanotus*, 450 metres, p. 106, pl. ii, fig. 1, pl. xii, figg. 10-13, *annulatus*, 1994 metres, p. 108, pl. xii, fig. 14, pl. xiii, figg. 1-4, *quadrula*, 694 metres, p. 109, pl. xiii, figg. 5-9; SLUITER, Tunic. Siboga i, **n. spp.**
- Cynthia microcosmus*, development of ovarian egg; BLUNTSCHLI, Morphol. Jahrb. xxxii, pp. 391-450, pls. ix & x, 5 text-figg.
- Cynthiopsis* **n. g.** (*Halocynthiidae*) p. 200, *valdivia*, Cape, p. 201, pl. xii, figg. 35-40; MICHAELSEN, Stolid. Ascidién Valdivia, **n. sp.**
- C. herdmani*, p. 208, pl. xii, figg. 41-43; MICHAELSEN, t. c.
- Diandrocarpa*, p. 42, key to spp. p. 43, *botrylloopsis*, p. 43, *monocarpa*, p. 43, forma typica, p. 44, var. *philippinensis* **n. var.** p. 48, pl. i, fig 5; MICHAELSEN, Mt. Mus. Hamburg xxi.

- D. bråkenhielmi*, p. 50, forma typica, Gulf of Mexico, p. 51, var. *stuhlmanni* **n. var.** Dar-es-Sâlam, p. 52, pl. i, fig. 4; MICHAELSEN, t. c. **n. sp.**
- Distaplia magnilarva*, development of branchia, p. 795, anatomy of larva, p. 827; DAMAS, Arch. Biol. xx.
- Dolchinia mirabilis*; KOROTNEFF, Biol. Centrbl. xxiv, p. 61 & figg. and Mt. Stat. Neapel xvi, p. 480 & figg.
- Doliolum*, structure of stolon; KOROTNEFF, Mt. Stat. Neapel xvi, p. 486 & figg.
- Ecteinascidia nexa*, p. 11, pl. iii, figg. 1-5, *multiclathrata*, p. 12, pl. iii figg. 6-8; SLUITER, Tunic. Siboga i, **n. spp.**
- Eugyra molguloides*, p. 111, pl. xiii, figg. 10-15; SLUITER, t. c. **n. sp.**
- Euherdmania*, **n. nom.** for *Herdmania*, Ritter, non Hartmeyer, p. 650; RITTER, Zool. Anz. xxvii.
- Eupera* **n. g.** (*Halocynthiidae*) p. 222, *chuni*, Atlantic, 4990 metres, p. 222, pl. x, figg. 10 & 11, pl. xi, figg. 29-34; MICHAELSEN, Stolid. Ascidien Valdivia, **n. sp.**
- Eusynstyela* **n. nom.** for *Michaelsonia*, van Name, p. 36, key to spp. p. 37, *tincta*, p. 37; MICHAELSEN, Mt. Mus. Hamburg xxi.
- E. hartmeyeri*, Red Sea &c. p. 38, pl. i, fig. 1; MICHAELSEN, t. c. **n. sp.**
- Fritillaria* spp. infested by parasitic Mesozoon *Lohmannella*; NERESHEIMER, Zeitschr. wiss. Zool. lxxvi, pp. 137-166, 2 pls., 6 text-figg.
- Gyndrocarpa*, p. 29, key to spp. p. 30, *placenta*, p. 30, *domuncula*, p. 33; MICHAELSEN, Mt. Mus. Hamburg xxi.
- G. domuncula*, Agulhas Bank and off E. Africa, 100-400 metres, p. 247, pl. x, fig. 14, pl. xiii, fig. 58; MICHAELSEN, Stolid. Ascidien Valdivia : *G. nigricans*, p. 91, pl. xv, figg. 1-4, *maxima*, p. 93, pl. xv, figg. 5-7, *latericius*, p. 94, pl. xv, figg. 8-11, *quadricorniculis*, p. 95, pl. xv, figg. 12 & 13, *purpurea*, p. 96, pl. xv, figg. 14 & 15, *similis*, p. 97, pl. xv, figg. 16 & 17, *systematica*, p. 98, pl. xv, figg. 18-21; SLUITER, Tunic. Siboga i : **n. spp.**
- Halocynthia chilensis*; p. 15, text-fig.; MICHAELSEN, Mt. Mus. Hamburg xxi.
- H. vanhoeffeni*, Cape, p. 197, pl. x, fig. 13, pl. xii, fig. 44; MICHAELSEN, Stolid. Ascidien Valdivia : *H. transversaria*, p. 48, pl. xi, figg. 1-4, *breviramosa*, p. 49, pl. xi, figg. 5-7, *polycarpa*, 487 metres, p. 50, pl. xi, figg. 8 & 9; SLUITER, Tunic. Siboga i : **n. spp.**
- Herdmania* **n. g.** [see also *Euherdmania*], (*Herdmaniidae*) *claviformis*, California, p. 240, pls. xviii & xix; RITTER, Mark Anniversary Volume, **n. sp.**
- Herdmaniidae*, **n. fam.**, p. 239; RITTER, t. c.
- Kükenthalia*, p. 112, *borealis*, p. 113; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Lithonephrya eugyrandia*, p. 164, text-fig. 1; DAMAS, Arch. Biol. xxi.
- Metandrocarpa* **n. g.** (*Polyzoineae*) p. 69, *dura*, p. 70, pl. i, fig. 8; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Microcosmus albidus*, Cape, p. 213, pl. x, fig. 4, pl. xi, figg. 25 & 26; MICHAELSEN, Stolid. Ascidien Valdivia : *M. hemisphaerium*, p. 52, pl. xi, figg. 12-14, *arenaceus*, p. 53, pl. xi, figg. 15-18; SLUITER, Tunic. Siboga i : **n. spp.**
- Molgula echinosiphonica*, branchia, p. 782; DAMAS, Arch. Biol. xx : *M. occulta*, p. 167, text-fig. 2, *ampulloidis*, p. 170, text-fig. 3, *socialis*, p. 174, text-fig. 4, *macrosiphonica*, p. 177, text-fig. 5; DAMAS, op. cit. xxi.
- M. dentifera* (Ed. v. Beneden MS.), Belgium, p. 179, text-fig. 6; DAMAS, t. c. : *M. longipedata*, p. 113, pl. xiv, figg. 1-3, *flagrifera*, p. 114, pl. xiv, figg. 4-6, *crinita*, 69-694 metres, pl. xiii, figg. 16-18, *calvata*, p. 116, pl. xiv, figg. 7-10, *sordida*, 1788 metres, p. 118, pl. xiv, figg. 11-16, *vitrea*, p. 119, pl. xiv, figg. 17-19; SLUITER, Tunic. Siboga i : **n. spp.**

- Monandrocarpa*, **n. g.** (*Polyzoineæ*), p. 53, *tritonis*, Cape, p. 54; MICHAELSEN, Mt. Mus. Hamburg xxi: *M. tritonis*, Cape, p. 240, pl. x, fig. 2, pl. xiii, figg. 55-57; MICHAELSEN, Stolid. Ascidien Valdivia, **n. sp.**
- Oikopleura dioica*, segmentation of tail, p. 747; DAMAS, Arch. Biol. xx.
- Perophera listeri*, development of branchia, p. 785; DAMAS, t. c.
- Phallusia mammillata*, cross- and self-fertilisation, p. 114; GUTHERZ, Arch. mikr. Anat. lxiv.
- Podoclavella molluccensis*, p. 5, *detorta*, p. 6, pl. iii, figg. 18-22, *fecunda*, p. 7, pl. iii, figg. 23 & 24, *procera*, p. 8, pl. iii, figg. 14-17; SLUITER, Tunic. Siboga i : **n. spp.**
- Polyandrocarpa* **n. g.** (*Polyzoineæ*) *lapidosa*, p. 34, pl. i, figg. 2 & 3; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Polyzoa*, p. 55, *opuntia*, p. 58, subsp. *patagonica* **n. subsp.** E. Patagonia, p. 59, subsp. *pictonis*, p. 60, subsp. *waerni*, p. 61, subsp. *opuntia* (*typica*), p. 61, subsp. *gordiana*, p. 63, subsp. *lennoxensis*, p. 64, subsp. *coccinea*, p. 64; MICHAELSEN, Mt. Mus. Hamburg xxi.
- P. reticulata*, p. 65, pl. i, figg. 6a-d, & 7, *fulclandica*, p. 68; MICHAELSEN, t. c. : *P. reticulata*, p. 244; MICHAELSEN, Stolid. Ascidien Valdivia.
- Polyzoineæ*, def. p. 26, key to genera, p. 28; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Pterygascidia* **n. g.** (*Corellidæ*), p. 21, *mirabilis*, 216 metres, p. 21, pl. ii, fig. 3, pl. vii, figg. 1-5; SLUITER, Tunic. Siboga i, **n. sp.**
- Rhabdocynthia latisinuosa*, 204 metres, p. 55, pl. xi, figg. 10 & 11; SLUITER, t. c. **n. sp.**
- Rhodosome papillosum*, p. 26, pl. i, fig. 2, pl. iv, figg. 4-6; SLUITER, t. c.
- Rhopalopsis fusca*, p. 13, pl. ii, fig. 6; SLUITER, t. c.
- Rhopalopsis defecta*, p. 14, pl. iii, figg. 9-11, *tenuis*, p. 15, pl. iii, figg. 12 & 13; SLUITER, t. c. **n. spp.**
- Salpa henseni*, p. 651, pl. xii, fig. 1; APSTEIN, Rev. Suisse Zool. xii.
- S. amboinensis*, p. 651, pl. xii, figg. 2-10, *picteti*, p. 655, pl. xii, figg. 12-14, Amboina; APSTEIN, t. c. **n. spp.**
- Stolonica*, p. 68, *socialis*, p. 69; MICHAELSEN, Mt. Mus. Hamburg xxi.
- Styela gelatinosa*, p. 236; MICHAELSEN, Stolid. Ascidien Valdivia: *S. aurata*, p. 57, pl. vii, fig. 16, *palinorsa*, p. 60, pl. vii, fig. 17; SLUITER, Tunic. Siboga i.
- S. braueri*, off Sumatra, 750 metres, p. 232, pl. x, fig. 12, pl. xiii, figg. 52-54; MICHAELSEN, Stolid. Ascidien Valdivia: *S. sobria*, p. 63, pl. viii, fig. 1, *floccosa*, p. 64, pl. viii, figg. 2-4, *albomarginata*, p. 65, pl. viii, figg. 5-8, *contecta*, p. 66, pl. viii, figg. 9-12, *reniformis*, p. 67, pl. viii, figg. 13-16, *thelyphanes*, p. 68, pl. viii, figg. 17-19, *circummarata*, p. 70, pl. i, fig. 4, pl. ix, fig. 1, *orbicularis*, 538-694 metres, p. 71, pl. i, fig. 5, pl. ix, figg. 2 & 3, *reducta*, p. 72, pl. ix, figg. 4-6, *sedata*, p. 74, pl. ix, figg. 7-10, *incubita*, p. 75, pl. ii, fig. 7, pl. ix, figg. 11-14, *albo-punctata*, p. 76, pl. ix, figg. 15-17, *mæandria*, p. 77, pl. ix, figg. 18-20, *biforis*, p. 78, pl. x, figg. 1-4, *robusta*, p. 79, pl. x, fig. 5, *pustulosa*, p. 80, pl. x, figg. 6-9, *profunda*, 959 metres, p. 81, pl. x, figg. 10-13, *ambonensis*, p. 83, pl. x, figg. 14 & 15, *psammodes*, p. 84, pl. x, figg. 16-19, *glebosa*, p. 85, pl. x, figg. 20-22, *nutrix*, p. 86, pl. x, figg. 23 & 24, *asymmetrica*, p. 87, pl. x, figg. 25 & 26, *cylindrica*, p. 88, pl. xi, figg. 19-21; SLUITER, Tunic. Siboga i : **n. spp.**
- Stylopsis grossularia*, development of branchia, p. 771; DAMAS, Arch. Biol. xx.
- S. scævola*, p. 89, pl. vii, figg. 10-15; SLUITER, Tunic. Siboga i, **n. sp.**







VII. MOLLUSCA.

BY

E. R. SYKES, B.A.

Assisted by E. A. SMITH, I.S.O.

CONTENTS.

| | Page | | Page |
|----------------------------------|------|---|------|
| Introduction | 2 | Opisthobranchiata | 71 |
| I. TITLES | 4 | Nudibranchiata | 71 |
| OBITUARY NOTICES, &c. | 36 | Tectibranchiata (including Pteropoda) | 72 |
| II. BIOLOGY. | | Nucleobranchiata | 73 |
| Anatomy, Physiology, &c. | 37 | Prosobranchiata | 73 |
| Distribution. | | Pectinibranchiata | 73 |
| Geographical. | | Scutibranchiata | 84 |
| Non-Marine. | 41 | Scaphopoda | 86 |
| Marine | 48 | Pelecypoda. | 87 |
| Geological | 52 | Septibranchiata | 87 |
| III. SYSTEMATIC. | | Eulamellibranchiata | 87 |
| Cephalopoda | 59 | Pseudolamellibranchiata | 89 |
| Dibranchiata | 60 | Filibranchiata | 90 |
| Ammonia | 60 | Protobranchiata | 91 |
| Tetrabranchiata | 61 | Amphineura | 91 |
| Gastropoda | 61 | Aplacophora | 91 |
| Pulmonata | 61 | Polyplacophora | 91 |
| Stylommatophora. | 61 | | |
| Basommatophora | 70 | | |

INTRODUCTION.

THOUGH the literature for the year 1904 shows an increase over that for the previous year, this may, in a measure, be accounted for by the fact that the 'Record' has been kept open until a slightly later date.

As in past years, TRYON'S (619) 'Manual' has regularly appeared, Mr Pilsbry being now engaged on the account of the *Achatinidae*. Eleven parts of the 'Conchylien-Cabinet' (426) have been issued, dealing with *Helix*, *Naninidae*, *Agnatha*, and *Chitonidae*. A small portion of BRONN'S (86) 'Klassen, &c.' has appeared, and a further livraison of COSSMANN'S (140) very useful 'Essais de Paléoconchologie.' The latter author has also commenced, with PISSARRO (144), an illustrated 'Iconographie' in which it is proposed to figure all the known fossils of the Paris Basin; the checklist of this fauna compiled by CHÉDÉVILLE (111) has now been completed. HIDALGO (304, 305) has issued a further portion of his 'Obras,' and commenced a catalogue of the Philippine fauna. KOBELT (355) has made progress with his account of the European Marine Mollusca, and has in ROSSMAESSLER (543) given a summary of the non-marine shells, with an index to previous volumes of this work. To SACCO (546) we owe a supplement, with a necessary index, to his Tertiary fauna of Liguria. The Pteropods of the 'Siboga' Expedition have been dealt with by TESCH (610), and the Heteropods collected during several voyages of the 'Princesse-Alice' have received attention from VAYSSIÈRE (627). It may also be mentioned that a list of papers published in the 'Nachrbl. Deutsch. malak. Ges.', complete from the beginning, has been issued.

The papers dealing solely with the descriptions of new forms appear to be slightly less numerous than usual. Amongst those dealing with non-marine Molluscs, we may specially note PILSBRY and HIRASE (495-497) upon Japanese forms. ANDREAE (16) has described the shells collected in Central Asia during Futterer's Expedition, and GUDE (273) has completed his list of the Helicoids of that continent by some additions and corrections. A reprint of MORLET'S (450) papers on the fauna of Indo-China, will prove of service, as also the list of the shells of that region given by FISCHER and DAUTZENBERG (223). SMROTH (567) has published a useful paper on the slugs of Abyssinia; and ROCHEBRUNE and GERMAIN (534) have issued, unfortunately without figures, diagnoses of some Central African shells. A little work, of a popular type, on the Molluscs of Germany, has been written by LEHMANN (393), while TAYLOR (609) has continued his account of the British fauna. Two papers by HUDLESTON (314) and SMITH (575), dealing with the fauna of Lake Tanganyika, in the light of the hypothesis put forward some years ago as to its origin, should not be overlooked.

HUTTON'S (317) 'Index' to the New Zealand fauna, and KEEP'S (345) work on West American shells relate both to marine and non-marine molluscs.

Turning to marine shells, we may notice HÄGG'S (277) account of the forms collected during the Swedish Polar Expedition. JATTA (330) and KWIETNIEWSKI (377) have dealt, respectively, with Mediterranean Cephalopods and Pteropods, while SYKES (604) has commenced a supplemental account to that published of the 'Porcupine' Expedition. Some molluscs from Northern Africa have been catalogued and described by PALLARY (467, 468), though it is doubtful whether the validity of all his new species can be maintained. Some new forms have been described from South Africa by SOWERBY (589), and SMITH (578) has issued a useful addendum to the known fauna, while he has also (579) dealt with some forms from the Bay of Bengal. The Nudibranch fauna of East Africa has been noticed by ELIOT (208-210), and MELVILL (433, &c.) has described some species from the

Persian Gulf, &c. PILSBRY (492, 493) has published diagnoses of new forms from Japan, and STREBEL (599) has added to our knowledge of the fauna of the Magellanic Region. The Australian fauna has, as in past years, formed the subject of papers by HEDLEY (291, &c.), including an interesting note on the 'Bassian Isthmus' as bearing on the present fauna, while he has also (293) described some deep water shells from New Zealand. PRITCHARD and GATLIFF (505, 506) have continued their work on the Victorian fauna. Two papers by HOYLE (312, 313) on Cephalopods may also be noticed, one dealing with some species from Ceylon, and the other with those collected by the 'Albatross.'

Anatomical papers have been numerous and valuable. Development and Embryology have been studied by CASTEEL (99, 100), CONKLIN (133-135), FUJITA (237), GLASER (258), JANSSENS & ELDRINGTON (329), KOSTANECKI (372, 373), LEE (391, 392), LOEB (399), OSBORN (461, 462), SMALLWOOD (570), THESING (611), and WILSON (653) and others. The larval eye of *Chiton* has been dealt with by HEATH (285), while MAZZARELLI (431) has written on the free Opisthobranchiate larva. Statocysts in the Cephalopods have attracted FRÖHLICH (235), and GROSVENOR (269) has issued an interesting paper on nematocysts in Nudibranchs. DISTASO (192) has written on the nervous system of *Oscanius*, JORDAN (342) on that of the Pulmonata, while HYDE (318, 319) has dealt with the nerves and their endings in the eye of *Pecten*. MARCEAU (412, &c.) has published several notes on general anatomy, and of the other papers of this class we may mention ABRIC (1, &c.) and CUÉNOT (159) on Nudibranchs, BOISSEvain (73) on *Dentalium*, FLEURE (226, &c.) on *Haliotis*, GODWIN-AUSTEN (260) on *Eurystoma*, HEATH (286, &c.) on the Aplacophora, HERDMAN (298, &c.) on the pearl oyster, KESTEVEN (350) on *Megalatractus*, MEISENHEIMER (432) on *Desmopterus*, PÖTZSCH (501) on *Planorbis*, RANGLES (509) on some *Trochidae*, SIMROTH (566) on several slugs, VAYSSIÈRE (629) on some Mediterranean Opisthobranchs, and WISSEL (656) on the Chitons collected by Schauinsland.

Turning to the more strictly systematic papers, we may notice DALL'S (171) work on the 'Frog-Shells and Tritons,' with the criticism by PILSBRY & VANATTA (498). With BARTSCH (172), Dr Dall has also issued a review of the *Pyramidellidae*, including a number of new generic names. CASEY (98) has described, unfortunately without any review of the family, a number of genera in the *Pleurotomidae*. Other papers of interest include BARTSCH (35) on *Sonorella*; a list of *Sphaerospira* by FULTON (240), and some notes on *Arcidae* by LAMY (380, &c.). HOYLE (310) has published a key to the recent Dibranchiate Cephalopods, and GRABAU (265) has issued a very interesting work on the phylogeny of *Fusus*.

Variation has continued to prove an attractive subject, DAVENPORT (178, 179) having, separately, and with HUBBARD (180) continued his work on *Pecten*, MALARD (409), METCALF (445), and WELDON (647) having dealt, respectively, with *Patella*, *Neritina*, and *Clausilia*, while the ever-present subject of *Helix nemoralis* has formed the subject of a work by LANG (384).

Pearls and their formation have been written on by DUBOIS (202-205), HERDMAN (298, &c.), and MCINTOSH (404).

Nomenclature, in the broad sense, has been once or twice the subject of serious discussion, and, were the law of the survival of the fittest applied to specific names, one cannot help feeling that a small landshell, rejoicing in the name of *Macrochlamys izushichitojimana* would be somewhat handicapped.

CORRIGENDA IN ZOOLOGICAL RECORD FOR 1903, VOL. XL.

p. 42. Under Mexican Region, insert Costa Rica :—New species of *Bulimulus* and *Helicina* ; PRESTON (427).

p. 56. Transfer entry of *Conulinus* to *Buliminidae* on p. 61.

p. 59. For *Papuina pseudosatsumana* read *P. pseudosatsuma*.

I. TITLES*.

1. ABRIC, P. Sur quelques variations expérimentales de coloration chez les Nudibranches. C.R. Soc. Biol. lvii, pp. 5-7.
2. —. Sur les nématoblasts et les nématocysts des Eolidiens. T. c. pp. 7-9.
3. —. Sur un nouveau Doridien de Wimereux. T. c. pp. 232-234.
4. —. Les cellules agglutinantes des Eolidiens. C.R. Ac. Sci. cxxxix, pp. 611-613.
5. ATRAGHI, C. Inocerami del Veneto. Boll. Soc. geol. Ital. xxiii, pp. 178-199, pl. iv.
6. ALDRICH, T. H. A new Oyster from the Eocene of Alabama. Nautilus xviii, p. 62, pl. iii.
7. ALMERA, J. Una playa de Terreno Cuaternario antiguo en el Llano de San Juan de Vilasar. Mem. Ac. Barcel. iv, No. 39, 11 pp.
8. AMI, H. M. Bibliography of Canadian Geology and Palæontology for the year 1902. Tr. R. Soc. Canada ix, sect. iv, pp. 173-188.
9. ANCEY, C. F. On some non-marine Hawaiian Mollusca. P. Malac. Soc. London vi, pp. 117-128, pl. vii.
10. —. New land snails from South America. Nautilus xvii, pp. 102-104.
11. —. Notes on a few shells. Op. cit. xviii, pp. 21 & 22.
12. —. Report on semi-fossil land shells found in the Hamakua District, Hawaii. J. Malac. xi, pp. 65-71, pl. v.
13. —. Études sur la faune malacologique des îles Sandwich (5^e Partie). J. Conchyl. li, pp. 295-307, pl. xii.
14. —. Notes critiques et synonymiques, xxxi-lxxv. Op. cit. lii, pp. 288-316.
15. ANDREAE, A. Dritter Beitrag zur Binnenconchylienfauna des Miocäns von Oppeln in Schlesien. Mt. Mus. Hildesheim xx, 22 pp., figg.
16. —. Land- und Süsswasserschnecken aus Zentral- und Ostasien. In 'Durch Asien,' by K. Fütterer, iii, pp. 43-90, 1 pl., 1903. [Pp. 43-56 appear to be a reprint of Title No. 12 in 1900.]
17. ANDRUSOW, N. [Geologische Untersuchungen auf der Halbinsel Taman.] Mater. Geol. Russlands xxi, pp. 255-382, pls. ix-xvi.
18. ANON. Les perles. Naturaliste 1904, pp. 22-24, 72-74, 85-87.

* An asterisk prefixed to a title indicates that the Recorder has not seen the work in question.

19. ANTHONY, R. Note sur la forme et la structure des Muscles adducteurs des Mollusques Acéphales. Bull. Soc. Philom. vi, pp. 175-188, figg.
20. —. Organisation et Morphologie des Tridacnides. C.R. Ac. Sci. cxxxviii, pp. 296-298, figg.
21. —. L'acquisition de la forme arrondie chez les mollusques acéphales dimyaires fixés en position pleurothétique. (Note préliminaire.) Arch. zool. exp. Notes ii, pp. clxxiii-clxxxvii, 10 figg.
22. ARKANGHEL'SKII, A. D. Paleotzenoviuya Otlozheniya Saratovskagho Povolzh'ya i ikh fauna. [Fauna of Paleocene Strata of Saratov District.] Mater. Geol. Russlands xxii, pp. 1-207, pls. i-xii.
23. BACCI, P. E. & BERNARDI, I. I Molluschi. Riv. ital. Sci. Nat. xxiv, pp. 33-38, 105-110.
24. *BAKER, F. C. Shells of land and water; a familiar introduction to the study of Mollusks. Chicago, 8vo. [Fide Nautilus xviii, p. 72.]
25. —. The Mollusks of Cedar Lake, Indiana. Nautilus xvii, pp. 112 & 113.
26. —. New varieties of American Limnæas. Op. cit. xviii, pp. 10-12.
27. —. New American Lymnæas. T. c. pp. 62 & 63.
28. —. The arrangement of the Collection of Mollusca in the Chicago Academy of Sciences. Museums J. iii, pp. 354-360, 1 pl.
29. —. The Molluscan Fauna of the Dells of Wisconsin. Tr. Ac. St. Louis xiv, pp. 99-105.
30. —. Notes on *Planorbis truncatus* Miles. T. c. pp. 107-110.
31. —. Spire variation in *Pyramidula alternata*. Amer. Natural. xxxviii, pp. 661-668.
32. BALDWIN, J. W. *Jaminia muscorum* m. *sinistrorsum*. J. Conch. xi, p. 11.
33. BARRON, T. On the occurrence of Lower Miocene Beds between Cairo and Suez. Geol. Mag. i, pp. 603-608.
34. BARTSCH, P. A new *Ashmunella* [*A. townsendi*] from New Mexico. Smithson. Collect. xlvii, pp. 13 & 14.
35. —. Notes on the Genus *Sonorella*, with descriptions of new species. T. c. pp. 187-200, pls. xxviii-xxxiii.
36. —. A new species of *Amphidromus*. T. c. pp. 292 & 293, pl. xlv.
— [See also DALL & BARTSCH (172).]
37. BASEDOW, H. Note on Tertiary Exposures in the Happy Valley District, with description of a new species of *Septifer*. Tr. R. Soc. S. Austral. xxviii, pp. 248-252, pls. xxxv & xxxvi.
38. BAUMBERGER, E. Fauna der untern Kreide im Westschweizerischen Jura. Teil i, pp. 1-60, maps. [Abh. Schweiz. pal. Ges.]
39. BAVAY, A. Descriptions de quelques nouvelles espèces du genre *Pecten* et rectifications. J. Conchyl. lii, pp. 197-206, pl. vi.
40. —. Mission de Créqui-Montfort et Sénéchal de la Grange en Amérique du Sud. Mollusques terrestres et fluviatiles récoltés par le Dr Neveu-Lemaire. Bull. Soc. zool. France xxix, pp. 152-156, 7 figg.

[BAVAY, A.] [See also DAUTZENBERG & BAVAY (176).]

41. BECK, H. Lias bei Vareš in Bosnien. Jahrb. geol. Reichsanst. liii, pp. 473-480.
42. BÉDÉ, P. Sur une nouvelle variété de *Murex trunculus* Linné du Pleistocène Tunisien. Bull. Mus. Paris ix, pp. 372-374.
43. —. Observations sur les Couches Quaternaires de Sfax (Tunisie). T. c. pp. 422-425.
44. —. Nouveau gisement quaternaire au Bas-Meudon, près Paris. Op. cit. x, pp. 24-26.
45. —. Contributions à l'étude de la géologie des environs de Sfax (Tunisie). Feuille Natural. 1904, xxxiv, pp. 243-246, 255-267.
46. — & VINCHON, A. Contribution à l'étude du gisement quaternaire d'Arrest (Somme). Bull. Mus. Paris x, pp. 79-83.
47. BEEDE, J. W. & ROGERS, A. F. Coal Measures Faunal Studies iii. Lower Coal Measures. Kansas Univ. Science Bull. ii, pp. 459-473.
48. BEESTON, H. & WRIGHT, C. E. The land and freshwater Mollusca of Ilfracombe and district. J. Conch. xi, pp. 72-82.
49. BELLEVOYE, A. Les variétés de l'*Helix pomatia*. Bull. Soc. Reims xii, pp. 89-96, 1 pl.
50. BELLINI, R. La faune des Mollusques fossiles néogènes du périmètre du golfe de Naples. Ann. Soc. malac. Belgique xxxviii, pp. 22-37.
51. —. The Freshwater shells of Naples and the neighbourhood. J. Conch. xi, pp. 33-41.
52. BERGH, R. Semper's Reisen im Archipel der Philippinen. Wissenschaftliche Resultate ix, Theil vi, Lief. 1, pp. 1-55, pls. 1-4. [*Nudi-branchiata*.]
- BERNARDI, I. [See BACCI & BERNARDI (23).]
53. BIGOT, A. Description de la Faune des Sables jurassiques supérieurs du Calvados. 1^{re} Partie. Vertébrés, Céphalopodes, et Gastropodes. Mem. Soc. Normandie xxi, pp. 99-108, pl. iv.
54. — & MATTE, H. Catalogue Critique de la collection Defrance, conservée au musée d'Histoire naturelle de Caen. Bull. Soc. Normand. vi, pp. 152-185 ; vii, pp. 243-268.
55. BLACKBURN, E. P. Mollusca of Driffield and neighbourhood. Naturalist 1904, pp. 364-367.
56. BLAKE, J. F. The Silurian Cephalopoda. P. Geol. Ass. xviii, pp. 451-454.
57. —. Notes on the species '*Am. plicatus*' and '*Am. bplex*' of Sowerby. Geol. Mag. i, pp. 162-166.
58. BLANEY, D. Shell collecting days at Frenchman's Bay [Maine]. Nautilus xvii, pp. 109-111.
59. —. The Land-shells of Ironbound Island, Maine. Op. cit. xviii, pp. 45 & 46.
60. BOEHM, G. Beiträge zur Geologie von Niederländisch-Indien. Erste Abteilung: Die Südküsten der Sula-Inseln Taliabu und Mangoli. 1 Abschnitt: Grenzschichten zwischen Jura und Kreide. Palæontogr. Suppl. iv, Lief. 1, 46 pp., 7 pls.

61. BÖHM, J. Ueber cretaceische und eocäne Versteinerungen aus Ferghana. In 'Durch Asien' by K. Futterer, iii, pp. 95-114, 1 pl. [1903].
62. —. Über die obertriadische Fauna der Bäreninsel. Svenska Ak. Handl. xxxvii, No. 3, 76 pp., 7 pls.
63. —. Description de la Faune des Couches de Pereiros. Commun. geol. Portugal v, pp. 1-48, pls. i-iii.
[Translation of Title No. 58, 1901.]
64. BOETTGER, O. Neue Clausilie aus dem oberoligocänen Landschneckenkalk von Hochheim. Nachrbl. Deutsch. malak. Ges. 1904, pp. 79 & 80.
65. —. Eine neue Form der Paludinidengattung *Emmericia* im Mainzer Becken. T. c. pp. 112-116.
66. —. Nekrolog. Geh. Reg.-Rat. Prof. Dr. Eduard von Martens. Zool. Garten xlv, p. 318.
67. —. Nekrolog. Prof. Dr. Rud. A. Philippi. T. c. p. 356.
68. —. Nochmals über Trockenzeitanpassung eines *Ancylus* von Südamerika. Zool. Anz. xxvii, pp. 264-267.
69. —. Beschreibung einer neuen Melanie von den Marshall-Inseln. Zool. Jahrb. Syst. xx, p. 408.
70. —. Landschnecken der Insel Nauru (Marshall-Inseln). T. c. pp. 409-412.
71. BOHN, G. Périodicité vitale des animaux soumis aux oscillations des hautes mers. C.R. Ac. Sci. cxxxix, pp. 610 & 611.
72. —. Oscillations des animaux littoraux synchrones de la marée. T. c. pp. 646-648.
73. BOISSEVAIN, M. Beiträge zur Anatomie und Histologie von *Dentalium*. Jena. Zeitschr. xxxviii, pp. 553-572, pls. xvii-xix.
74. BOLTON, H. On the occurrence of a Shell-bearing Gravel at Dumball Island. P. Bristol. Soc. x, pp. 241-244.
75. —. The Palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii, pp. 378-415, 578-650, 668-689.
- BONNET, A. [See CONTE & BONNET (137).]
76. BONNEVIE, K. *Enteroxenos ostergreni*, ein neuer, in Holothurien schmarotzender Gastropode. Zool. Jahrb. Anat. xv, pp. 731-792, pls. xxxvii-xli, figg. [1902].
77. —. Zur Kenntniss der Spermiogenese bei den Gastropoden (*Enteroxenos ostergreni*). Biol. Centrbl. xxiv, pp. 267-274, 306-310.
78. BORISSJAK, A. Die Pelecypoden der Jura-Ablagerungen in Europäischem Russland. I. *Nuculidae*. Trudui geol. Kom. n.s. 11, 49 pp., 3 pls.
79. BOSANQUET, R. C. An early Purple-fishery. Rep. Brit. Ass. 1903, pp. 817 & 818.
80. BOUTAN, L. Les perles fines, leur origine réelle. Arch. Zool. exp. ii, pp. 47-90, pl. iii, and 7 figg.
81. BRADLEY, H. C. The occurrence of Zinc in certain Invertebrates. Science xix, pp. 196 & 197.
82. —. The occurrence of Taurin in Invertebrate Muscle. Op. cit. xx p. 25.

83. BRINDLEY, H. H. Mollusca. In 'Handbook Nat. Hist. Cambridge-shire,' 1904, pp. 114-138, 257 & 258.
84. BRIOT, A. Sur la sécrétion rouge des Aplysiens. C.R. Soc. Biol. lvi, pp. 899-901.
85. BROILI, F. Die Fauna der Pachycardientuffe der Seiser Alp. Palæontogr. I, pp. 145-227, pls. xvii-xxvii.
86. BRONN'S Klassen und Ordnungen des Thier-Reichs.....Bd. III. Mollusca.....bearbeitet von H. SIMROTH. Lief. 66-74. Abth. II, pp. 601-712, pls. xliii-liv. [Relates to Gastropoda.]
87. BROWNE, T. J. Report on an enquiry into the conditions under which oysters and certain other edible Molluscs are cultivated and stored on the coast of Ireland, &c. Rep. Local Government Board Ireland. Dublin, 1904, 82 pp., 34 maps.
88. BRUSINA, S. Iconographia Molluscorum fossilium in Tellure tertiaria Hungariae, Croatiae, Slavoniae, Dalmatiae, Bosniae, Herzegovinae, Serbiae, et Bulgariae inventorum. Zagreb (Agram), 4to, 10 pp., 30 pls. 1902.
89. ——. Zur Rettung unserer Mollusken-Fauna. Nachrbl. Deutsch. malak. Ges. 1904, pp. 157-168.
90. BUCKMAN, S. S. A monograph of the Inferior Oolite Ammonites of the British Islands. Part xii, Supplement. I, Revision of, and addition to, the *Hildoceratidae*, pp. lxxv-clxviii, pls. xv-xix. [Pal. Soc. Mon.]
91. BUDINGTON, R. A. Nervous Regulation of the Heart of *Venus mercenaria*. Biol. Bull. vi, pp. 311 & 312.
92. BULLEN, R. A. Descriptions of new species of non-marine shells from Java, and a new species of *Corbicula* from New South Wales. P. Malac. Soc. London vi, pp. 109-111, pl. vi.
93. BURNE, R. H. Notes on the nervous system of the Pelecypoda. P. Malac. Soc. London vi, pp. 41-47, figg.
94. ——. Summary of the discussion at the meeting held on June 10th upon the two following questions of nomenclature. I. A species is described as belonging to genus A and is subsequently transferred to genus B, in which there is already a species bearing the same name. Which species, assuming that the one described in genus A is prior in date, requires a new name? II. A form is described as a variety of one species, and subsequently is described as a new species, with a new name. Which name stands? T. c. pp. 130-133.
95. CAMPANA, D. DEL. Faunula del Giura Superiore di Collalto di Solagna (Bassano). Boll. Soc. geol. Ital. xxiii, pp. 239-269, pl. vii.
96. CARLSON, A. J. The rhythm produced in the resting heart of Molluscs by the stimulation of the Cardio-accelerator nerves. Amer. J. Physiol. xii, pp. 55-66.
- CARPENTER, G. D. H. [See NAPIER & CARPENTER (453).]
97. CARTER, C. S. Mollusca of Hubbard's Valley. Naturalist 1904, pp. 60-63.
98. CASEY, T. L. Notes on the *Pleurotomidae* with description of some new Genera and Species. Tr. Ac. St. Louis xiv, pp. 123-170.

99. CASTEEL, D. B. The development of the germ layers in a Nudibranch Mollusc. Amer. Natural. xxxviii, pp. 505 & 506.
100. —. The cell-lineage and early larval development of *Fiona marina*, a Nudibranch Mollusk. P. Ac. Philad. 1904, pp. 325-405, pls. xxi-xxxv.
101. CAZIOT, E. On the dispersal of Mollusca. P. Malac. Soc. London vi, p. 3.
102. —. Études sur quelques espèces de la Région circa-Méditerranéenne. Ann. Soc. Linn. Lyon l, pp. 135-158.
103. —. *Helix niciensis*. Note complémentaire. Feuille Natural. 1903, xxxiv, p. 35.
104. —. Faune du tumulus de Saint-Christophe près Grasse (Alpes-Maritimes). Op. cit. 1904, xxxiv, pp. 221-224.
105. —. Note sur l'*Helix aperta*. Op. cit. 1904, xxxv, pp. 6 & 7.
106. —. Complément à l'étude de la faune Corse. Mem. Soc. zool. France xvi, pp. 33-40, 5 figg.
107. —. Étude sur quelques coquilles de la région circa-Méditerranéenne: *Helix vermiculata*. Bull. Soc. zool. France xxix, pp. 19-23.
— [See also DEPÉRET & CAZIOT (188).]
108. CHAPMAN, F. On a collection of Upper Palæozoic and Mesozoic Fossils from West Australia and Queensland, in the National Museum, Melbourne. P. Soc. Victoria xvi, pp. 306-335, pls. xxvii-xxx.
109. —. New or little-known Victorian fossils in the National Museum. Some Palæozoic Pteropoda. T. c. pp. 336-342, pl. xxxi.
110. CHASTER, G. W. Irish Field Club Union. Conference and excursion at Sligo. Marine Mollusca. Irish Natural. xiii, p. 193.
CHATELET, C. [See FISCHER & CHATELET (222).]
111. CHÉDEVILLE, J. Liste generale et synonymique des fossiles tertiaires du Bassin de Paris, pp. 375-438. In Bull. Soc. Elbeuf xxii.
112. —. Description de fossiles nouveaux du Bassin Tertiaire de Paris. T. c. pp. 101-106, 1 pl.
113. —. Fossiles nouveaux du Bassin de Paris. Feuille Natural. 1904, xxxiv, pp. 85-87, pl. iv.
114. CHUN, C. Jugendliche Octopoden, deren gesammte Körperoberfläche einen Besatz von Borstenbüscheln aufweist. Verh. Deutsch. zool. Ges. xiv, pp. 243 & 244.
115. CLAPP, G. H. A new *Omphalina* from Alabama. Nautilus xviii, p. 30.
116. —. New forms of *Polygyra* from Alabama. T. c. pp. 85 & 86.
117. CLARK, W. B. & MARTIN, G. C. Mollusca. In 'Maryland Geological Survey, Eocene,' pp. 122-203, pls., 1901.
118. CLARKE, J. M. A Fauna Siluriana Superior do Rio Trombetas, Estado do Pará, Brazil. Arch. Mus. Rio Janeiro x, pp. 1-48, 2 pls., 1899.
119. —. Molluscos Devonianos de Estado do Pará, Brazil. T. c. pp. 49-174, 6 pls., 1899. [Inserted as not seen in 1902.]

120. CLESSIN, S. Pisidien aus Zentralasien. In 'Durch Asien,' by K. Futterer, iii, pp. 81 & 82 [1903].
— [See also MARTINI & CHEMNITZ (426).]
121. COCKERELL, T. D. A. *Agriolimax agrestis* in Colorado. *Nautilus* xviii, pp. 90 & 91.
COLE, L. J. [See PEARL & COLE (472).]
122. COLLET, P. Notices géologiques et paléontologiques pour servir à la Géologie de l'Arrondissement de Sainte-Ménéhould, avec la description des fossiles nouveaux par MM. P. Fliche, A. Peron, et J. Lambert. *Bull. Soc. Reims* xii, pp. 17-87, figg.
123. COLLIE, G. L. Ordovician section near Bellefonte, Pennsylvania. *Bull. Geol. Soc. Amer.* xiv, pp. 407-420, pl. lix.
124. COLLIER, E. *Helix nemoralis* m. *sinistrorsum* in Switzerland. *J. Conch.* xi, p. 57.
125. —. The Conchological differences between the genera and sections of the *Pupinidæ*. *T. c.* pp. 110-115.
126. COLLINGE, W. E. Some remarks on the Genera *Damayantia* Issel, *Collingea* Simr., and *Isselentia* Cllge. *P. Malac. Soc. London* vi, pp. 9-12.
127. —. Notes on Slugs and slug-like Molluscs. 5. On a new and interesting genus of Slugs. 6. *Arion subfuscus* from the Orkney Isles. 7. Absence of the male generative organs in *Arion hortensis* Fér. *J. Malac.* xi, pp. 14 & 15.
128. —. Description of a new species of *Ariunculus* from Algeria. *T. c.* p. 47.
129. —. Note on *Parmacella deshayesii* Moq.-Tand. *T. c.* p. 49.
130. —. Note on two varieties of *Arion subfuscus* Drap. *T. c.* p. 98.
131. —. Land and Freshwater Mollusca [of the Faroes]. *P. Phys. Soc. Edinb.* 1902-1904, pp. 153 & 154.
132. COLTON, H. S. Land shells of Mt. Desert, Maine. *Nautilus* xvii, pp. 99-102.
133. CONKLIN, E. G. Organ-forming Germ Regions in the Eggs of Ascidi-ans and Snails. *Amer. Natural.* xxxviii, pp. 501 & 502.
134. —. The Cause of Inverse Symmetry. *Anat. Anz.* xxiii, pp. 577-588, figg. [1903].
135. —. Experiments on the origin of the cleavage centrosomes. *Biol. Bull.* vii, pp. 221-226, 12 figg.
136. CONNER, C. H. *Margaritana margaritifera* in Pennsylvania. *Nautilus* xviii, p. 91.
137. CONTE, A. & BONNET, A. Sur un Nématode nouveau (*Angiostoma helicis*, n. sp.) Parasite de l'appareil génital d'*Helix aspersa* Müll. *Ann. Soc. Linn. Lyon* l, pp. 63-68, figg. [Compare Title 109, last year.]
138. COOKE, A. H. Note on *Testacella haliotide* Drap. *J. Malac.* xi, p. 49.
139. COOKE, C. M. Distribution and Variation of *Achatinella multizonata* from Nuuanu Valley. *Pap. B. P. Bishop Mus.* ii, pp. 65-76, table.

140. COSSMANN, M. Essais de Paléoconchologie comparée. Livr. vi. Paris, 8vo, 151 pp., 9 pls.
141. —. Observations sur quelques coquilles crétaciques recueillies en France. C.R. Ass. Franc. 1903, Pt. ii, pp. 626–639, pls. ii & iii.
142. —. Note sur l'Infralias de la Vendée et des Deux-Sèvres (Suite). II, Pélécypodes. Bull. Soc. geol. France iii, pp. 497–537, pls. xvi–xviii.
143. —. Mollusques Éocéniques de la Loire-Inférieure. Tom III, fasc. 1. Bull. Soc. Ouest France xiv, pp. 147–213, 8 pls.
144. — & PISSARRO, G. Iconographie complète des Coquilles fossiles de l'Éocène des environs de Paris. Fasc. i, pls. i–xvi. Paris, 1904.
145. — & —. Faune Éocénique du Cotentin (Mollusques), 5^e Article. Bull. Soc. geol. Normand. xxiii, pp. 11–30, 5 pls.
COTTER, J. C. B. [See DA COSTA (160).]
146. COUFFON, O. Étude critique sur les Faluns de Haguineau. Bull. Soc. Angers xxxiii, pp. 35–94.
147. COUTAGNE, G. Des caractères polytaxiques chez les espèces à l'état sauvage. C.R. Ac. Sci. cxxxviii, pp. 1521–1523.
148. COUTURIER, M. Catalogue des Coquilles Paléarctiques de la Collection Hagenmüller. Ann. Mus. Marseille viii, pp. 19–67.
149. COUVREUR, E. Sur le sang des Gastéropodes marins. Ann. Soc. Linn. Lyon xlix, pp. 79–81.
150. CREMA, C. Sul piano Siciliano nella Valle del Crati (Calabria). Bol. Com. geol. Ital. xxxiv, pp. 245–270, pls. iii & iv.
151. CRICK, G. C. Description of a Nautiloid, *Pleuromutilus pulcher*, n. sp., from the Carboniferous Rocks of England. P. Malac. Soc. London vi, pp. 15–20, pl. ii.
152. —. On a new form of Carboniferous Nautiloid (*Amphoreopsis paucicamerata*) from the Isle of Man. T. c. pp. 134–137, pl. viii.
153. —. Note on a remarkable Belemnoid from the chalk of Flam-borough Head. P. Geol. Ass. xviii, pp. 283–285.
154. —. Note on *Pericyclus fasciculatus* M'Coy, sp. Geol. Mag. i, pp. 27–33, figg.
155. —. Notes on the Cephalopoda belonging to the Strachey Collection. T. c. pp. 61–70, 115–124.
156. —. Note on *Actinocamax* Miller, its identity with *Atractilites* Link. T. c. pp. 407–410.
157. —. Note on two Cephalopods obtained by Lieut.-Col. Skinner, R.A.M.C., from the Valley of the Tochi River on the north-west frontier of India. T. c. pp. 490–493, figg.
158. CSIKI, E. Három magyarországi új *Clausilia*. Ann. Mus. Hungar. i, pp. 107 & 108 [1903].
159. CUENOT, L. Contributions a la Faune du Bassin d'Arcachon. III. Doridiens. Trav. Lab. Arcachon vii, pp. 1–22, 1 pl.
160. DA COSTA, F. A. P. Mollusques Tertiares du Portugal. Planches de Céphalopodes, Gastéropodes, et Pélécypodes laissées par F. A. PEREIRA DA COSTA, accompagnées d'une explication sommaire et d'une esquisse géologique par G. F. DOLLFUS, J. C. BERKELEY COTTER, et J. P. GOMES. Commis. geol. Portugal xlvi, expln. & 28 pls., 1904.

161. DA COSTA, S. I. Descriptions of new species of Land-shells from Central and South America. P. Malac. Soc. London vi, pp. 5 & 6, pl. i.
162. DACQUÉ, E. Beiträge zur Geologie des Somalilandes. I. Theil: Untere Kreide. Beitr. Pal. Oesterr.-Ung. xvii, pp. 7-20, pls. ii & iii.
163. DAINELLI, G. Contributo allo studio dell' Eocene medio dei dintorni di Ostrovisa in Dalmazia. Atti Acc. Lincei xiii, Pt. 2, pp. 277-282.
164. —. La fauna Eocenica di Bribir in Dalmazia. Parte Prima. Palæontogr. ital. x, pp. 141-273, pls. xv-xvii.
165. DALL, W. H. Notes on the Genus *Ampullaria*. J. Conch. xi, pp. 50-55.
166. —. Die Systematik der Cyrenacea. Nachrbl. Deutsch. malak. Ges. 1904, pp. 74-76. [Reprinted from Title no. 135 of last year.]
167. —. *Gundluchia* and *Ancylus*. Nautilus xvii, pp. 97 & 98.
168. —. Notes on the nomenclature of the Pupacea and associated forms. T. c. pp. 114-116.
169. —. A new species of *Periploma* from California. T. c. pp. 122 & 123.
170. —. A singular Eocene *Turbinella*. Op. cit. xviii, pp. 9 & 10.
171. —. An historical and systematic review of the Frog-shells and Tritons. Smithson. Collect. xlvii, pp. 114-144.
172. — & BARTSCH, P. Synopsis of the Genera, Subgenera, and sections of the Family *Pyramidellidae*. P. Soc. Washington xvii, pp. 1-16.
173. DAUPHIN, L. C. Faunule malacologique de Brides-les-Bains et ses environs (Savoie). Echange xx, pp. 95 & 96.
174. DAUTZENBERG, P. Récolte malacologique de M. Weyers dans le Sultanat de Sambas (Bornéo). Ann. Soc. malac. Belgique xxxviii, pp. 3-8, figg.
175. —. Variations et cas tératologiques chez le *Murex brandaris* Linné. J. Conchyl. lii, pp. 285-287, pl. viii.
176. — & BAVAY, A. Description d'un *Amussium* nouveau dragué par le Siboga dans la mer de Celebes. T. c. pp. 207-211, figg.
177. — & DOLLFUS, G. F. Études critiques sur la nomenclature avec examen des genres *Pectunculus* et *Glycimeris*. T. c. pp. 109-122.
— [See also DOLLFUS & DAUTZENBERG (195), FISCHER & DAUTZENBERG (223).]
178. DAVENPORT, C. B. The animal ecology of the Cold Spring Sand Spit. Decenn. Publ. Chicago Univ., 22 pp., 1903.
179. —. A comparison of some Pectens from the East and the West coasts of the United States. Mark Annivers. Vol., New York, 1903, pp. 121-136, pl. ix.
180. — & HUBBARD, M. E. Studies in the evolution of *Pecten*. iv. Ray variability in *Pecten varius*. J. Exper. Zool. i, pp. 607-616.
181. DAVIS, C. A. Notes on the Mollusca of the Bermuda Islands. Nautilus xvii, pp. 125-130, pl. iv.
182. DEAN, B. Japanese oyster culture. Bull. U. S. Fish Comm. xxii, pp. 17-37, 4 pls., 27 figg.

183. DEAN, J. D. Note on the Land and Freshwater Shells of Lancaster. J. Conch. xi, p. 47.
184. DEECKE, W. Über ein reichliches Vorkommen von Tertiär-gesteinen im Diluvialkies bei Polzin, Hinterpommern. Zeitschr. Deutsch. geol. Ges. lvi, pp. 53-57.
185. DELGADO, J. F. N. Faune Cambrienne du Haut-Alemtejo (Portugal). Commis. geol. Portugal v, pp. 307-374, pls.
186. DELHEID, D. Un gîte de *Rostellaria ampla*. Ann. Soc. malac. Belgique xxxviii, Bull. pp. cxlv & cxlvi.
187. DENNANT, J. & KITSON, A. E. Catalogue of the described species of fossils (except Bryozoa and Foraminifera) in the Cainozoic Fauna of Victoria, South Australia, and Tasmania. Rec. Geol. Surv. Victoria i, pp. 89-147, map.
188. DEPÉRET, C. & CAZIOT, E. Note sur les gisements pliocènes et quaternaires marins des environs de Nice. Bull. Soc. geol. France iii, pp. 322-347.
189. DHÉRE, C. Présence de cuivre et de fer dans l'œuf de la sèche. C.R. Soc. Biol. lvii, pp. 209 & 210.
190. DIENER, C. Note on *Cyclolobus haydeni* Diener. Rec. Geol. Surv. India xxxi, pp. 56-58.
191. —. Permian Fossils of the Central Himalayas. Mem. geol. Surv. India, Ser. 15, Vol. i, Pt. 5, 204 pp., 9 pls.
192. DISTASO, A. Sul sistema nervoso di *Oscanius membranaceus* e *Pleurobranchia meckeli*. Anat. Anz. xxv, pp. 535-541, 4 figg.
193. DOLLFUS, G. F. Faune Malacologique du Miocène supérieur de Rennes (étage Redonien, gîte d'Apigné) (Ille-et-Vilaine). C.R. Ass. Franc. 1903, Pt. ii, pp. 656-663.
194. —. Les Calcaires et Sables Tertiaires du Bassin de la Loire. Bull. Soc. geol. France iv, pp. 113-118.
195. — & DAUTZENBERG, P. Conchyliologie du Miocène moyen du Bassin de la Loire. Première partie: Pélécypodes (Suite). Pp. 107-162, pls. vi-x. Mem. Soc. geol. France, Pal. xi, fasc. 3 & 4.
— [See also DA COSTA (160), DAUTZENBERG & DOLLFUS (177).]
196. DONCIEUX, L. Note sur les terrains Tertiaires et le Quaternaire marin du sud-est du Département de l'Aude. Bull. Soc. geol. France iii, pp. 695-710.
197. DREGER, J. Die Lamellibranchiaten von Häring bei Kirchbichl in Tirol. Jahrb. geol. Reichsanst. liii, pp. 253-284, pls. xi-xiii.
198. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). Palæontogr. l, pp. 229-288, pls. xxviii-xxxii.
199. DREW, G. A. The Lamellibranch Nervous System. Amer. Natural. xxxviii, p. 508.
200. —. The anatomy and embryology of *Pecten tenuicostatus*. Biol. Bull. vi, p. 307.
201. DUBOIS, R. Sur le sens de l'olfaction de l'Escargot. C.R. Soc. Biol. lvi, pp. 198 & 199.
202. —. A propos de diverses communications récentes sur les perles fines. T. c. pp. 438-441.

203. [DUBOIS, R.] Application des rayons X à la recherche des perles fines. C.R. Ac. Sci. cxxxviii, pp. 301 & 302.
204. —. Sur les perles de nacre. T. c. pp. 583 & 584.
205. —. Sur le mécanisme sécrétoire producteur des perles. T. c. pp. 710-712.
206. DUDINSZKY, E. Kisebb közlemények. Rendellenes kagylóhéjak. Allatt. Kozl. Magyar Tars. iii, p. 112.
207. ELIOT, C. N. E. On the *Doris planata* of Alder & Hancock. P. Malac. Soc. London vi, pp. 180 & 181.
208. —. On some Nudibranchs from East Africa and Zanzibar. Part III. *Dorididae Cryptobranchiata*, I. P. Zool. Soc. London 1903, ii, pp. 354-385, pls. xxxii-xxxiv.
209. —. On some Nudibranchs from East Africa and Zanzibar. Part IV. *Dorididae Cryptobranchiata*, II. Op. cit. 1904, i, pp. 380-406, pls. xxiii & xxiv.
210. —. On some Nudibranchs from East Africa and Zanzibar. Part v. Op. cit. 1904, ii, pp. 83-105, pls. iii & iv.
- ELRINGTON, G. A. [See JANSSENS, F. A. & ELRINGTON, G. A. (329).]
211. ETHERIDGE, R. Cretaceous fossils of Natal, collected by Mr William Anderson, Government Geologist. Part I. The Umkwelane Hill Deposit. Rep. geol. Surv. Natal ii, pp. 71-93.
212. —. On the occurrence of a Lituitean in the Upper Silurian Rocks of Bowning, New South Wales. Rec. Austral. Mus. v, pp. 75-77, pl. viii.
213. —. On the occurrence of the Genus *Ptychoceras*(?) and other additional fossils in the Cretaceous Beds of the Northern Territory of South Australia. T. c. pp. 108-115, pls. xiv & xv.
214. —. Notes on Australian Cretaceous Fossils. T. c. pp. 248-252.
215. —. An Endophyte (*Stichus mermisoides*) occurring in the test of a Cretaceous Bivalve. T. c. pp. 254-257, pls. xxx & xxxi.
216. EVANS, W. Note on *Limax tenellus* (Müll.), with exhibition of living examples from the "Forth" Area. P. Phys. Soc. Edinb. xvi, pp. 22-24.
217. FALKNER, C. & LUDWIG, A. Beiträge zur Geologie der Umgebung St Gallens. Jahrb. St. Gall. Ges. 1901-1902, pp. 474-620.
218. FERRISS, J. H. Southwestern Shells. Nautilus xviii, pp. 49-54.
219. FISCHER, H. Remarques sur le *Columbella terpsichore* Sowerby et sur l'*Euchelus erythraeensis* Sturany. J. Conchyl. lii, pp. 59 & 60.
220. —. Le R. P. Heude. T. c. pp. 372-376.
221. —. Mollusques. Considerations générales. Mission Pavie Indo-Chine, Études Diverses iii, pp. 339-349.
222. —, & CHATELET, C. Description d'une espèce nouvelle du Genre *Glandina* [*G. lamyi*, Mexico]. J. Conchyl. li, pp. 321 & 322, pl. xiii.
223. — & DAUTZENBERG, P. Catalogue des Mollusques terrestres et fluviatiles de l'Indo-Chine orientale cités jusqu'à ce jour. Mission Pavie Indo-Chine, Études Diverses iii, pp. 390-450.
224. FISCHER, H. Neue Aufschlüsse im Weichbild der Stadt Frankfurt am Main. Ber. Senckenberg. Ges. 1904, pp. 47-58.

225. FISHER, W. K. The anatomy of *Lottia gigantea*. Zool. Jahrb. Anat. xx, pp. 1-66, 4 pls., 13 figg.
226. FLEURE, H. J. Zur Anatomie und Phylogenie von *Haliotis*. Jena. Zeitschr. xxxix, pp. 245-322, pls. ix-xiv.
227. —. Some points in the history of the Ormer (*Haliotis tuberculata*). Rep. Guernsey Soc. 1903, pp. 227-233.
228. —. On the evolution of topographical relations among the Docoglossa. Tr. Linn. Soc. London ix, pp. 269-290, pls. xv-xvii.
229. FLICK, — & PERVINQUIÈRE, —. Sur les Plages Soulevées de Monastir et de Sfax (Tunisie). Bull. Soc. geol. France iv, pp. 195-206.
230. FONT Y SAGUÉ, N. Moluscos recogidos en Rio de Oro (Sahara español). Bol. Soc. espan. iii, pp. 209-211.
231. FOURTAU, R. Contribution à l'étude de la faune crétacique d'Égypte. Bull. Inst. Egypt iv, pp. 231-349, 5 pls.
232. FOX-STRANGWAYS, C. The Geology of the Oolite and Cretaceous Rocks south of Scarborough. Mem. geol. Surv. U. K. 1904, 119 pp.
233. FRIERSON, L. S. Notes on the structure of the shells of *Unio*. Nautilus xvii, pp. 98 & 99.
234. —. Observations on the Genus *Quadrula*. T. c. pp. 111 & 112.
235. FRÖHLICH, A. Studien über die Statocysten. I. Versuche am Cephalopoden und Einschlägiges aus der menschlichen Pathologie. Arch. ges. Physiol. cii, pp. 415-472, 20 figg.
236. FUCINI, A. Cefalopodi Liassici del Monte di Cetona. Parte Quarta. Palæontogr. ital. x, pp. 275-298, pls. xviii-xxi.
237. FUJITA, T. On the formation of the germinal layers in Gastropoda. J. Coll. Tokyo xx, No. 1, 42 pp., 3 pls.
238. FULTON, H. Descriptions of some new Species and Varieties of *Catantulus* from the Collection of the late Hugh Nevill, Esq. Ann. Nat. Hist. xiii, pp. 452 & 453.
239. —. Notes on *Thersites* (*Hadra*) *bellendenkerensis* Braz. and *beddomæ* Braz. J. Malac. xi, p. 1.
240. —. A critical list of the *Sphaerospira* section of *Thersites*. T. c. pp. 2-11, pl. i.
241. —. On some new species of *Melania* and *Jullienia* from Yunnan and Java. T. c. pp. 51 & 52, pl. iv.
242. —. On a collection of land shells from Gebi Island, Moluccas, with descriptions of new species. T. c. pp. 53 & 54, pl. iv.
243. —. Note on *Leptopoma crenilabre* Strubell. T. c. p. 55, pl. iv.
244. FUSCO, A. Sopra un Gasteropodo fossile e sinistrorso rinvenuto nella Piana di Catania. Boll. Naturalista xxiv, pp. 33 & 34.
GATLIFF, J. H. [See PRITCHARD & GATLIFF (505 & 506).]
245. GAUTIER, C. & VILLARD, J. Recherches sur le pigment vert jaune du tégument des Aplysies. C.R. Soc. Biol. lvi, pp. 1037-1039.
246. *GEMMELLARO, G. G. I Cefalopodi del Trias Superiore della Regione occidentale della Sicilia. Palermo, 1904.
247. GERMAIN, L. Considérations générales sur la Faune malacologique vivante du département de Maine-et-Loire. C.R. Ass. Franc. 1903, Pt. ii, pp. 764-773.

248. [GERMAIN, L.] Sur quelques "Helices Xerophiliennes" du groupe *Variabiliana* recueillies aux environs de Dieppe (Seine-Inférieure). Feuille Natural. 1904, xxxiv, pp. 102 & 103.
249. —. Catalogue des Mollusques terrestres et fluviatiles des environs d'Angers et du département de Maine-et-Loire. Bull. Soc. Ouest France xiv, pp. 1-125, 2 pls., figg.
- [See also ROCHEBRUNE & GERMAIN (534).]
250. GEYER, —. Beiträge zur Vitrellenfauna Württembergs. Jahresh. Ver. Württemb. lx, pp. 298-334, pls. viii-xiv.
251. GIARD, A. Sur la prétendue nocivité des huitres. Paris, 8vo, 29 pp. From Rev. d'Hygiène, Aug. 1904.
252. —. Sur la synonymie de la petite Pintadine de la Méditerranée. C.R. Soc. Biol. lvi, pp. 255-257.
253. —. Les précurseurs des idées modernes sur l'origine des perles. (Androsthène, Rondelet et Bohadsch.) Feuille Natural. 1904, xxxiv, pp. 45-49.
254. *—. Controverses transformistes. Paris, 1904, 8vo, 179 pp., figg. [Fide J. Conchyl. lii, p. 325.]
255. Girty, G. H. New Molluscan Genera from the Carboniferous. P. U. S. Mus. xxvii, pp. 721-736, pls. xlv-xlvi.
256. —. The Carboniferous formations and faunas of Colorado. Pap. U. S. Geol. Survey xvi, 546 pp., 10 pls.
257. —. The typical species and generic characters of *Aviculipecten* McCoy. Amer. Geol. xxxiii, pp. 291-296.
258. GLASER, O. C. Excretory Activities in the nuclei of Gastropod Embryos. Amer. Natural. xxxviii, pp. 513-516, figg.
259. GLENN, L. C. Pelecypoda. In "Maryland Geol. Survey, Miocene," pp. 274-402, pls.
260. GODWIN-AUSTEN, H. H. On the Genus *Eurystoma* of Albers (type *vittata* Müller), its anatomy and reference to other Indian species. P. Malac. Soc. London vi, pp. 48-50, pl. iv.
261. —. Note on *Damayantia smithi* Collinge & Godwin-Austen. T. c. p. 133.
262. GOLDFUSS, O. Beiträge zur Molluskenfauna Schlesiens. Nachrbl. Deutsch. malak. Ges. 1904, pp. 61-73, 128.
- GOMES, J. P. [See DA COSTA (160).]
263. GOPPELSROEDER, F. Studien über die Anwendung der Capellaranalyse. Verh. Ges. Basel xviii, 198 pp., pls. [Cf. p. 158.]
264. GORKA, A. Az eheto csiga (*Helix pomatia* L.) nyálmirigyének élettani szerepe. [Über die physiologische Funktion der Speicheldrüsen von *Helix pomatia* L.] Allat. Kozl. Magyar Tars. iii, pp. 211-226.
265. GRABAU, A. W. Phylogeny of *Fusus* and its allies. Smithsonian. Collect. xlv, 192 pp., 18 pls.
266. GREENE, C. List of the Marine Mollusca recorded as found in Suffolk. P. Suffolk Inst. xi, pp. 320-323.
267. —. Additions and corrections to Suffolk Land and Freshwater Shells. T. c. pp. 324 & 325.

268. GRIERSON, P. H. Notes on the Mollusca of North Cork and Waterford. Irish Natural. xiii, pp. 164-169.
269. GROSVENOR, G. H. On the Nematocysts of Aeolids. P. R. Soc. London lxxii, pp. 462-486.
270. GROSSOUVRE, A. DE. Quelques observations sur les Bélemnites et en particulier sur celles des Corbières. Bull. Soc. Aude xiv, pp. 71-78.
271. GUDE, G. K. Report on a small collection of Helicoids from British New Guinea. P. Malac. Soc. London vi, pp. 114-116, fig.
272. —. Note on *Corilla erronea* Nev. MS. J. Malac. xi, pp. 45 & 46, figg.
273. —. The Helicoid Land Shells of Asia. Corrections and Additions. T. c. pp. 93-97.
274. GULICK, A. The fossil land shells of Bermuda. P. Ac. Philad. 1904, pp. 405-425, pl. xxxvi.
275. GULICK, J. T. Divergence under the same environment as seen in the Hawaiian Snails. Amer. Natural. xxxviii, pp. 494-496.
276. GURICH, G. Das Devon von Debnik bei Krakau. Beitr. Pal. Oesterr.-Ung. xv, pp. 127-164, pls. xiv & xv, figg.
277. HÄGG, R. Mollusca und Brachiopoda gesammelt von der Schwedischen zoologischen Polarexpedition nach Spitzbergen, dem nord-östlichen Grönland und Jan Mayen im J. 1900. Archiv. Zool. ii, pp. 31-66, pl. i.
278. —. Two new Opisthobranchiate Mollusca from the Red Sea. Results Swedish Zool. Exped. Egypt and the White Nile 1901, under L. A. JÄGERSKIÖLD. Upsala, 1904, 16 pp., pl. i.
279. —. Land and fresh-water Mollusca from the Upper Nile (Shendy—Fashoda). T. c. 26 pp.
280. HALL, T. S. & PRITCHARD, G. B. The Geology of the Barwon about Innerleigh. P. Soc. Victoria xvi, pp. 292-305.
281. HANDMANN, R. Zur Kenntnis der Congerienfauna von Leobersdorf und Umgebung. Verh. geol. Reichsanst. 1904, pp. 48-59.
282. *HAUPT, H. Am Ufer des Schwarzen Meeres. Natur und Haus xii, pp. 193-196, figg.
283. *—. Leuchtende Organismen. Naturw. Wochenschr. xix, pp. 65-71, figg.
284. HEALEY, M. Notes on Upper Jurassic Ammonites, with special reference to specimens in the University Museum, Oxford. Quart. J. Geol. Soc. lx, pp. 54-62, pls. ix & x.
285. HEATH, H. The Larval Eye of Chitons. P. Ac. Philad. 1904, pp. 257-259.
286. —. The habits of a few Solenogastres. Zool. Anz. xxvii, pp. 457-461.
287. —. A new genus and species of Solenogastres. Op. cit. xxviii, pp. 329-331.
288. —. The nervous system and subradular organ in two genera of Solenogastres. Zool. Jahrb. Anat. xx, pp. 399-408, pl. xxvii.
289. — & SPAULDING, M. H. The anatomy of a Pteropod, *Corolla (Cymbulioopsis) spectabilis* Dall. T. c. pp. 67-80, pl. v.

290. HEDLEY, C. Le Père Lambert, S.M. *Nautilus* xvii, p. 119.
291. —. The effect of the Bassian Isthmus upon the existing marine fauna: a study in ancient geography. *P. Linn. Soc. N. S. Wales* xxviii, pp. 876-883.
292. —. Studies on Australian Mollusca. Part VIII. *Op. cit.* xxix, pp. 182-211, pls. viii-x.
293. —. Additions to the Marine Molluscan Fauna of New Zealand. *Rec. Austral. Mus.* v, pp. 86-97, figg.
294. —. The habitat of *Gomphina moerchii* Angas. *T. c.* p. 134.
295. —. On the change of name of *Poroleda lanceolata* Tate. *Victorian Natural.* xxi, p. 112.
296. HEINRICH, H. Über der Schlundkopf einiger dibranchiaten Cephalopoden. *Zeitschr. Naturw.* lxxvii, pp. 1-40, pls. i & ii.
297. HENSHAW, H. W. On certain deposits of semi-fossil shells in Hamakua District, Hawaii, with descriptions of new species. *J. Malac.* xi, pp. 56-64, pl. v.
298. HERDMAN, W. A. Recent investigations on Pearls in Shellfish. *Tr. Liverp. biol. Soc.* xviii, pp. 168-177.
299. —. Sewage and Shell-fish. *T. c.* pp. 178-188.
300. —. History of the principal Pearl Banks. Report...Pearl Oyster Fisheries of the Gulf of Manaar, Part ii, pp. 1-36.
301. —. Anatomy of the Pearl Oyster. *T. c.* pp. 37-76, 9 pls.
302. — & HORNELL, J. Note on Pearl-formation in the Ceylon Pearl Oyster. *Rep. Brit. Ass.* 1903, p. 695.
303. HEYNE-MANN, D. F. Some recent Slug papers. *J. Malac.* xi, pp. 48 & 49.
304. HIDALGO, J. G. Obras Malacologicas. Atlas, Entrega 6 (contains pls. cxlvi, cli-cliv, clvi-clxx). Madrid, 1904, 4to.
305. —. Catalogo de los Moluscos testaceos de las Islas Filipinas, Jolo, y Marianas. *Livr. I.* 1904. 192 pp. [From *Rev. Ac. Ciencias Madrid I.*]
306. HIND, W. A monograph of the British Carboniferous Lamelli-branchiata. Vol. ii. (Part iii), pp. 125-216, pls. xxii-xxv. [*Pal. Soc. Mon.*]
307. HINKLEY, A. A. List of Alabama shells collected in October and November, 1903. *Nautilus* xviii, pp. 37-45, 54-57.
308. HINTON, M. A. C. & KENNARD, A. S. The Vertebrate and Molluscan Remains from Cleeve Hill. *P. Cotteswold Club* xv, pp. 58-67.
- HIRASE, Y. [See PILSBRY & HIRASE (495-497).]
- HORNELL, J. [See HERDMAN & HORNELL (302), SHIPLEY & HORNELL (558).]
309. HORSLEY, J. W. The Land Shells of Majorca. *J. Conch.* xi, pp. 65-71.
310. HOYLE, W. E. A diagnostic key to the genera of Recent Dibranchiate Cephalopoda. *Mem. Manchester Soc.* xlvi, No. 23, 20 pp. Reprinted as *Notes Manchester Mus.*, No. 18.

311. [HOYLE, W. E.] *Sepia burnupi* n. sp. from Natal. J. Conch. xi, pp. 27 & 28, pl. i.
312. —. Reports on the Cephalopoda. U. S. Fish Commission Steamer "Albatross" Expedition 1891. Bull. Mus. Harvard xliii, No. 1, 71 pp., 12 pls., 7 figg.
313. —. On the Cephalopoda. In Report.....Pearl Oyster Fisheries of the Gulf of Manaar, Part ii, Suppl. Rep. xiv, pp. 185–200, 3 pls. HUBBARD, M. E. [See DAVENPORT & HUBBARD (180).]
314. HUDLESTON, W. H. On the origin of the Marine (Halolimnic) Fauna of Lake Tanganyika. J. Victoria Inst. xxxvi, pp. 300–351, 2 pls. Also in Geol. Mag. i, pp. 337–382, 2 pls.
315. HUNT, A. R. Thirty-five years' natural history notes. Rep. Devon. Ass. xxxvi, pp. 445–486.
316. HUTTON, F. W. Three new generic names for Mollusca. P. Linn. Soc. N. S. Wales xxix, p. 461.
317. —. Index faunæ Novæ Zealandiæ. London, 8vo, 1904. *Mollusca*, pp. 57–95, 348 & 349.
318. HYDE, J. H. The nerve distribution in the eye of *Pecten irradians*. Mark Annivers. Vol. New York, 1903, pp. 473–482, pl. xxxiv.
319. —. The Retinal nerve-endings in the eye of *Pecten*. Biol. Bull. vi, p. 317.
320. HYNING, T. VAN. A Molluscan stampede. Nautilus xviii, pp. 31 & 32, fig.
321. IAKHONTOV, G. Communication de l'excursion sur le lac Baical, faite en été de l'année 1902. Protok. Kazan. Univ. 1902–1903, No. 212, 11 pp. [In Russian.]
322. IHERING, H. VON. Zur Kenntnis der Naiaden von Goyaz. Nachrbl. Deutsch. malak. Ges. 1904, pp. 154–157.
323. —. Les Mollusques des Terrains Crétaciques Supérieurs de l'Argentine orientale. An. Mus. Buenos Aires ii, pp. 193–229, 2 pls.
324. ISERLE, J. Zpráva o novém nalezišti fauny v břidlici pásma D-dly u Rokycan. [Über einen neuen Fundort der Fauna im Schiefer der Etage D-dly bei Rokycan.] SB. Bohmisch. Ges. 1903, No. xxix, 7 pp.
325. JACKSON, J. W. & MOORE, C. H. Further observations on the Molluscan Fauna of Grange-over-Sands, Lancs., and district. J. Conch. xi, pp. 45–47.
326. — & TAYLOR, F. Observations on the habits and reproduction of *Paludestrina taylori*. T. c. pp. 9–11.
327. JACKSON, R. T. Charles Emerson Beecher. Amer. Natural. xxxviii, pp. 407–426, port.
328. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. Jahrb. geol. Reichsanst. liv, pp. 75–90.
329. JANSSENS, F. A. & ELINGTON, G. A. L'élément nucléinien pendant les divisions de maturation dans l'œuf de l'*Aplysia punctata*. Cellule xxi, pp. 315–326, pls. i & ii.
330. JATTA, G. A proposito di alcuni Cefalopodi del Mediterraneo. Boll. Soc. Napoli xvii, pp. 193–207.

331. JENNINGS, F. B. *Helix pomatia* m. *sinistrorsum* in Surrey. J. Conch. xi, p. 96.
332. JENSEN, C. A. & SELL, C. Beiträge zur Kenntniss der Molluskenfauna Dänemarks. Nachrbl. Deutsch. malak. Ges. 1904, pp. 117-123.
333. JENSEN, A. S. *Pecten frigidus*, nomen Pectini profundorum maris polaris incolæ novum datum. Vid. Medd. 1904, pp. 305-311, figg.
334. —. Bemærkninger om Molluskerne i de hævdede Lag ved Búlándshöfði. Ov. Danske Selsk. Vorh. 1904, pp. 382-396.
335. JOHNSON, C. W. *Ancylus* adhering to Water Beetles. Nautilus xvii, p. 120.
336. —. Description of two new Tertiary fossils. T. c. pp. 143 & 144, figg.
337. —. On the generic position of *Teredo fistula* H. C. Lea. Op. cit. xviii, pp. 13 & 14, fig.
338. —. Notes on some Cape Cod Mollusca. T. c. pp. 47 & 48.
339. —. *Panopea bitruncata* Conrad. T. c. pp. 73-75, pl. iv.
340. JOHNSON, J. P. Notes on Sections at Shark River and the Creek, Algoa Bay. Tr. geol. Soc. S. Africa vi, pp. 9-11.
341. JONES, K. H. & PRESTON, H. B. List of Mollusca collected during the Expedition of H.M.S. "Waterwitch" in the China Seas, 1900-1903, with descriptions of new species. P. Malac. Soc. London vi, pp. 138-151, figg.
342. JORDAN, J. Untersuchungen zur Physiologie des Nervensystems bei Pulmonaten. Arch. ges. Physiol. cvi, pp. 189-228, 2 figg.
343. JUKES-BROWNE, A. J. The Cretaceous Rocks of Britain. Vol. iii. The Upper Chalk of England. Mem. Geol. Surv. 1904, 566 pp. [Cf. p. 468.]
344. —. On some questions of Nomenclature. J. Conch. xi, pp. 97-103.
345. KEEP, J. West American Shells..... San Francisco, 1904, 8vo, 360 pp., figg.
346. KELSEY, F. W. A peculiar *Haliotis*. Nautilus xviii, p. 67.
347. KENNARD, A. S. & WARREN, S. H. On the recent Tufaceous Deposit of Totland Bay, Isle of Wight. Geol. Mag. i, pp. 19-22.
348. — & WOODWARD, B. B. On the specific identity of *Vivipara diluviana* Kunth and *Vivipara clactonensis* S. V. Wood. P. Malac. Soc. London vi, pp. 66 & 67.
- [See also HINTON & KENNARD (308).]
349. KENYON, A. F. Note on *Cassia paucirugis* Menke. J. Conch. xi, pp. 12 & 13.
350. KESTIVEN, H. L. The anatomy of *Megalatractus*. Mem. Austral. Mus. iv, pp. 419-450, pls. xxxix-xlii.
- KITSON, A. E. [See DENNANT & KITSON (187).]
351. KITTL, E. *Entogonites*, eine Cephalopodengattung aus dem bosnischen Kulm. Verh. geol. Reichsanst. 1904, p. 322.
352. —. Geologie der Umgebung von Sarajevo. Jahrb. geol. Reichsanst. liii, pp. 515-738, pls. xxi-xxiii, figg.

353. KNIPOWITSCH, N. Zoologische Ergebnisse der Russischen Expeditionen nach Spitzbergen. Mollusca und Brachiopoda, iv. Nachtrag. Annuaire Mus. St. Petersb. viii, pp. 133–143.
354. KOBELT, A. Verzeichnis der in den Bänden 1–35 des Nachrichtenblattes enthaltenen Arbeiten. Nachrbl. Deutsch. malak. Ges. 1904, Suppl., 42 pp.
355. KOBELT, W. Iconographie der schalentragenden europäischen Meeresconchylien. Lief. xxii & xxiii (Band III, pp. 201–272, pls. lxxix–lxxxiv, lxxxvi, lxxxvii). Wiesbaden, 1904.
356. —. Streifzüge in Süditalien. Nachrbl. Deutsch. malak. Ges. 1904, pp. 1–21, 49–57, 97–103, 131–154.
357. —. Diagnosen neuer *Murella*-Arten. T. c. pp. 21–24, 57–61.
358. —. Die systematische Stellung der Chinesischen *Ennea*. T. c. pp. 26–30.
359. —. Unsere Kenntnis der Fauna europaea. T. c. pp. 33 & 34.
360. —. *Cassidaria echinophora* L., forma gigantea. T. c. pp. 39 & 40.
361. —. Museum Loebbeckeanum. T. c. pp. 81–87.
362. —. Eine *Stenogyra* aus Turkestan. T. c. p. 87.
363. —. *Iberus* Montfort und *Otala* Schum. T. c. p. 88.
364. [—.] Eine merkwürdige Abnormität von *Helix pomatia* L. T. c. p. 125.
365. —. *Helix albescens* (Jan) Rossmäessler. Monit. Zool. ital. xv, pp. 206 & 207.
— [See also MARTINI & CHEMNITZ (426), ROSSMAESSLER (543).]
366. KOENEN, A. VON. Ueber die Untere Kreide Helgolands und ihre Ammonitiden. Abh. Ges. Gotting. iii, No. 2, 63 pp., 4 pls.
367. KOKEN, E. *Eurydesma* und der Eurydesmen-Horizont in der Saltrange. Centrbl. Mineral. 1904, pp. 97–107, figg.
368. KORMOS, T. Új adatok a Püspökfürdő élő csigáinak ismeretéhez [Neue Beiträge zur recenten Gastropoden Fauna von Püspökfürdő.] Allatt. Kozl. Magyar Tars. iii, pp. 102–111.
369. —. A *Succinea* (*Lucena*) *oblonga* Drp. eredetéről [Über den Ursprung der *Succinea* (*Lucena*) *oblonga* Drap.]. T. c. p. 184.
370. —. Palaontologische Mittheilungen. I. Beiträge zur Kenntnis der thermalen *Melanopsis*-Arten von Püspökfürdő bei Nagyvarad. II. Über die Übergangsformen und eine neue Varietät von *Planorbis multiformis* Bronn, sp. Foldtani Kozl. xxxiii, pp. 496–508.
371. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au Lac Baikal. Arch. Zool. exp. ii, pp. 1–26, map, 13 figg.
372. KOSTANECKI, K. Zmiany w jajku mlecza Mactry, rozwijajacem się partenogenetycznie pod wpływem chlorku potasowego. [Über die Veränderungen im Innern des unter dem Einfluss von KCl—Gemischen Künstlich parthenogenetisch sich entwickelnden Eis von *Mactra*.] Bull. Ac. Cracovie 1904, pp. 70–91.
373. —. Cytologische Studien an Künstlich parthenogenetisch sich entwickelnden Eier von *Mactra*. Arch. mikr. Anat. lxiv, pp. 1–98, 5 pls., figg.

374. KROULIKOWSKY, L. C. Notices Zoologiques. v. Données sur les Mollusques du district d'Ourjoum du gouv. de Viatka. Bull. Soc. Oural. xxiv, pp. 43-45.
375. KÜNKEL, K. Zur Biologie des *Limax variegatus*. Zool. Anz. xxvii, pp. 571-578.
376. KURCK, C. Studier öfver några skånska kaektuffer. Arkiv. Svenska Ak. Kem. i, pp. 277-328.
377. *KWIETNIEWSKI, C. Contribuzioni alla cónoscenza anatomo-zoologica degli Pteropodi gimnosomi del Mare Mediterraneo. Ric. Labor. anat. Roma ix, 97 pp., 2 pls.
378. LAJOS, S. Magyarországi új Helicidák. Ann. Mus. Hungar. ii, pp. 292-295.
379. LAMPLUGH, G. W. Land-shells in the infra-glacial Chalk-rubble at Sewerby, near Bridlington Quay. P. Yorks. geol. Soc. xv, pp. 91-95.
380. LAMY, E. De l'identité d'une Arche figurée par Savigny (*Arca pharaonis* P. Fischer) avec l'*A. ehrenbergi* Dunker. J. Conchyl. li, pp. 323-325.
381. —. Liste des Arches conservées avec étiquettes de Lamarck dans les collections du Muséum de Paris. Op. cit. lii, pp. 132-167, pl. v.
382. —. Sur le prétendu genre *Savignyarca* (Jousseau) Lamelli-branché. Bull. Mus. Paris ix, pp. 140-142.
383. —. Sur une variété de l'*Arca rhombea* Born. T. c. pp. 393-397.
384. LANG, A. Ueber Vorversuche zu Untersuchungen über die Varietätenbildung von *Helix hortensis* Müller und *Helix nemoralis* L. Denk. Ges. Jena xi (Festschr. Haeckel), pp. 437-506.
385. *—. Ob die Wassertiere hören. Mt. Ges. Winterthur iv, pp. 1-55, figg. [1903.]
386. LANGENHAM, R. Versteinerungen der deutschen Trias (des Bundsandsteins, Muschelkalks and Keupers)... Liegnitz, 1903, 22 pp., 17 pls.
387. LASKAREW, W. Die Fauna der Buglowka-Schichten in Volhynien. Trudui geol. Kom. n. s. 5, 148 pp., 5 pls.
388. LASSWITZ, R. Die Kreide-Ammoniten von Texas (collectio F. Roemer). Pal. Abh. vi, pp. 223-259, pls. xiii-xx, figg.
389. LEBOUCHER, J. & LETACQ, A. L. Catalogue des Mollusques observés dans le département de l'Orne. Bull. Soc. Normand. vi, pp. 186-221.
390. LEBOUR, M. V. Additions to the list of the Marine Mollusca of Northumberland. Rep. Northumberland Sea Fish. Comm. 1903, p. 50.
391. LEE, A. B. La structure du spermatozoïde de l'*Helix pomatia*. Cellule xxi, pp. 77-116, 1 pl.
392. —. L'évolution du spermatozoïde de l'*Helix pomatia*. T. c. pp. 399-445, 2 pls.
393. LEHMANN, A. Die Schnecken und Muscheln Deutschlands. Zwickau, 1904, 8vo, viii+82 pp., 2 pls.
394. LENDENFELD, R. VON. Die Nessel-einrichtungen der Aeoliden. Biol. Centrbl. xxiv, pp. 413-416.
- LETACQ, A. L. [See LEBOUCHER & LETACQ (389).]

395. LHOMME, —. Coquilles fossiles trouvées en 1903 dans les sables de Saint-Gobain (Yprésien). Feuille Natural. 1904, xxxiv, pp. 103-106.
396. LINDHOLM, W. A. Zur Molluskenfauna der Gouvernements Kursk und Orenburg. Annuaire Mus. St. Petersb. viii, pp. 338-344.
397. *LO BIANCO, S. Pelagische Tiefseefischerei der 'Maja' in der Umgebung von Capri. Jena, 8vo, 91 pp., 42 pls.
398. LOCARD, A. Notices Conchyliologiques. LVIII. Les huitres des mers d'Europe. Echange xx, pp. 62 & 63, 71 & 72, 79 & 80, 84-87.
399. LOEB, J. Artificial Parthenogenesis in Molluscs. Univ. Calif. Publ. Physiol. i, pp. 7-9.
400. LÖRENTHEY, E. Pteropodenmergel in alttertiären Bildungen von Budapest. Foldtani Kozl. xxxiii, pp. 520-524.
401. LORIOU, P. DE. Étude sur les Mollusques et Brachiopodes de l'Oxfordien Supérieur et Moyen du Jura Lédonien. Pp. 77-160, pls. vi-xix. [Abh. Schweiz. pal. Ges.]
402. LOWE, H. N. A dredging trip to Santa Catalina Island. Nautilus xviii, pp. 18-20.
403. LUCAS, B. R. Notes on Isle of Man Mollusca. J. Conch. xi, p. 90.
LUDWIG, A. [See FALKNER & LUDWIG (217).]
404. MCINTOSH, W. C. The story of a pearl. Zoologist 1904, pp. 41-56, pl. i.
405. MADER, —. Sur les fibres musculaires du cœur chez la Nasse. C.R. Ac. Sci. cxxxviii, p. 1537.
406. MADOULÉ, A. Observations sur le Mode de distribution des Mollusques terrestres vivant soit en colonies, soit plus ou moins isolément. Bull. Soc. Rouen xxxviii, pp. 312-314.
407. MADSEN, V. On Jurassic Fossils from East Greenland. Medd. Gronland xxix, pp. 157-216, pls. vi-x.
408. *MAISONNEUVE, P. La Faune de Maine-et-Loire. In 'Angers et l'Anjou,' 1903, pp. 99-150. Mollusca at pp. 140-142.
409. MALARD, A. E. Les méthodes statistiques appliquées à l'étude des variations des Patelles. Bull. Mus. Paris ix, pp. 270-274.
410. —. Sur un Lammellibranche nouveau, parasite des Synaptes. T. c. pp. 342-346.
411. MALUQUEZ Y NICOLAU, J. Moluscos marinos de Llansa (Cataluña). Bol. Soc. espan. iii, pp. 226-235.
412. MARCEAU, F. Sur la structure du cœur chez les Céphalopodes. C.R. Ac. Sci. cxxxviii, pp. 1177-1179.
413. —. Sur les fonctions respectives des deux parties des muscles adducteurs chez les Lamellibranches. T. c. pp. 1343 & 1344.
414. —. Sur le mécanisme de la contraction des fibres musculaires lisses dites à double striation oblique ou à fibrilles spiralées et en particulier de celles des muscles adducteurs des Lamellibranches. Op. cit. cxxxix, pp. 70-73.
415. —. Sur la structure du cœur chez les Gastéropodes et les Lamellibranches. T. c. pp. 150-152.
416. —. Sur la structure des muscles de l'*Anomia ephippium*. T. c. pp. 548-550.

417. [MARCEAU, F.] Note sur la structure du cœur chez les Gastéropodes et les Lamellibranches. Bull. Soc. Philom. vi, pp. 273-275.
418. MARGIER, E. Mollusques terrestres de la haute vallée du Verdon (Basses-Alpes). Feuille Natural. 1904, xxxiv, pp. 64 & 65.
419. MARINE BIOLOGICAL ASSOCIATION. Plymouth Marine Invertebrate Fauna. J. Mar. Biol. Ass. vii, pp. 155-298.
420. MARQUAND, E. D. [Addenda to Marine Fauna of Channel Islands.] Rep. Guernsey Soc. 1903, pp. 202 & 203.
421. —. Imperforate *Haliotis tuberculata*. J. Conch. xi, pp. 48 & 49.
422. MARTELLI, A. Cefalopodi Triasici di Boljevici presso vir nel Montenegro. Palæontogr. ital. x, pp. 75-140, pls. v-xiv.
423. MARTENS, E. VON. Conchylien von Urmia See. SB. Ges. naturf. Berlin 1904, pp. 18 & 19.
424. —. Verbreitungskärtchen von Landschnecken im deutschen Reiche. T. c. pp. 123-133.
425. MARTIN, G. C. Cephalopoda, Gastropoda, Amphineura, Scaphopoda. In "Maryland Geol. Survey, Miocene," pp. 130-274, pls.
- [See also CLARK & MARTIN (117).]
426. MARTINI & CHEMNITZ. Systematisches Conchylien-Cabinet, Lief. 486-496. *Helix* by W. KOBELT, pp. 121-200, pls. cccxxiii-cccxlvi; *Nannidae* by W. KOBELT, pp. 1093-1116, pls. cclxxvi-cclxxxi; *Agnatha* by W. KOBELT, pp. 33-296, pls. vii-xxxv; *Chitonidae* by S. CLESSIN, pp. 97-135, pls. xl & xli.
- MATTE, H. [See BIGOT & MATTE (54).]
427. MAYER-EYMAR, C. Description de Coquilles fossiles des terrains tertiaires inférieurs (Suite). J. Conchyl. li, pp. 308-320, pl. xiii.
428. —. Revue des grandes Ovules ou *Gisortia* Jousseau. Vierteljahrschr. Ges. Zurich xlix, pp. 35-39.
429. MAZZARELLI, G. I reni primitivi dei Molluschi. Monit. Zool. ital. xiv, pp. 354-357 [1903].
430. —. La detorsione negli Opistobranchi, e la voluta primitività del gen. *Acteon*. T. c. pp. 357-360.
431. —. Contributo alla conoscenza delle larve libere degli Opistobranchi. Arch. Zool. ii, pp. 19-78, pls. ii-iv.
432. MEISENHEIMER, J. Zur Anatomie und systematischen Stellung von *Desmopterus papilio* Chun. Zool. Anz. xxvii, pp. 331-334, 337-340, figg.
433. MELVILL, J. C. Descriptions of twenty-three species of Gastropoda from the Persian Gulf, Gulf of Oman, and Arabian Sea, dredged by Mr F. W. Townsend, of the Indo-European Telegraph Service, in 1903. P. Malac. Soc. London vi, pp. 51-60, pl. v.
434. —. On *Berthais*, a proposed new Genus of Marine Gastropoda from the Gulf of Oman. T. c. pp. 61-63, figg.
435. —. Note upon *Oliva gibbosa* Born and its limits of variation. T. c. pp. 64 & 65, fig.
436. —. Descriptions of twenty-eight species of Gastropoda from the Persian Gulf, Gulf of Oman, and Arabian Sea, dredged by Mr F. W. Townsend, of the Indo-European Telegraph Service, 1900-1904. T. c. pp. 158-169, pl. x.

437. [MELVILL, J. C.] *Conus coromandelicus* Smith, its probable affinities, and systematic position in the Family *Conidae*. T. c. pp. 170-173, figg.
438. —. Descriptions of twelve new species and one variety of Marine Gastropoda from the Persian Gulf, Gulf of Oman, and Arabian Sea, collected by Mr F. W. Townsend, 1902-1904. J. Malac. xi, pp. 79-85, pl. viii.
439. —. Note on *Mitra stephanucha* Melv., with description of a proposed new variety. T. c. p. 86, pl. viii.
440. — & STANDEN, R. *Cypræidae* of the Persian Gulf, Gulf of Oman, and North Arabian Sea, as exhibited in Mr F. W. Townsend's Collections, 1893-1904. J. Conch. xi, pp. 117-122.
441. — & —. Descriptions of sixty-eight new shells from the Persian Gulf, Gulf of Oman, and North Arabian Sea, dredged by Mr F. W. Townsend, of the Indo-European Telegraph Service, 1901-1903. J. Bombay Soc. xvi, pp. 86-98, pls. A & B.
[Reprint of first portion of Title No. 351, last year.]
442. MENZEL, H. Zwei neue Arten von *Valvata* Müller (Gruppe *Cinctina* Hübner). Nachrbl. Deutsch. malak. Ges. 1904, pp. 77-79, 96, figg.
443. MERCIAI, G. Lamellibranchi Liassici del calcare cristallino della montagna del Casale presso Busambro in provincia di Palermo. Boll. Soc. geol. Ital. xxiii, pp. 211-238, pl. vi.
444. MERRIAM, J. C. A note on the Fauna of the Lower Miocene in California. Bull. Calif. Univ. Geol. iii, pp. 377-381.
445. METCALF, M. M. *Neritina virginea* variety *minor*. Amer. Natural. xxxviii, pp. 565-569, 1 pl.
446. METZMACHER, A. Die Fauna des Miocänen Glimmertons von Kummer, Hohenwoos, und Bockup. Arch. Ver. Mecklenb. lvii, pp. 166-181.
447. MIKHAILOVSKY, G. Die Mediterran-Ablagerungen von Tomakowka (Gouvernement Jekaterinoslaw). Trudui geol. Kom. xiii, No. 4, 311 pp., 4 pls.
448. MOLOT, E. Sur la découverte à la Montagne de Berru de la Faune du Thanétien. Bull. Soc. Reims xiii, pp. 50 & 51.
449. MOORE, C. E. On the northernmost habitat of *Liguus fasciatus* on the Florida East Coast. Nautilus xviii, pp. 88 & 89.
MOORE, C. H. [See JACKSON & MOORE (325).]
450. MORLET, L. Descriptions de Mollusques nouveaux recueillis par M. A. Pavie en Indo-Chine. Mission Pavie Indo-Chine, Études Diverses iii, pp. 351-389, pls. xix-xxii. [Reprinted matter from various vols. of J. Conchyl.]
451. MURIE, J. Report on the sea fisheries and fishing industries of the Thames Estuary. London, 8vo, 1903. Mollusca, pp. 172-224, 7 figg.
452. *MUSKENS, L. J. J. Ueber eine eigenthümliche compensatorische Augenbewegung der Octopoden mit bemerkungen über deren Zwangsbewegungen. Arch. Physiol. 1904, pp. 49-56.
453. NAPIER, H. C. & CARPENTER, G. D. H. Record of Mollusca [near Oxford]. Rep. Ashmolean Soc. 1903, pp. 52-54.

454. NEWTON, R. B. Notes on the Post-Tertiary and Tertiary Fossils obtained by Col. English from the District surrounding the Dardanelles. *Quart. J. Geol. Soc.* lx, pp. 277-292, pl. xxiv.
455. NOBRE, A. Mollusques et Brachiopodes de Portugal (suite). *Ann. Sci. Nat. Porto* viii, pp. 141-151.
456. NOETLING, F. Ueber *Medlicottia* Waag. und *Episageceras* n. g. aus den permischen und triadischen Schichten Indiens. *N. Jahrb. Min. B.B.* xix, pp. 334-376, pls. xvii-xx.
457. NORDMANN, V. En Klump sammenkittede Molluskskaller fra Havbunden ved Læsø. *Medd. Dansk Geol. For.* ix, pp. 37-44.
458. —. Østersens (*Ostrea edulis* L.) Udbredelse i Nutiden og Fortiden i Havet omkring Danmark. *T. c.* pp. 45-60, figg.
459. OLDHAM, C. W. D. Crick, F.G.S. *J. Conch.* xi, p. 116.
460. OPPENHEIM, P. Über Tertiärfossilien, wahrscheinlich eozänen alters, von Kamerun. In 'Beiträge zur Geologie von Kamerun,' pp. 245-285, pls. vi-ix.
461. OSBORN, H. L. Amitosis in the Embryo of *Fasciolaria*. *Science* xix, p. 213.
462. —. Amitosis in the Embryo of *Fasciolaria*. *Amer. Natural.* xxxviii, pp. 869-884, figg.
463. OVERTON, H. Notes on the Anatomy of the Generative Organs of *Ariophanta juliana* Gray. *J. Malac.* xi, pp. 12-14, figg.
464. PALÆONTOLOGIA UNIVERSALIS. Fasc. ii & iii (pls. xiv-lxxv). 1904.
465. PALFY, M. VON. Zwei neue Inoceramus-Riesen aus den oberen Kreideschichten der siebenburgischen Landesteile. *Foldtani Kozl.* xxxiii, pp. 489-495, pls. xi & xii.
466. PALLARY, P. Quatrième Contribution à l'étude de la Faune Malacologique du Nord-Ouest de l'Afrique. *J. Conchyl.* lii, pp. 5-58, pls. i-iii.
467. —. Addition à la Faune Malacologique du Golfe de Gabès. *T. c.* pp. 212-248, pl. vii.
468. —. Addition à la Faune Conchyliologique de la Méditerranée. *Ann. Mus. Marseille* viii, pp. 1-16, pl. i.
469. PARKINSON, H. Über eine neue Culmfauna von Königsberg unweit Giessen, und ihre Bedeutung für die Gliederung des rheinischen Culm. *Zeitschr. Deutsch. geol. Ges.* lv, pp. 331-374, pls. xv & xvi.
470. PARONA, C. F. Una rudista della scaglia veneta. *Atti Acc. Torino* xxxix, pp. 303-307, 1 pl.
471. PATTERSON, R. L. The Common Mussel in Belfast Lough. *Irish Natural.* xiii, pp. 148-150.
472. *PEARL, R. & COLE, L. J. The effect of very intense light on Organisms. *Third Rep. Mich. Ac. Sci.* pp. 77 & 78.
473. * — & WITT, M. M. DE. Certain reactions of the Common Slug *Agriolimax campestris*. *T. c.* p. 79.
474. PELSENEER, P. L'Acclimatation de certains Mollusques marins. *C.R. Ass. Franc.* 1903, Pt. ii, pp. 774-776.
475. —. Quelques problèmes zoologiques de l'Antarctique. *T. c.* pp. 810-812.

476. [PELSENEER, P.] La forme archaïque des Ptéropodes Thécosomes. C.R. Ac. Sci. cxxxix, pp. 546-548.
477. PERNER, J. Gastéropodes. Tom. I (*Patellidae* et *Bellerophonitidae*). In Syst. Silurien.....Bohême, 1903, 164 pp., 89 pls.
Owing to the misleading title the recorder did not detect last year that many of the plates bore no relation to the text, and that the 'explanations' of these plates contained a number of names with 'n. g.' added. These are now inserted as accurately as the recorder is enabled to do.
- PERVINQUIÈRE, —. [See FLICK & PERVINQUIÈRE (229).]
478. PETCH, T. The published records of the Land and Freshwater Mollusca of the East Riding, with additions. Tr. Hull Club iii, pp. 121-172.
479. PETERSEN, H. Die Conchylien-Fauna des Nieder-Elbegebiets. Verh. Ver. Hamburg Unterh. xii, pp. 60-89.
480. PETITCLERC, P. Note sur l'*Ammonites* (*Oppelia*) *baylei* Coquand, de l'Oxfordien inférieur des environs de Besançon (Doubs). Feuille Natural. 1904, xxxiv, pp. 109-112, 129-133, pls. v & vi.
481. PETRASCHECK, W. Über die jüngsten Schichten der Kreide Sachsens. SB. Ges. Isis 1904, pp. 3-10.
482. PETTIT, A. Oedème expérimental chez le Poulpe (*Octopus vulgaris* Lam.) Bull. Mus. Paris ix, pp. 284 & 285, fig.
483. PEYROT, A. Fossiles du Redonien d'Ille-et-Vilaine. Feuille Natural. 1904, xxxiv, pp. 237 & 238.
484. PHILIPP, H. Paläontologisch-geologische Untersuchungen aus dem Gebiet von Predazzo. Zeitschr. Deutsch. geol. Ges. lvi, pp. 1-98, pls. i-vi, figg.
485. PICARD, E. Beitrag zur Kenntniss der Glossophoren der mitteldeutschen Trias. Jahrb. geol. Landesanst. Berlin xxii, pp. 445-540, pls. ix-xiv.
486. PILSBRY, H. A. A new Floridian *Amnicola*. Nautilus xvii, pp. 113 & 114.
487. —. A new subspecies of *Polygyra tridentata*. T. c. pp. 142 & 143.
488. —. *Plectopylis* in the Riukiu Islands. Op. cit. xviii, pp. 58 & 59.
489. —. A new Lower Californian *Sonorella*. T. c. p. 59.
490. —. New species of *Buccinum* from the Kuril Islands. T. c. pp. 87 & 88.
491. —. New land snails from North Carolina. T. c. pp. 89 & 90.
492. —. New Japanese Marine Mollusca : Gastropoda. P. Ac. Philad. 1904, pp. 3-37, pls. i-vi.
493. —. New Japanese Marine Mollusca : Pelecypoda. T. c. pp. 550-561, pls. xxxix-xli.
494. —. New *Clausiliidae* of the Japanese Empire. x. T. c. pp. 809-838, pls. lii-lvii [? 1905].
495. — & HIRASE, Y. Descriptions of new Japanese Land Shells. Nautilus xvii, pp. 104-107, 116-119.

496. [PILSBRY, H. A. & HIRASE, Y.] Descriptions of new Japanese Land Shells. *Op. cit.* xviii, pp. 3-9, 32-34.
497. — & —. Descriptions of new land snails of the Japanese Empire. *P. Ac. Philad.* 1904, pp. 616-638.
498. — & VANATTA, E. G. On certain Rhachiglossate Gastropoda eliminated from the *Aquillidae*. *T. c.* pp. 592-595, figg.
— [See also TRYON (619).]
499. *PIPER, H. Das elektromotorische Verhalten der Retina bei *Eledone moschata*. *Arch. Physiol.* 1904, pp. 453-474, figg.
PISSARRO, G. [See COSSMANN & PISSARRO (144 & 145).]
POLLONERA, C. [See CAZIOT (104).]
500. PONSONBY, J. H. Description of a Helicoid Land-shell (*Xanthomelon bednalli*) from Central Australia. *P. Malac. Soc. London* vi, p. 182, fig.
501. PÜTZSCH, O. Ueber die Entwicklung von Niere, Pericard und Herz bei *Planorbis corneus*. *Zool. Jahrb. Anat.* xx, pp. 409-438, 3 pls. & 10 figg.
502. PRESTON, H. B. Descriptions of some new species of Cingalese and Indian Marine Shells. *J. Malac.* xi, pp. 75-78, pls. vi & vii.
— [See also JONES & PRESTON (341).]
503. PRINZ, G. Ueber Rückschlagsformen bei liassischen Ammoniten. *N. Jahrb. Min.* 1904, i, pp. 30-38, pl. ii.
504. PRITCHARD, G. B. Contributions to the Palæontology of the older Tertiary of Victoria. *Gastropoda. Part II.* *P. Soc. Victoria* xvii, pp. 320-337, pls. xviii & xix.
505. — & GATLIFF, J. H. Catalogue of the Marine Shells of Victoria. *Part VIII.* *T. c.* pp. 220-266.
506. — & —. On some new species of Victorian Mollusca. No. 7. *T. c.* pp. 338 & 339, pl. xx.
— [See also HALL & PRITCHARD (280).]
507. QUINTARET, G. Sur la disposition générale du système nerveux chez la *Rissoa elata* var. *oblonga* (Desmaret). *C.R. Ac. Sci.* cxxxix, pp. 301 & 302.
508. RAJAT, H. Influence de la température sur la croissance des Mollusques. *Ann. Soc. Linn. Lyon* l, pp. 131-133.
509. RANGLES, W. B. Some observations on the anatomy and affinities of the *Trochidae*. *Quart. J. Micr. Sci.* xlviii, pp. 33-78, pls. iv-vi.
510. RANGE, P. Das Diluvialgebiet von Lübeck und seine Dryastone nebst einer vergleichenden Besprechung der Glazialpflanzen führenden Ablagerungen überhaupt. *Zeitschr. Naturw.* lxxvi, pp. 161-291.
511. RAVN, J. P. J. The Tertiary Fauna at Kap Dalton in East Greenland. *Medd. Gronland* xxix, pp. 95-140, pls. iii-v.
512. RAYMOND, W. J. A new *Dentalium* from California. *Nautilus* xvii, pp. 123 & 124.
513. —. Two new species of *Pleurotoma* from California. *Op. cit.* xviii, pp. 1-3.
514. —. A new species of *Pleurotoma* from the Pliocene of California. *T. c.* pp. 14-16.

515. REBOUL, P. Catalogue des types paléontologiques contenus dans les collections de Grenoble. Trav. Lab. geol. Grenoble vii, pp. 127-149.
516. REED, F. R. C. Mollusca from the Bokkeveld Beds. Ann. S. African Mus. iv, pp. 239-274, pls. xxx-xxxii.
517. REEKER, H. Selbstverstümmelung oder Autotomie. Jahresber. Westfal. Ver. xxxi, pp. 173-175.
518. REIS, O. M. Ueber Lithiotiden. Abh. geol. Reichsanst. xvii, Heft 6, 44 pp., 7 pls.
519. REMEŠ, M. Nachträge zur Fauna von Stramberg iv. Ueber Bivalven der Stramberger Schichten. Beitr. Pal. Oesterr.-Ung. xv, pp. 185-219, pls. xviii-xxii.
520. RENZ, C. Der Jura von Daghestan. N. Jahrb. Min. 1904, ii, pp. 71-85.
521. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. Anat. Anz. xxv, Ergänzungsheft, pp. 154-156.
522. REYNOLDS, S. H. & VAUGHAN, A. The Rhaetic Beds of the South-Wales direct Line. Quart. J. Geol. Soc. lx, pp. 194-213, pl. xviii.
523. RHOADS, S. N. A glimpse at the shell fauna of Delaware. Nautilus xviii, pp. 63-67.
524. RIBEIRO, A. DE M. *Limax variegatus* Drap. Arch. Mus. Rio Janeiro xii, pp. 138 & 139.
525. RICE, E. L. Preliminary Report on the Development of the Gill in *Mytilus*. Ohio Natural. iv, p. 51.
526. RICHARDSON, L. A Handbook to the Geology of Cheltenham and neighbourhood. Cheltenham, 8vo, 1904, 303 pp., figg., map.
527. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon, fasc. xiv, 252 pp., 8 pls.
528. RIGGENBACH, E. Die Selbstverstümmelung der Tiere. Mollusca. Anat. Hefte Ergebn. xii, pp. 817-828 [1903].
529. ROCHEBRUNE, A. T. Sur une Collection d'*Unionide* du département de la Charente. Bull. Mus. Paris ix, pp. 388-393.
530. —. Observations sur le genre *Bartlettia*. Op. cit. x, pp. 60-62.
531. —. Monographie du genre *Harmandia*. T. c. pp. 138-141.
532. —. Sur une Collection de *Limnæide* du département de la Charente. T. c. pp. 190-194, fig.
533. —. Recherches sur la validité de certains genres d'*Unionide* Africains. T. c. pp. 254-263.
534. — & GERMAIN, L. Diagnoses de Mollusques nouveaux provenant de la mission du Bourg de Bozas. T. c. pp. 141-144.
535. ROEBUCK, W. D. Molluscan Fauna of Langstrothdale. Naturalist 1904, pp. 293-297.
536. —. *Limax tenellus* in Scotland. Ann. Scott. Nat. Hist. 1904, pp. 218-221.
537. —. Re-establishment of *Limax tenellus* as a British species. J. Conch. xi, pp. 106-109.
538. —. Radnorshire Slugs. J. Conch. xi, p. 128.

ROGERS, A. F. [See BEEDE & ROGERS (47).]

539. ROLLE, H. Drei neue Najadeen aus Tonkin. *Nachrbl. Deutsch. malak. Ges.* 1904, pp. 25 & 26, 4 pls.
540. —. Diagnosen neuer Arten [Peru]. *T. c.* pp. 35–39, pl. v.
541. ROMAN, F. Contributions à l'étude des Bassins Lacustres de l'Éocène et de l'Oligocène du Languedoc. *Bull. Soc. geol. France* iii, pp. 546–616, pls. xix & xx.
542. ROSEN, O. VON. Zwei neue *Buliminus* Arten aus Centralasien. *Nachrbl. Deutsch. malak. Ges.* 1904, pp. 169 & 170.
543. ROSSMAESSLER, E. A. Iconographie der Europäischen Land- und Süßwasser Mollusken. Fortgesetzt von W. KOBELT. Neue Folge xi, pp. xii+342, 6 maps. [Includes Index to entire work.]
544. ROVERETO, G. Contributo allo studio dei Vermeti fossili. *Boll. Soc. geol. Ital.* xxiii, pp. 67–83, pl. iii.
545. ROWE, A. W. The Zones of the White Chalk of the English Coast. Part iv. Yorkshire. *P. Geol. Ass.* xviii, pp. 193–296, pls.
546. SACCO, F. I Molluschi dei Terreni terziarii del Piemonte e della Liguria. Parte xxx (Aggiunte e Correzioni). Turin, 4to, 1904, 203+xxxvi pp., 31 pls.
547. SCALES, F. S. Collecting Land and Fresh-Water Mollusca. *Knowledge* 1904, i, p. 164.
548. SCHELLWIEN, E. Palaeozoische und triadische Fossilien aus Ostasien. In 'Durch Asien' by K. Futterer, iii, pp. 125–174, 5 pls. [1903].
549. SCHIEDT, R. C. Some phenomena of animal pigmentation. *Amer. J. Physiol.* x, pp. 365–372.
550. SCHWEIKART, A. Die Bildung der Eihüllen und ihrer Anhänge bei den Chitonen. *Zool. Anz.* xxvii, pp. 636–648, 13 figg.
551. —. Beiträge zur Morphologie und Genese der Eihüllen der Cephalopoden und Chitonen. *Zool. Jahrb. Suppl.* vi. Fauna chilensis iii, Heft 2, pp. 353–406, 4 pls., figg.
552. *SCHULZ, N. Über das Vorkommen von Gallenfarbstoffen im Gehäuse von Mollusken. *Zeitschr. Physiol.* iii, pp. 91–130, 1903.
553. SEIBOLD, W. Anatomie von *Vitrella quenstedtii* (Wiedersheim) Clessin. *Jahresh. Ver. Württemb.* lx, pp. 198–226, pls. vi & vii.
- SELL, C. [See JENSEN & SELL (332).]
554. SEURAT, L. G. Observations sur l'évolution de l'Huitre perlière des Tuamotu et des Gambier (*Margaritifera margaritifera* L. var. *cumingi* Reeve). Papeete, 8vo, 1904, 12 pp.
555. —. Sur les Méléagrines du Lagon de Temoe (Crescent). *C.R. Soc. Biol.* lvi, pp. 293 & 294.
556. —. Sur la biologie des huitres perlières et nacrères des îles Gambier. *T. c.* pp. 294 & 295.
557. SHIMEK, B. Loess Papers. *Bull. Lab. Iowa* v, pp. 298 bis–381 bis, pls.
558. SHIPLEY, A. E. & HORNEILL, J. Parasites of the Pearl Oyster. In Report...Pearl Oyster Fisheries of the Gulf of Manaar, Part II, pp. 77–106, 4 pls.

559. SIEMIRADZKI, J. Geologia ziem Polskich. I. Formacye Starsze du Jurajskief Wlacznie, 1903, 8vo, 472 pp.
560. —. Fauna Kopalna warstw Oxfordzkich i Kimerydzkich w okregu Krakowskim i Przyleglych Czesciach Krolestwa Polskiego. [Fossil fauna of the Oxfordian and Kimeridgian beds in the neighbourhood of Cracow and the adjacent parts of the kingdom of Poland.] Pam. Ak. Krakow. xviii, 92+50 pp., 5 pls. [1891, 1892.]
561. SIMIONESCU, J. Studii Geologice si Paleontologice din Carpatii Sudici. II. Fauna Neocomiana din basenul dimboviciorei. Publ. Ac. Romana ii, pp. 101-167, 8 pls., 1898.
562. —. Studii Geologice si Paleontologice din Carpatii Sudici. III. Fauna Calloviana din Valea Lupului (Rucar). Op. cit. iii, 42 pp., 3 pls. 1899.
563. —. Fauna Cretacica Superiora de la Ūrmös (Transilvania). Op. cit. iv, 38 pp., 3 pls. 1899.
564. —. Descrierea Cător-Va Fosile Tertiare din Nordul Moldovei. Op. cit. vi, 25 pp., 2 pls. 1901.
565. SIMROTH, H. Neuere Arbeiten über die Verbreitung der Gastropoden. Zool. Zentrbl. xi, pp. 605-650.
566. —. Über *Ostracolethe* und einige Folgerungen für das System der Gastropoden. Zeitschr. wiss. Zool. lxxvi, pp. 612-672, pl. xxxii.
567. —. Ueber die von Herrn Dr Neumann in Abessinien gesammelten aulacopoden Nacktschnecken. Zool. Jahrb. Syst. xix, pp. 673-726, 4 pls., figg.
— [See also BRONN (86).]
568. SKEAT, E. G. The Jurassic Rocks of East Greenland. P. Geol. Ass. xviii, pp. 336-350.
569. SMALLWOOD, W. M. Notes on the Natural History of some of the Nudibranchs. Bull. Syracuse Univ. ser. 4, No. 1, pp. 14-17 [1903].
570. —. The Maturation, Fertilization, and early Cleavage of *Haminea solitaria* (Say). Bull. Mus. Harvard xlv, pp. 261-318, 13 pls.
571. —. Natural History of *Haminea solitaria* Say. Amer. Natural. xxxviii, pp. 207-225.
572. SMITH, E. A. Note on the Epiphragms of *Thaumastus sangoe* and *T. biteniatus*. P. Malac. Soc. London vi, pp. 3 & 4, fig.
573. —. Description of a new species of *Cassis* [*C. fortisulcata*, Kauai]. T. c. pp. 21 & 22, fig.
574. —. Descriptions of new species of *Ena*, *Pseudoglessula*, and *Subulina* from British and German East Africa. T. c. pp. 68-70, figg.
575. —. Some remarks on the Fauna of Lake Tanganyika. T. c. pp. 77-104.
576. —. Description of a new species of *Opisthostoma* from Borneo. T. c. p. 105, fig.
577. —. Note on *Voluta brazieri* Cox. T. c. pp. 178 & 179, fig.
578. —. On a collection of Marine Shells from Port Alfred, Cape Colony. J. Malac. xi, pp. 21-44, pls. ii & iii.

579. [SMITH, E. A.] Natural History Notes from H. M. Indian Marine Survey Steamer 'Investigator,' Commander T. H. Heming, R.N.—Series III, No. 1. On Mollusca from the Bay of Bengal and the Arabian Sea. *Ann. Nat. Hist.* xiii, pp. 453–473; xiv, pp. 1–14.
580. —. Note on *Terebra hedleyi* Tate. *P. Linn. Soc. N. S. Wales* xxix, pp. 211 & 212.
581. SMITH, J. P. Periodic Migrations between the Asiatic and the American Coasts of the Pacific Ocean. *Amer. J. Sci.* xvii, pp. 217–233.
582. SMYČKA, F. O vzácných zbytcích Belemnita z ostravského Karbonu [Belemnites-Reste aus dem Ostrauer Carbon]. *Vestník Klub. Prostejov* v, pp. 70–80.
583. SOBOLEW, D. Zur Stratigraphie des oberen Mitteldevons im polnischen Mittelgebirge. *Zeitschr. Deutsch. geol. Ges.* lvi, Mt. pp. 63–72.
584. SOLGER, F. Über *Pseudocucullæa*, einen neuen Taxodontentypus. *Op. cit.* lv, Protok. pp. 76–83, figg.
585. —. Die fossilen der Mungokreide in Kamerun und ihre geologische Bedeutung, mit besonderer berücksichtigung der Ammoniten. In 'Beiträge zur Geologie von Kamerun,' pp. 83–242, pls. iii–v, figg.
586. SOOS, L. Magyarország Helicidái [Die Heliciden Ungarns]. *Allatt. Kozl. Magyar Tars.* iii, pp. 134–184.
587. SOWERBY, G. B. Descriptions of *Dolium magnificum*, n. sp., and *Murex multispinosus*, n. sp. *P. Malac. Soc. London* vi, pp. 7 & 8, figg.
588. —. Descriptions of six new species of marine Mollusca from the collection of the late Admiral Keppel. *T. c.* pp. 174–177, figg.
589. —. Mollusca of South Africa (Pelecypoda). Cape Town, 1904, 19 pp., 2 pls. Also to form part of 'Marine Investigations in South Africa,' Vol. iv.
590. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoo-géographique indépendante. *Zapiski Kiev. Obshch.* xviii, pp. 1–487, 1–216.
- SPAULDING, M. H. [See HEATH & SPAULDING (289).]
591. STAHL, E. Die Schutzmittel der Flechten gegen Tiesfrass. *Denk. Ges. Jena* xi (Festschr. Haeckel), pp. 355–376.
592. STANDEN, R. The Zebra-Mussel (*Dreissensia polymorpha* Pallas). *J. Conch.* xi, pp. 83–90, figg.
- [See also MELVILL & STANDEN (440, 441).]
593. STEARNS, R. E. C. *Limax maximus* and other slugs in California. *Nautilus* xviii, pp. 34–36.
594. STEFANO, G. DI. Il calcare con grandi Lucine dei dintorni di Centuripe in provincia di Catania. *Atti Acc. Gioen.* xvi, No. 12, 71 pp., 3 pls.
- STELFOX, A. W. [See WELCH & STELFOX (645, 646).]
595. STEPHAN, P. Remarques sur le tissu conjonctif d'*Aplysia punctata*. *C.R. Soc. Biol.* lvi, pp. 1097–1099.
596. —. Spermies oligopyrènes et apyrènes chez les Prosobranches. *C.R. Ass. Franc.* 1903, Pt. ii, pp. 780–783.

597. STOPES, C. Palæolithic Implements from the Shelly Gravel Pit at Swanscombe, Kent. Rep. Brit. Ass. 1903, pp. 803 & 804.
598. STRAUB, W. Fortgesetzte Studien am Aplysienherzen (Dynamik, Kreislauf und dessen Innervation) nebst Bemerkungen zur vergleichenden Muskelphysiologie. Arch. ges. Physiol. ciii, pp. 429-449, 12 figg.
599. STREBEL, H. Beiträge zur Kenntnis der Molluskenfauna der Magal-haen-Provinz. Zool. Jahrb. Syst. xxi, pp. 171-248, 6 pls.
600. STURANY, R. Ueber einige von Herrn G. Paganetti-Hummeler entdeckte Höhlenschnecken. Nachrbl. Deutsch. malak. Ges. 1904, pp. 103-107, figg.
601. —. Ueber Kreta-Mollusken. T. c. pp. 108-112, fig.
602. SUTER, H. New Land-shells from New Zealand. P. Malac. Soc. London vi, pp. 155-157, figg.
603. SYKES, E. R. Descriptions of two new species of *Melania* from the New Hebrides. T. c. pp. 13 & 14, figg.
604. —. On the Mollusca procured during the 'Porcupine' Expeditions, 1869-1870. Supplemental Notes, Pt. I. T. c. pp. 23-40, pl. iii.
605. —. The Hawaiian Species of *Opeas*. T. c. pp. 112 & 113, figg.
606. —. Notes on the Genus *Anoma*. T. c. pp. 152-154, pl. ix.
607. —. On some non-marine shells from the Austro- and Indo-Malayan Regions. J. Malac. xi, pp. 87-92, pl. ix.
608. —. On a new Species of *Amastra* from the Hawaiian Islands. Ann. Nat. Hist. xiv, pp. 159 & 160.
- 608A. TATÉ, —. Rondelle percée en Coquille (Nouvelles-Hébrides). Bull. Soc. Anthropol. Paris 1904, p. 115.
- TAYLOR, F. [See JACKSON & TAYLOR (326).]
609. TAYLOR, J. W. Monograph of the Land and Freshwater Mollusca of the British Isles. Pt. x (Vol. II, pp. 105-160, pls. vii, xiii, xiv, xvi, xvii). Leeds, 8vo, 1904.
610. TESCH, J. J. The Thecosomata and Gymnosomata of the Siboga-Expedition. Leiden, 1904, 92 pp., 6 pls.
611. THESING, C. Beiträge zur Spermatogenese der Cephalopoden. Zeitschr. wiss. Zool. lxxvi, pp. 94-136, pls. viii & ix.
612. THORNEWILL, C. F. Obituary notice of Philip Brookes Mason. J. Conch. xi, pp. 104 & 105.
613. TOMLIN, J. R. LE B. *Paludestrina anatina* Drap. new to Britain. T. c. p. 11.
614. TOMMASI, A. Una *Lima* nuova ed una *Pinna* nel Muschelkalk di Recoaro. Boll. Soc. geol. Ital. xxiii, pp. 301-306, pl. viii.
615. *TÖNNIGES, C. Schnecken als Parasiten. Naturw. Wochenschr. xix, pp. 241-246, figg.
616. TORNQUIST, A. Die Gliederung und Fossilführung der ausser-alpinen Trias auf Sardinien. SB. Ak. Berlin xxxviii, pp. 1098-1117.
617. TOUCAS, A. Études sur la classification et l'Évolution des *Hippurites*. Deuxième partie. Pp. 65-128, pls. ix-xviii. Mem. Soc. geol. France, Pal. xii, fasc. 4.

618. TRAUTH, F. Ein Beitrag zur Kenntniss der Jura-fauna von Olo-mutschan. Verh. geol. Reichsanst. 1904, pp. 236-242.
619. TRYON'S Manual of Conchology.....Continuation by H. A. PILSBRY. Second Series. Vols. xvi (Pts. 64, 64*a*), pp. i-xl, 193-329, pls. xvi-xxxvii; xvii (Pts. 65, 66), pp. 1-112, pls. i-xxiii. *Achatinidæ*.
620. TSCHERNYSCHEW, T. The Upper Palæozoic formations of Eurasia. Rec. geol. Surv. India xxxi, pp. 111-141. [From Mem. Com. geol. St Petersburg. xvi.]
621. TUTCHER, J. W. The Lower Oolites near Bristol. P. Bristol Soc. x, pp. 150-168.
——. [See also VAUGHAN & TUTCHER (625).]
622. UHLIG, V. Himalayan Fossils. Vol. iv. The Fauna of the Spiti Shales. Mem. geol. Surv. India, ser. 15, 1903, 132 pp., 18 pls.
623. VALLENTIN, R. Notes on the Falkland Islands. Mem. Manchester Soc. xlviii, No. 23, 50 pp.
VANATTA, E. G. [See PILSBRY & VANATTA (498).]
624. VASSEL, E. Sur la question de l'acclimatation de la mère-perle. C.R. Soc. Biol. lvi, pp. 2-4.
625. VAUGHAN, A. & TUTCHER, J. W. The Lias of the neighbourhood of Keynsham. P. Bristol Soc. x, pp. 3-55.
——. [See also REYNOLDS & VAUGHAN (522).]
626. VAUGHAN, J. W. A contribution towards a list of the land and fresh-water Mollusca of Breconshire and Radnorshire. J. Conch. xi, pp. 56 & 57.
627. VAYSSIÈRE, A. Mollusques Hétéropodes provenant des campagnes des Yachts Hirondelle et Princesse-Alice. Result. Campag. Scient. Albert I de Monaco, Fasc. xxvi, 65 pp., 6 pls.
628. ———. Étude Zoologique de l'*Archidoris stellifera* H. von Ihering. J. Conchyl. lii, pp. 123-130, pl. iv.
629. ———. Recherches zoologiques et anatomiques sur les Mollusques Opisthobranches du Golfe de Marseille. Supplément. Ann. Mus. Marseille viii, No. 3, pp. 71-108, pls. ii & iii.
630. VERCO, J. C. Notes on South Australian Marine Mollusca, with descriptions of new species. Part i. Tr. R. Soc. S. Austral. xxviii, pp. 135-145, pl. xxvi.
631. VERRILL, A. E. Additions to the Fauna of the Bermudas from the Yale Expedition of 1901, with notes on other species. Tr. Connect. Ac. xi, pp. 15-62, pls. i-ix.
632. VIGIER, P. Structures des fibres musculaires du cœur chez les Mollusques. C.R. Ac. Sci. cxxxviii, pp. 1534-1537.
633. ——— & VLÈS, F. Sur l'histologie du myocarde chez des Mollusques primitifs. Op. cit. cxxxix, pp. 1226-1228.
VILLARD, J. [See GAUTIER & VILLARD (245).]
VINCHON, A. [See BÉDÉ & VINCHON (46).]
634. VLÈS, F. Technique pour une étude morphologique nouvelle de la coquille des Lamellibranches. Bull. Soc. zool. France xxviii, pp. 196-202, 5 figg.
635. ———. Locomotion de la Nucule. Op. cit. xxix, pp. 191-196.
——. [See also VIGIER & VLÈS (633).]

636. VREDENBURG, E. On the occurrence of a species of *Halorites* in the Trias of Baluchistan. Rec. Geol. Surv. India xxxi, pp. 162-166, pl. xvii.
637. WALKER, B. New species of *Somatogyrus*. Nautilus xvii, pp. 133-142, pl. v.
638. —. Notes on Eastern American Ancyli. Op. cit. xviii, pp. 16 & 17, 25-30, 75-83, pls. i & ii, v & vi.
639. —. Hints on collecting Land and Fresh-Water Mollusca. J. Applied Micro. vi, pp. 2365-2368.
640. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Denk. Ges. Jena xi (Festschr. Haeckel), pp. 133-214, pl. viii.
WARREN, S. H. [See KENNARD & WARREN (347).]
641. WEBSTER, W. H. New [Land] Mollusca from New Zealand. P. Malac. Soc. London vi, pp. 106-108, figg.
642. WELCH, R. Rare or local Irish Land and Freshwater Mollusca. J. Conch. xi, pp. 16-19.
643. —. Some Results of a Flood in North Ireland. T. c. p. 28.
644. —. Decalcification of Freshwater Shells. Irish Natural. xiii, p. 29.
645. — & STELFOX, A. W. The Mollusca of Bushy Park, Dublin. T. c. pp. 121-126.
646. — & —. Irish Field Club Union. Conference and Excursion at Sligo. Mollusca (Land and Freshwater). T. c. pp. 183-193, pls. viii & ix.
647. WELDON, W. F. R. Note on a race of *Clausilia itala* (von Martens). Biometrika iii, pp. 299-307.
648. WELLER, S. The Stokes Collection of Antarctic Fossils. Contrib. Walker Mus. i, pp. 65-71, pls. xi & xii. [Reprint of No. 553, last year.]
649. WHITEAVES, J. F. The Canadian species of *Trocholites*. Ottawa Natural. xviii, pp. 13-18.
650. WHITFIELD, R. P. Notice of six new species of Unios from the Laramie Group. Bull. Amer. Mus. xix, pp. 483-487, pls. xxxviii-xl.
651. WHITWELL, W. *Physa acuta* Drap. at Kew Gardens. J. Conch. xi, p. 19.
652. WILCKENS, O. Beitrage zur Geologie und Palaeontologie von Südamerika. XI. Revision der Fauna der Quiriquina-Schichten. N. Jahrb. Min. B.B. xviii, pp. 186-284, pls. xvii-xx.
653. WILSON, E. B. Experimental Studies in Germinal Localization. II. Experiments on the Cleavage-Mosaic in *Patella* and *Dentalium*. J. Exper. Zool. i, pp. 197-268, figg.
654. WINKLEY, H. W. *Helix hortensis* in New England. Nautilus xvii, pp. 121 & 122.
655. WINKWORTH, J. T. Varieties of *Helix nemoralis*. Essex Natural. xiii, p. 256.
656. WISSEL, C. VON. Pacificische Chitonen der Sammlungen Schauinsland und Thilenius nebst einem Anhang über drei neuseeländische Species der Gattung *Oncidiella*. Zool. Jahrb. Syst. xx, pp. 591-676, 5 pls. & 10 figg.

WITT, M. M. DE. [See PEARL & WITT (473).]

657. WOJCİK, K. Dolno-oligocénska fauna Kruhela małego pvd Przemyślem (Warstwy z *Clavulina* Szaboi). I. Otwornice i mieczaki [Die unteroligocäne Fauna von Kruhel mały bei Przemyśl (Die *Clavulina* Szaboischen). I. Die Foraminiferen und Mollusken. Bull. Ac. Cracovie 1903, pp. 798–809, pl. xvii.
658. WOLLEMANN, A. Ein Aufschluss im Mukronatensenon bei Rotenkamp, nordwestlich von Königsutter. Jahresber. Ver. Braunschweig xiii, pp. 40–42.
659. WOODS, H. A monograph of the Cretaceous Lamellibranchs of England. Vol. ii (Part i), pp. 1–56, pls. i–vii. *Limide*. [Pal. Soc. Mon.]
660. WOODWARD, B. B. The British species of *Vallonia*. J. Conch. xi, p. 82.
661. —. Mollusca. In the 'Victoria History of the County of Bedfordshire,' vol. i, pp. 69 & 70.
662. —. Mollusca. In the 'Victoria History of the County of Warwick,' vol. i, pp. 67 & 68.
— [See also KENNARD & WOODWARD (348).]
663. WRIGHT, C. E. *Succinea oblonga* Drap. var *alba*. J. Conch. xi, p. 96.
— [See also BEESTON & WRIGHT (48).]
664. WÜST, E. Weitere Beobachtungen über fossilführende pleistozäne Flussablagerungen im unteren Unstrutgebiete. Zeitschr. Naturw. lxxvii, pp. 71–80.
665. YABE, H. Cretaceous Cephalopoda from the Hokkaido. Part II. J. Coll. Tokyo xx, No. 2, 45 pp., 6 pls.
666. YAKOVLEV, N. Un représentant paléozoïque des *Crassatellitidae* (*Schizodus planus* Golowk.). Bull. Com. geol. St. Petersb. xxi, pp. 755–759, pl. x.
667. YOKOYAMA, M. On some Jurassic Fossils from Rikusen. J. Coll. Tokyo xviii, No. 6, 13 pp., 2 pls.
668. —. Jurassic Ammonites from Echizen and Nagato. Op. cit. xix, No. 20, 17 pp., 4 pls.
669. YUNG, E. Sur le sens olfactif de l'Escargot. C.R. Soc. Biol. lvi, pp. 291 & 292.
670. ZUGMAYER, E. Über Sinnesorgane an den Tentakeln des Genus *Cardium*. Zeitschr. wiss. Zool. lxxvi, pp. 478–508, pl. xxix, figg.

BIOGRAPHIES, OBITUARY NOTICES, ETC. (arranged alphabetically)

- Beecher, C. E. ; JACKSON, Amer. Natural. xxxviii, pp. 407–426, port. :
 CLARKE, Amer. Geol. xxxiv, p. 1, port. : ANON, Geol. Mag. i, p. 284.
 Bernier, J. ; FISCHER, J. Conchyl. lii, pp. 96–98.
 Crick, W. D. ; OLDHAM (459).
 Etheridge, R. ; H. W., Geol. Mag. i, p. 42.
 Gaudion, H. ; VAYSSIÈRE, Ann. Mus. Marseille viii, pp. 11–16, port.
 Heude, P. M. ; FISCHER (220).
 Hudleston, W. H. ; ANON, Geol. Mag. i, p. 431.
 Hyatt, A. ; CROSBY, Bull. Soc. geol. Amer. xiv, pp. 504–512, port.

- Kowalewsky, A. O. ; VAYSSIÈRE, Ann. Mus. Marseille viii, pp. 7-10, port.
 Lambert, P. ; HEDLEY (290) : FISCHER, J. Conchyl. lii, pp. 99 & 100.
 Loebbecke, T. ; KOBELT (361).
 Martens, E. von ; BOETTGER, Zool. Garten xlv, p. 318 : KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 129.
 Mason, P. B. ; THORNEWILL (612).
 Moellendorff, O. F. von ; ANON, P. Malac. Soc. London vi, pp. 73 & 74 : FISCHER, J. Conchyl. lii, pp. 106-108.
 Munier-Chalmas, E. P. A. ; DOLLFUS, t. c. 100-106.
 Philippi, R. A. ; BOETTGER, Zool. Garten xlv, p. 356 : KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 129.
 Rossiter, R. C. ; DAUTZENBERG, J. Conchyl. lii, pp. 94-96.
 Zittel, K. A. M. ; POMPECKJ, Palæontogr. 1 : KITCHIN, Geol. Mag. i, p. 90.

II. BIOLOGY.

A.—ANATOMY, PHYSIOLOGY, &c.

1. MORPHOLOGY.

- General :—Structure of the Molluscan heart ; MARCEAU (412, &c.).
 Cephalopoda :—Statocysts ; FRÖHLICH (235).—The pharynx of the Cephalopods ; HEINRICH (296).—Notes on some Cephalopods ; HOYLE (312, &c.).
 Gastropoda :—Account of Gastropods continued by SIMROTH in BRONN (86).—Notes on anatomy of *Damagantia*, *Collingea*, and *Isselentia* ; COLLINGE (126).—Anatomy of *Eurystoma vittata* ; GODWIN-AUSTEN (260). Biology of *Limax variegatus* ; KÜNKEL (375).—Anatomy of *Vitrella quenstedtii* Clessin ; SEIBOLD (553).—Anatomy of *Ostracolethe* ; SIMROTH (566).—Anatomy of some Hungarian *Helicidæ* ; SOOS (586).
 Nematocysts in Nudibranchs ; ABRIC (2) : GROSVENOR (269) : LENDENFELD (394).—On *Doris giardi*, n. sp. ; ABRIC (3).—Animal and radula of *Doris planata* ; ELIOT (207).—Anatomy of *Lottia gigantea* Gray ; FISHER (225).—Anatomy of *Haliotis* ; FLEURE (226).—Anatomy of *Corolla (Cymbulopsis) spectabilis* Dall ; HEATH & SPAULDING (289).—Anatomy of *Megalatractus* ; KESTIVEN (350).—Anatomy of some Gymnosomate Pteropods ; KWIETNIEWSKI (377).—Anatomy of *Desmopteris papilio* ; MEISENHEIMER (432).—Archaic form of Thecosomate Pteropod ; PELSENEER (476).—Anatomy of British *Trochidæ* ; RANGLES (509).—Anatomy of *Haminea solitaria* ; SMALLWOOD (570).—Anatomy of some Thecosomata and Gymnosomata ; TESCH (610).—Anatomy of some Heteropods ; VAYSSIÈRE (627).—Anatomy of *Akera bullata*, *Philine punctata*, *Pelta coronata*, and several Nudibranchs ; VAYSSIÈRE (629).—Anatomy of *Archidoris stelleri*, n. sp. ; VAYSSIÈRE (628).
 Scaphopoda :—Anatomy and Histology of *Dentalium* ; BOISSEvain (73).
 Pelecypoda :—Morphology and anatomy of *Tridacna* ; ANTHONY (20).—Anatomy of *Pecten tenuicostatus* ; DREW (200).—Subradular organ in *Pronomenia* and *Rhopalomenia* ; HEATH (288).—Anatomy of pearl oyster ; HERDMAN (301).—Anatomy of *Margaritifera* ; SEURAT (556, &c.).
 Shell :—Structure of the shell of *Unio* ; FRIERSON (233).
 Radula :—*Maculotriton* and *Caducifer* ; PILSBRY & VANATTA (498).—Some Australian Gastropods and Scaphopods ; VERCO (630).
 Muscular :—Form and structure of adductor muscles in Pelecypods ; ANTHONY (19).—Muscular structure of the heart in *Nassa* ; MADER (405).—Structure of the muscles in *Anomia* ; MARCEAU (416).—Muscular structure of the heart ; VIGIER (632).

Circulatory :—Blood of marine Gastropods ; COUVREUR (149).—Structure of the heart in *Octopus* ; MARCEAU (412).—Structure of the Gastropod and Pelecypod heart ; MARCEAU (415, 417).—On the heart in *Aplysia* ; STRAUB (598).—Histology of the 'myocarde' in primitive molluscs ; VIGIER & VLÈS (633).

Nervous :—Nervous system of Pelecypoda with special reference to *Nucula* ; BURNE (93).—On the nervous system of *Oscanius membranaceus* and *Pleurobranchia meckeli* ; DISTASO (192).—Nervous system in *Pecten* ; DREW (199).—Nervous system of *Proneomenia* and *Rhopalomenia* ; HEATH (288).—Retinal nerve-endings in eye of *Pecten* ; HYDE (319).—Nerve distribution in the eye of *Pecten irradians* ; HYDE (318).—Nervous system of *Rissoa elata* ; QUINTARET (507).—Nervous system of Opisthobranchs ; VAYSSIÈRE (629).—Sensory organs in the tentacles of *Cardium* ; ZUGMAYER (670).

Generative :—Generative organs of *Ariophanta juliana* ; OVERTON (463).

Conjunctive tissue :—*Aplysia punctata* ; STEPHAN (595).

2. PHYSIOLOGY.

Occurrence of zinc in *Sycotypus* and *Fulgur* ; BRADLEY (81).—Occurrence of Taurin in Invertebrate muscle ; BRADLEY (82).—Red secretion in *Aplysia* ; BRIOT (84).—Nervous Regulation of heart in *Venus mercenaria* ; BUDINGTON (91).—Stimulation of heart-nerves in Mollusca ; CARLSON (96).—Pigment of the tegument of *Aplysia* ; GAUTHIER & VILLARD (245).—Physiology of colour in *Helix* ; GÖPPELSROEDER (263).—Function of salivary glands in *Helix pomatia* ; GORKA (264).—Luminous Molluscs ; HAUPT (283).—Luminous and integumentary organs of Cephalopoda ; HOYLE (312).—Physiology of the nervous system in Pulmonata ; JORDAN (342).—Functions of the two parts of the adductor muscles in Pelecypods ; MARCEAU (413).—Mechanism of contraction of adductor muscles in Pelecypods ; MARCEAU (414).—Muscular contraction ; MAXWELL, Science xix, p. 249.—Movement of the eye in Cephalopods ; MUSKENS (452).—Effect of intense light on Molluscs ; PEARL & COLE (472).—Reactions of *Agriolimax* ; PEARL & WITT (473).—Movement of the Retina in *Eledone* ; PIPER (499).—Pigmentation in *Ostrea* ; SCHIEDT (549).—Colouring matter in the shell ; SCHULZ (552).—Olfactory sense in *Helix pomatia* ; DUBOIS (201) ; YUNG (669).

3. DEVELOPMENT (Embryology and Life-History).

Spermiogenesis in *Enterokenos* ; BONNEVIE (77).—Development of Germ layers in *Fiona* ; CASTEEL (99).—Early larval development of *Fiona* ; CASTEEL (100).—Tufts of surface-bristles on the young stages of *Octopus* ; CHUN (114).—Eggs, etc., of *Parmucella* ; COLLINGE (129).—Cause of inverse Symmetry ; CONKLIN (134).—Organ-forming germ regions in Molluscs ; CONKLIN (133).—Origin of cleavage centrosomes in *Crepidula* ; CONKLIN (135).—Structure of the egg in *Sepia* ; DHÉRÉ (189).—Embryology of *Pecten tenuicostatus* ; DREW (200).—Embryology of *Quadrula* ; FRIERSON (234).—Formation of Germinal Layers in Gastropods ; FUJITA (237).—Excretory activities in the nuclei of embryos ; GLASER (258).—Larval eye of Chitons ; HEATH (285).—Eggs of *Lotorium spengleri* ; HEDLEY (292).—Reproduction of *Paludestrina taylora* ; JACKSON & TAYLOR (326).—The Chromosomes during maturation in the Egg of *Aplysia punctata* ; JANSSENS & ELRINGTON (329).—Development of *Limnæa stagnalis* ; J. H., Rochester Natural. iii, p. 236.—Artificial parthenogenesis in the egg of *Mactra* ;

KOSTANECKI (372).—Evolution of the spermatozooids in *Helix pomatia*; LEE (391).—On the structure of the spermatozooids in *Helix pomatia*; LEE (392).—Artificial parthenogenesis in Molluscs; LOEB (399).—The primitive kidney in Mollusca; MAZZARELLI (429).—The free larvæ of Opisthobranchs; MAZZARELLI (431).—Torsion in the Opisthobranchs and the primitive coiling in *Actæon*; MAZZARELLI (430).—Amitosis in the embryo of *Fasciolaria*; OSBORN (461, 462).—On the development of the kidney, pericardium, and heart in *Planorbis corneus*; PÖTZSCH (501).—Influence of temperature on the growth of freshwater shells; RAJAT (508).—The sperm of the Invertebrata, with reference to Mollusca; RETZIUS (521).—Development of gill in *Mytilus*; RICE (525).—Morphology and genesis of the egg-integument in Cephalopoda and Chitons; SCHWEIKART (550, 551).—Embryology of *Haminea solitaria*; SMALLWOOD (570).—Spawn of Nudibranchs; SMALLWOOD (569).—Maturation, fertilization, etc., of *Haminea solitaria*; SMALLWOOD (570).—Oligopyrene and apyrene sperm in the Prosobranchs; STEPHAN (596).—Spermatogenesis of the Cephalopoda; THESING (611).—Development of *Patella* and *Dentalium*; WILSON (653).

4. ETHOLOGY (Habits, Relation to Environment, &c.).

Habits of *Littorina rudis*; BOHN (71, 72).—Note on Ethology of *Littorina*; BOHN, C.R. Ac. Sci. cxxviii, p. 112.—Slime spinning by *Sphærium corneum*; CARTER, Naturalist 1904, p. 156.—Note on dispersal of Mollusca; CAZIOT (101).—Habits of *Testacella haliotide*; COOKE (138).—Animal Ecology of Cold Spring Sand Spit; DAVENPORT (178).—Life-history of *Haliotis*; FLEURE (227).—The habits of Solenogastres; HEATH (286).—Habits of *Physa gyrina*; HYNING (320).—Habits of *Paludestrina taylori*; JACKSON & TAYLOR (326).—*Ancylus* adhering to waterbeetles; JOHNSON (335).—Note on mode of distribution of *Helix*; MADOUÉ (406).—Acclimatization of some marine shells; PELSENEER (474).—On self-mutilation; REEKER (517).—Self-mutilation in Mollusca; RIGGENBACH (528).—Notes on Gambier pearl-oyster; SEURAT (554, &c.).—Epiphragms of *Thaumastus*; SMITH (572).—Ethology of Helices; STAHL (591).—Habits, etc., of *Dreissensia*; STANDEN (592).—Longevity of *Bulinulus pallidior*; STEARNS, Nautilus xviii, p. 58.—Acclimatization of pearl-oyster; VASSEL (624).—Locomotion of *Nucula*; VLÈS (635).

Pearls and their formation:—On Pearls; ANON (18).—The formation of pearls; BOUTAN (80).—General notes; DUBOIS (202).—On the secretion of pearls; DUBOIS (205).—Note on pearls; DUBOIS (204).—On the origin of pearls, and views of old authors; GIARD (253).—Recent investigations on pearl-formation; HERDMAN (298).—Pearl formation in the Ceylon Pearl Oyster; HERDMAN & HORNELL (302).—On pearls, and their formation; MCINTOSH (404).

Enteroxenos, apparently n. gen., parasitic in Holothurians; BONNEVIE (76).—New Nematode parasitic in *Helix*; CONTE & BONNET (137).—Trematode parasite of oyster; GRAHAM, Science xix, p. 247.—Parasites of pearl oyster; SHIPLEY & HORNELL (558).—Parasitic Molluscs; TÖNNIGES (615).

5. VARIATION AND TERATOLOGY.

Variation of colour in Nudibranchs; ABRIC (1).—Absence of male generative organs in *Arion hortensis*; COLLINGE (127).

On the assumption of a rounded form in laterally attached Bivalves; ANTHONY (21).—Spire variation in *Pyramidula alternata*; BAKER (31).—Monstrosities of *Helix pomatia*; BELLEVOYE (49).—Variation of *Achati-*

nella multizonata; COOKE (139).—Polytaxis in landshells; COUTAGNE (147).—Variation in *Murex brandaris*; DAUTZENBERG (175).—Variation in certain American Pectens; DAVENPORT (179).—Rib variation in *Pecten varius*; DAVENPORT & HUBBARD (180).—Variation and environment; GULICK (275).—*Haliotis* without perforations; KELSEY (346).—Abnormal *Helix pomatia*; KOBELT (364).—Study of variation in *Helix hortensis* and *nemoralis*; LANG (384).—Statistical methods of studying variation in *Patella*; MALARD (409).—Imperforate *Haliotis tuberculata*; MARQUAND (421); also Rep. Guernsey Soc. 1903, p. 233.—Variation in *Neritina*; METCALF (445).—Heavy subfossil *Helix nemoralis* from Connemara; WELCH, Rep. Belfast Club v, p. 50.—Variation in the shell of *Clausilia itala*; WELDON (647).—Distorted oyster; WINKLEY, Nautilus xviii, p. 24.—Variation of *Helix nemoralis*; WINKWORTH (655).

Sinistral *Jamnia muscorum*; BALDWIN (32).—Sinistral *Helix nemoralis*; COLLIER (124).—Sinistral *Helix pomatia*; JENNINGS (331).—Reversed *Helix aspersa*; WELCH & STELFOX (646).—Sinistral *Laoma moellendorffi* Suter; SUTER (602).

6. TAXONOMY (Phylogeny and Classification).

Note on phylogeny; BACCI & BERNARDI (23).—On evolution in the Docoglossa; FLEURE (228).—Phylogeny of *Haliotis*; FLEURE (226).—Evolution of Mollusca; GIARD (254).—Phylogeny of *Fusus*; GRABAU (265).—Key to Genera of Recent Dibranchiate Cephalopods; HOYLE (310).—Evolution of pearl oyster of Gambiers; SEURAT (554).—Inter-relationship of Gastropods; SIMROTH (566).—On the curves of the shells of Bivalves; VLÈS (634).

7. BIBLIOGRAPHIES, MUSEUMS, &c.

Museums:—List of types of Gastropods and Scaphopods from Oolites in Mus. Practical Geol., London; ALLEN, Summary Progr. Geol. Surv. 1903, pp. 175–187.—Storer Collection is now in Amer. Mus.; ANON., Amer. Mus. J. iv, p. 37.—Arrangement of Collection of Chicago Academy; BAKER (28).—Catalogue, with critical notes of Defrance collection; BIGOT & MATTE (54).—Catalogue of the Hagenmüller Palearctic collection; COUTURIER (148).—Loebbecke collection; KOBELT (361).—Catalogue of fossil types in Grenoble collection; REBOUL (515).—Gaudion collection has gone to Marseilles Museum; VAYSSIÈRE, Ann. Mus. Marseille viii, p. 15.

Bibliographies:—Canadian Palæontology for the year 1902; AMI (8).—Bibliography of W. H. Hudleston; ANON., Geol. Mag. i, p. 431.—Bibliography of A. Hyatt; CROSBY, Bull. Soc. Geol. Amer. xiv, p. 504.—Notes on Bolten's names; DALL, Nautilus xviii, p. 84.—Bibliography of Robert Etheridge; H. W., Geol. Mag. i, p. 42.—On Dates of species described by Tenison-Woods; HEDLEY (292), p. 210.—Bibliography of C. E. Beecher; JACKSON (327).—Bibliography of Zittel; KITCHIN, Geol. Mag. i, p. 90.—Contents of Vols. i–xxxv of Nachrbl. Deutsch. malak. Ges.; KOBELT, A. (354).

8. ECONOMICS.

An old 'Purple-fishery' off Crete; BOSANQUET (79).—Shell-fish culture of Ireland; BROWNE (87).—Oyster culture in Japan; DEAN (182).—Detection of pearls by X rays; DUBOIS (203).—Oysters and typhoid; GIARD (251).—Sewage and Mollusca; HERDMAN (299).—History of Ceylon pearl banks; HERDMAN (300).—On Pearl fisheries, &c.; MCINTOSH (404).—Shell-fishery of the Thames estuary; MURIE (451).—Mussel fishery in Belfast Lough; PATTERSON (471).

9. STRAY NOTES.

Sulphuric acid used to poison tide-pool for collecting; CHAMBERLAIN, J. Applied Micr. vi, p. 2255.—Name 'Namatogæan' proposed for 'land and fresh-water' Molluscs; DALL, Science xix, p. 926.—*Paludestrina jenkinsi* as food for fish; DEAN, J. Conch. xi, p. 15. See HORSLEY, t. c. p. 90.—Molluscs as food for fishes; GUCCINI, Rend. Ist. Lombardo xxxvii, p. 194.—*Limnæa peregra* polluting water; HICKSON, Rep. Brit. Ass. 1903, p. 675.—A standard of value for exchanges; HORSLEY, J. Conch. xi, p. 26.—Shells as food of the 'Chipmunk'; HYNING, Nautilus xviii, p. 23.—Sense of hearing in Mollusca; LANG (385).—*Oedema in Octopus*; PETTIT (482).—On methods of collecting land and freshwater shells; SCALES (547).—Collecting land and freshwater shells; WALKER (639).—Molluscs as food for trout; WELCH, Irish Natural. xiii, p. 45.—Decalcification of dead shells due to carbonic acid; WELCH (644).

B.—DISTRIBUTION.

GEOGRAPHICAL.

N.B.—The numbers in brackets refer to the "Titles." A reference is thus given to each memoir containing any notice affecting the Molluscan fauna of the several geographical divisions here adopted. Synonymic notes and changes of systematic position are, however, not noticed here. References to minor notes, which are not included in the "List of Titles," but which contain faunistic notes of any value, are given to the work direct.

NON-MARINE MOLLUSCA. [For *Marine* see p. 48.]

Distribution of Gastropods; SIMROTH (565).

Europe:—KOBELT in ROSSMAESSLER (543) gives a full account of the fauna, its distribution, systematic classification, nomenclature, etc.

Asia:—Helicoids, supplemental notes and corrections to list; GUDE (273).

a. PALÆARCTIC ZONE.

1. *Septentrional Region.*

British Isles:—Occurrence of *Limax tenellus* in several localities; ROEBUCK (537).—Distribution of Slug Fauna, illustrated by maps, continued; TAYLOR (609).—*Paludestrina anatina* from Suffolk, new to fauna; TOMLIN (613).—On the species of *Vallonia*; WOODWARD (660).

England and Wales:—Bedfordshire: Review of fauna; WOODWARD (661).—Brecon and Radnor: Land and freshwater fauna; VAUGHAN (626).—Cambridgeshire: Review of fauna; BRINDLEY (83).—Carnarvon: Few shells from Abersoch; BALDWIN (32).—Cheshire: Landshells on Wirral Peninsula; STANDEN, J. Conch. xi, p. 49.—Derbyshire: Land and freshwater shells from Miller's Dale; JACKSON, J. Conch. xi, p. 105. Few landshells; JACKSON, t. c. p. 13.—Devon: List of non-marine mollusca from Ilfracombe and district; BEESTON & WRIGHT (48): White *Succinea oblonga* from Ilfracombe; WRIGHT (663).—Essex: *Limax cinereoniger*; PETCH, Essex Natural. xiii, p. 299: Occurrence of *Limax tenellus*; [PETCH], Nature Notes xv, p. 240.—Isle of Man: Notes on landshells; LUCAS (403).—Lancashire: Fauna of Grange-over-Sands; JACKSON & MOORE (325): Occurrence of *Arion ater*, var.; PETTY, Naturalist 1904, p. 32: Freshwater shells from Droylsden; TAYLOR, J. Conch. xi, p. 71: Non-marine shells of Lancaster; DEAN (183).—

Lincoln: Few shells mentioned; PEACOCK, *Naturalist* 1904, p. 347: *Helix virgata* at Cadney; PEACOCK, t. c. p. 156: Few shells mentioned; PEACOCK, t. c. p. 191: Few shells from Tetley Lock; CASTLE, t. c. p. 254: White *Helix lapicida* at Carlby; STOW, t. c. p. 347: Mollusca from Hubbard's Valley; CARTER (97).—Northamptonshire: Few landshells, including sinistral *Helix aspersa*; WRIGHT, J. *Northampt. Soc.* xii, p. 30: Few shells; SHAW, t. c. p. 75: Addenda to fauna; SHAW, t. c. pp. 173, 212, 277, 278.—Oxfordshire: Molluscs from near Oxford; NAPIER & CARPENTER (453).—Radnorshire: Notes on slugs; ROEBUCK (538).—Suffolk: Addenda to fauna; GREENE (267).—Surrey: *Helix cantiana* on Tooting Common; WHITWELL, J. *Conch.* xi, p. 55: *Testacella haliotidea* at Park Hill, Croydon; PARSONS, P. *Croydon Club* 1903–1904, p. xxviii: *Physa acuta* in Kew Gardens; WHITWELL (651).—Warwick: Review of fauna; WOODWARD (662).—Wiltshire: Land and freshwater shells near Marlborough; ANON., *Rep. Marlbor. Soc.* lii, p. 79.—Worcestershire: *Testacella scutulum* at Kings Norton; MADISON, J. *Conch.* xi, p. 103.—Yorkshire: Fauna of Driffeld and neighbourhood; BLACKBURN (55): Shells from Hebden Bridge; CROWTHER, *Naturalist* 1904, p. 254: *Paludestrina jenkinsi* in Spen Valley; CASTLE, t. c. p. 255: *Paludestrina jenkinsi* in Holderness; PETCH, t. c. p. 141: Few shells from Hornsea Mere; PETCH, t. c. p. 191: *Helix lamellata*, etc., near Scarborough; HEY, t. c. p. 207: Few freshwater shells from Halifax; CROWTHER, *Halifax Natural.* viii, p. 86: Fauna of Langstrothdale; ROEBUCK (535): Fauna of the East Riding; PETCH (478).

Scotland:—Occurrence of *Limax tenellus*; ROEBUCK (536).—Occurrence of *Limax tenellus* in Forth Area; EVANS (216).—Ayrshire: Several landshells; GODFREY, *Ann. Scott. Nat. Hist.* 1904, p. 192.—*Helix virgata* in Fife; EVANS, t. c. p. 192.—*Vertigo antivertigo* in Midlothian; GODFREY, t. c. p. 192.

Ireland:—Notes on some rare or local species; WELCH (642).—Notes on habitat of *Paludestrina jenkinsi*; WELCH, *Irish Natural.* xiii, p. 118.—List of some shells from North Derry; WELCH (643).—Temporary disappearance of *Paludestrina* from Larne Lough; WELCH, *Irish Natural.* xiii, p. 30.—*Cecilianella acicula* in Ulster; GRIERSON, t. c. p. 30.—Fauna of Bushy Park, Dublin; WELCH & STELFOX (645).—Mollusca of North Cork and Waterford; GRIERSON (268).—Sligo: Land and freshwater fauna; WELCH & STELFOX (646).—*Vertigo angustior* in Co. Carlow; GRIERSON, *Irish Natural.* xiii, p. 294.

Hebrides:—Landshells from Tiree; GODFREY, *Ann. Scott. Nat. Hist.* 1904, p. 193.

Faroës:—Land and freshwater Mollusca; COLLINGE (131).

Orkney Is.:—*Arion subfuscus*; COLLINGE (127).

France:—Shells from Brides-les-Bains, Savoy; DAUPHIN (173).—*Vitrina pellucida* in cave of Tharaulx (Gard); CHOBOUT, *Bull. Soc. Nimes* xxxi, p. 89.—Fauna of Maine-et-Loire completed with many n. varr., and n. spp. of *Anodonta*, *Helix*, and *Unio*; GERMAIN (249).—Note on fauna of Maine-et-Loire; GERMAIN, *C.R. Ass. Franc.* 1903, Pt. 1, p. 222; also (247).—Four shells from the Caverns of Lot; VIRÉ, *C.R. Ac. Sci.* cxxxviii, p. 826.—Fauna of department of the Orne; LÉBOUCHER & LETACQ (389).—Charente: *Unionidae*, with n. spp. of *Anodonta* and *Unio*; ROCHEBRUNE (529).—List of Helices from Dieppe; GERMAIN (248).—*Limnæidæ* from the Charente, with *L. rochebruni*, n. sp.; ROCHEBRUNE (532).—Fauna of Maine-et-Loire; MAISONNEUVE (408).

Denmark:—Notes on freshwater shells; JENSEN & SELL (332).

Germany:—Review of fauna; LEHMANN (393).—Distribution of land fauna; MARTENS (424).—Schleswig: Addenda to fauna; GOLDFUSS (262).—Wurtemberg: Review of *Vitrella*, with n. spp.; GEYER (250).—Bavaria: *Valvata geyeri*, n. sp.; MENZEL (442).—Fauna of the Lower Elbe district;

PETERSEN (479).—Fauna of Eppendorfer Lake near Hamburg ; ULMER, Verh. Ver. Hamburg naturw. xi, p. 21.

Switzerland :—Few landshells above 6000 feet in Canton Valais ; COLLIER, J. Conch. xi, p. 55.

Russia :—Fauna of Kursk and Orenburg ; LINDHOLM (396).—Few shells from Ourjoum, Viatka ; KROULIKOWSKY (374).

2. Circum-Mediterranean Region.

Circum-Mediterranean :—Distribution of *Helix vermiculata* ; CAZIOT (107) : Notes on several species ; CAZIOT (102).—Shells from various localities in the Alps ; DIEM, Jahrb. St. Gall. Ges. 1901–1902, p. 234.

France :—Land shells of Verdon, Lower Alps ; MARGIER (418).—Alpes-Maritimes : n. spp. of *Amalia* and *Limax* ; POLLONERA in CAZIOT (104).

Spain :—Few shells from Moncayo ; NAVAS, Bol. Soc. Aragon. Ci. Nat. iii, p. 146.—Zaragoza : Few land shells ; BOVIO, t. c. p. 47.

Majorca :—Landshells of ; HORSLEY (309).

Corsica :—Additions to fauna with n. spp. of *Helix* and *Hyalina* ; CAZIOT (106).

Italy :—New forms of *Murella* ; KOBELT (357).—South Italy : Notes on the fauna ; KOBELT (356).—Freshwater shells of Naples and district ; BELLINI (51).

Hungary :—New species of *Fruticicola* and *Xerophila* ; LAJOS (378) : Review of *Helicidae* ; SOOS (586) : New varr. of *Clausilia*, with *C. millenaris*, n. sp. ; CSIKI (158).—Shells from near Nagyvarad, with *Melanopsis hungarica*, n. sp. ; KORMOS (368).

Croatia :—Notes on fauna ; BRUSINA (89).

Hertegovina :—New species of *Coryna* and *Pholeoteras*, n. gen. ; STURANY (600).

Moravia :—*Hyalina cellaria* found Subterranean ; ABSOLON, Vestnik. Klub. Prostějove ii, p. 61.

Roumania :—Land and freshwater shells near Bucharest ; GAUDET, Bull. Soc. Bucarest xiii, p. 491.—List of eighteen landshells from Sinaia ; KOBELT (359).

Greece :—*Helix (Helicogena) pelagica*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Albania :—*Helix (Helicogena) oestreichi*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Turkey :—*Helix (Helicogena) frivaldszkyi, straubei*, n. spp. ; KOBELT in MARTINI & CHEMNITZ (426).

Bosphorus :—*Helix (Helicogena) antheri*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Crete :—List of land and freshwater shells, with *Clausilia holtzi*, n. sp. ; STURANY (601).

Corfu :—*Serrulina collasi*, n. sp. ; STURANY (600).

I. of Cephalonia :—List of shells from ; SANGIORGI, Atti Soc. Modena v, p. 94.

Cilicia :—*Helix (Helicogena) ciliciana*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Jerusalem :—*Helix (Helicogena) dickhauti*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Armenia :—Few shells from Urmia Lake ; MARTENS (423).

Egypt :—*Helix (Helicogena) rueppelli*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

Algeria :—*Ariunculus pallaryi*, n. sp. ; COLLINGE (128).

North-West Africa :—Fauna, with numerous varieties, and n. spp. of *Helix*, *Valvata*, and *Vaucheria* (n. gen.) ; PALLARY (466).

3. Central Asiatic Region.

Central Asia :—Land and freshwater shells, with n. varr., and n. spp. of *Cathaica* ; ANDREAE (16).—New species of *Pisidium* ; CLESSIN (120).—New species of *Buliminus* ; ROSEN (542).

Turkestan :—*Stenogyra retteri*, n. sp. ; KOBELT (362).—Western Turkestan : New species of *Cathaica* ; GUDE (273).

4. Chinese Region.

Lake Baikal :—List of a few species ; IAKHONTOV (321) : An unknown Mollusc ; KOROTNEFF (371).

China :—Notes on some shells, with n. spp. of *Eulota* and *Limnæa* from Shantung ; JONES & PRESTON (341).

Formosa :—*Stenothyra formosana*, n. sp. ; PILSBRY & HIRASE (496).

5. Japanese Region.

Japanese Empire :—New varieties, and n. spp. of *Alyceus*, *Eulota*, *Japonia*, *Kaliella*, *Macrochlamys*, *Nesopupa*, *Punctum*, *Succinea*, *Trishoplita*, and *Vertigo* ; PILSBRY & HIRASE (495) : On shells, with n. spp. of *Alyceus*, *Carychium*, *Eulota*, *Macrochlamys*, *Melania*, *Punctum*, *Tornatellina*, and *Zonitoides* ; PILSBRY & HIRASE (496) : *Plectopylis hirasei*, n. sp., Riukiu Is. ; PILSBRY (488) : Critical notes on *Clausilia* with new sections and species ; PILSBRY (494) : New forms of landshells, with n. spp. of *Alyceus*, *Chloritis*, *Cyathopoma*, *Cyclotus*, *Diplommatina*, *Eulota*, *Ganesella*, *Hirasea*, *Japonia*, *Kaliella*, *Macrochlamys*, *Microcystina*, *Opeas*, *Punctum*, *Pupa*, *Sitala*, *Trishoplita*, *Trochomorpha*, and *Zonitoides* ; PILSBRY & HIRASE (497) : *Ennea* (*Sinoennea*) *boettgeri*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

6. Atlantidean Region.

[None.]

b. PALÆOTROPICAL AFRICAN ZONE.

7. Central African Region.

Upper Nile :—A list of land and freshwater Mollusca ; HÄGG (279).

Central Africa :—New species, from various localities, of *Corbicula*, *Limax*, *Limicolaria* (sic), *Limnæa*, *Physopsis*, *Planorbis*, *Spathella*, *Subulina*, *Succinea*, *Trochonanina*, and *Vitrina* ; ROCHEBRUNE & GERMAIN (534).

Lake Tanganyika :—Critical review of the fauna, with notes on its affinities ; SMITH (575) : Origin of fauna ; HUDLESTON (314) : Notes on fauna ; GRAVIER, Bull. Mus. Paris ix, p. 347.

British East Africa :—*Limicolaria longa*, n. sp. ; PILSBRY in TRYON (619) : New species of *Ena* and *Subulina* ; SMITH (574).

German East Africa :—New species of *Pseudoglessula* ; SMITH (574).

E. Africa :—New species of *Spirotoxon* ; SIMROTH (567).

8. West African Region.

West Africa :—New species of *Limicolaria* and *Pseudachatina* ; PILSBRY in TRYON (619).

Corisco I. :—*Achatina occidentalis*, n. sp. ; PILSBRY in TRYON (619).

Cameroons :—*Varania loennbergi*, n. g. and n. sp. ; SIMROTH (567).

9. *South African Region.*

[None.]

10. *Malagasy Region.*

Nossi-Bé:—*Edentulina stumpffii*, n. sp. ; KOBELT in MARTINI & CHEMNITZ (426).

11. *Afro-Arabian Region.*

Abyssinia:—N. spp. of *Agriolimax* and *Atoxon* ; SIMROTH (567).

c. PALÆOTROPICAL ORIENTAL ZONE.

12. *Indian Region.*

Ceylon:—*Corilla erronea*, n. sp. ; GUDE (272): New species and varieties of *Cataulus* ; FULTON (238).

13. *Indo-Chinese Region.*

Indo-China:—Reprinted diagnoses of shells ; MORLET (450): List of Fauna ; FISCHER & DAUTZENBERG (223).

Cochin China:—*Harmandia castelneaui*, n. sp. ; ROCHEBRUNE (531).

Tonkin:—New species of *Hyriopsis* and *Unio* ; ROLLE (539).

Yunnan:—New species of *Jullienia* and *Melania* ; FULTON (241).

14. *Indo-Malay Region.*

Borneo:—*Amphidromus gossei*, n. sp. ; BARTSCH (36): Non-marine shells from Sambas, with *Amphidromus weyersi*, n. sp. ; DAUTZENBERG (174): *Opisthostoma beddomei*, n. sp. ; SMITH (576): List of some shells collected ; JONES & PRESTON (341).

Java:—New species of *Corbicula*, *Lagochilus*, *Melania*, and *Vivipara* ; BULLEN (92): New species of *Melania* ; FULTON (241).

Engano:—New species of *Trochomorpha* ; SYKES (607).

15. *Philippine Region.*

Philippine Islands:—Illustrations of some landshells ; HIDALGO (304).

d. AUSTRALIAN ZONE.

16. *Austro-Malayan Region.*

British New Guinea:—On some Helicoids, with *Euplecta pratti*, n. sp. ; GUDE (271).

Batjan:—New species of *Obba* and *Papuina* ; SYKES (607).

Gebi I.:—Shells from, with n. spp. of *Albersia*, *Leptopoma*, and *Papuina* ; FULTON (242): New species of *Papuina* and *Planispira* ; SYKES (607).

Waigiou:—*Albersia waigiouensis*, n. sp. ; SYKES (607).

Obi:—New species of *Ameria*, *Leptopoma*, *Perrieria*, and *Planispira* ; SYKES (607).

17. *Australian Region.*

Victoria :—Few landshells from near Melbourne ; ANON, Victorian Natural. xx, p. 125.

New South Wales :—*Corbicula faba*, n. sp. ; BULLEN (92).

Central Australia :—*Xanthomelon bednalli*, n. sp. ; PONSONBY (500).

Queensland :—Review of *Sphaerospira* section of *Thersites*, with *T. concors*, n. sp. ; FULTON (240).

18. *Austro-Polynesian Region.*

New Hebrides :—New species of *Melania* ; SYKES (603).

19. *Polynesian Region.*

Hawaiian Is. :—Notes on *Opeas*, with *O. henshawi*, n. sp. ; SYKES (605): Notes on *Tornatellina*, with n. spp. ; ANCEY (13): Notes on shells, with n. varr., and n. spp. of *Auriculella*, *Helicina*, *Kaliella*, *Lyropupa*, *Microcystis*, *Nesopupa*, *Succinea*, and *Vitrea* ; ANCEY (9): Several new subfossil *Succinea* from Hawaii, with notes on the deposit ; HENSHAW (297): New species of *Punctum* (Oahu), and *Vitrea* (Hawaii) and several species described as subfossil from Hawaii which may prove to be recent ; ANCEY (12): *Amastra rex*, n. sp. ; SYKES (608).

Marshall Is. :—N. spp. of *Helicina*, *Opeas*, and *Trochomorpha* ; BOETTGER (70): Of *Melania* ; BOETTGER (69).

20. *Neozelanian Region.*

New Zealand :—Notes on some shells with n. spp. of *Endodonta* and *Rhytida* ; SUTER (602): Catalogue of all the known species ; HUTTON (317): New species of *Endodonta* and *Laoma* ; WEBSTER (641): Some species of *Oncidiella* noted ; WISELL (656).

Chatham Is. :—*Oncidiella flavescens*, n. sp. ; WISELL (656).

e. NEANTARCTIC ZONE.

21. *Patagonian Region.*

Argentina :—New species of *Odontostomus* ; ANCEY (10).

22. *Chilian Region.*

[None.]

f. NEOTROPICAL ZONE.

23. *Peruvian Region.*

Peru :—New species of *Bulimulus*, *Bulimus* (?), *Nenia*, and *Systrophia* ; ROLLE (540).

24. *Colombian Region.*

Colombia :—New species of *Glandina* and *Strophocheilus* ; DA COSTA (161).

25. *Brazilian Region.*

Bolivia :—Some freshwater species, with n. spp. of *Ancylus*, *Paludestrina*, *Planorbis*, *Pyrgula* ; BAVAY (40) : *Drymaeus multispira*, n. sp. ; DA COSTA (161).

Brazil :—Occurrence of *Limax variegatus* ; RIBEIRO (524) : *Strophocheilus miersi*, n. sp. ; DA COSTA (161) : *Unionida* from Goyaz ; IHERING (322) : New species of *Bulinulus* and *Odontostomus* ; ANCEY (10).

26. *Mexican Region.*

Panama :—*Neocyclotus panamensis*, n. sp. ; DA COSTA (161).

Costa Rica :—*Streptostyla costaricensis*, n. sp. ; DA COSTA (161).

Mexico :—*Spiraxis cacahuamilpensis*, n. sp. ; HERRERA, Mem. Soc. Ant. Alzate v, p. 219 [1891] : New species of *Sonorella* ; BARTSCH (35) : *Glandina lamyi*, n. sp. ; FISCHER & CHATELET (222).

New Mexico :—*Ashmunella townsendi*, n. sp. ; BARTSCH (34) : Shells, with *Ashmunella walkeri*, n. sp. ; FERRISS (218).

Lower California :—*Sonorella merrilli*, n. sp. ; BARTSCH (35) : New subsp. of *Sonorella lohrii* ; PILSBRY (489).

27. *Caribbean Region.*

[None.]

g. NEARCTIC ZONE.

28. *American Region.*

United States :—Notes on *Somatogyrrus*, with n. spp. ; WALKER (637) : New varieties of *Lymnaea* ; BAKER (26, 27).—Eastern American *Ancylus* ; WALKER (638).

Alabama : List of shells collected, with some critical notes ; HINKLEY (307) : New forms of *Polygyra* ; CLAPP (116) ; *Omphalina pilsbryi* ; CLAPP (115).—Arizona : Shells, with *Oreohelix clappi*, n. sp. ; FERRISS (218) : New species of *Sonorella* ; BARTSCH (35).—Colorado : *Agriolimax agrestis* ; COCKERELL (121) : Few shells from Pike's Peak at 10,000 feet ; COCKERELL, Nautilus xvii, p. 130.—Delaware : List of shells collected ; RHOADS (523).—Florida : *Amnicola augustina*, n. sp. ; PILSBRY (486) : Northernmost habitat of *Liguus fasciatus* ; MOORE (449).—Indiana : Fauna of Cedar Lake ; BAKER (25) : Range of *Polygyra tridentata* var. *discoidea* ; DANIELS, Nautilus xviii, p. 92.—Iowa : Shells from near Des Moines ; HYNING, Nautilus xvii, p. 130.—Maine : Landshells of Ironbound Island ; BLANEY (59) : Landshells of Mt Desert ; COLTON (132).—Massachusetts : Few shells from Cape Cod ; JOHNSON (338).—New England : *Helix hortensis* ; WINKLEY (654).—New York : *Arion circumscriptus* at Niagara Falls ; COCKERELL, Nautilus xviii, p. 91.—Pennsylvania : *Margaritana margaritifera* ; CONNER (136).—Wisconsin : Collection of shells from ; BAKER (29).—Bermuda : Post tertiary landshells, some of which may be recent ; GULICK (274) : Few landshells ; DAVIS (181).

29. *Californian Region.*

West America :—Popular account of fauna, with systematic list ; KEEP (345).

California :—*Sonorella fisheri*, n. sp. ; BARTSCH (35) : *Limax maximus* ; BARTSCH, Nautilus xviii, p. 12 : *Limax maximus* ; VANATTA, t. c. p. 23 : *Limax maximus* and other slugs ; STEARNS (593).

30. *Canadian Region.*

Canada :—Additions to fauna ; WALKER, *Ottawa Natural*. xviii, p. 18.—
Ottawa : Occurrence of *Margaritana deltoidea* ; F. R. L., t. c. p. 91.

Alaska :—*Lymnæa randolphi*, n. sp. ; BAKER (27).

Newfoundland :—Occurrence of *Helicigona arbustorum* ; WHITEAVES,
Ottawa Natural. xvii, p. 192.

MARINE MOLLUSCA. [For Non-Marine, see p. 41.]

European Seas :—Review of *Ostrea* ; LOCARD (398).

Study of fauna of European Seas continued ; KOBELT (355).

Supplement to Mollusca of 'Porcupine' Expeditions commenced, with
n. spp. of *Cylichna* and *Retusa* ; SYKES (604).

1. *Arctic Province.*

Polar Sea :—*Pecten frigidus*, n. sp. ; JENSEN (333).

Jan Mayen :—*Portlandia kolthoffi*, n. sp. ; HÄGG (277).

Greenland :—Some species quoted ; HÄGG (277).

Spitzbergen :—Supplement to Mollusca collected by Russian Expedition ;
KNIPOWITSCH (353) : List of some species ; HÄGG (277).

2. *Boreal Province.*

North Atlantic :—*Spirialis retroversus* ; OSTENFELD & PAULSEN, *Medd.*
Gronland xxvi, p. 169.

Norway :—*Enteroxenos ostergreni*, apparently n. gen. and sp. ; BONNEVIE
(76).

3. *Celtic Province.*

North Sea :—Acclimatization of *Petricola* ; PELSENEER, C.R. Ass. Franc.
1903, pt. i, p. 223

British Isles :—Lancashire : Marine shells from Fleetwood ; JACKSON,
J. Conch. xi, p. 115.—*Barnea candida* on Wirral Peninsula ; STANDEN,
t. c. p. 49.—Review of fauna of Plymouth District ; MARINE BIOLOGICAL
ASSOCIATION (419).—Suffolk : List of Fauna ; GREENE (266).—Few shells
from Tetley Lock, Lincs. ; CASTLE, *Naturalist* 1904, p. 254.—Occurrence
of *Crepidula* in Whitstable Bay ; SAUNDERS, *Rep. East Kent Soc.* i, p. 45.
—*Ostrea angulata* on East Coast ; PLOWRIGHT, *Tr. Norfolk Soc.* vii, p. 753.
Northumberland : Species new to the coast ; LEBOUR (390).—Marine
shells from Achill ; MASSY, *Irish Natural.* xiii, p. 44.—Shells from Raghly ;
CHASTER (110).

Scilly Isles :—Few shells mentioned ; VALLENTIN, *J. Inst. Cornwall* xvi,
p. 129.

4. *Lusitanian Province.*

Atlantic Ocean :—Collection of Heteropoda, with n. spp. of *Cardiapoda*,
Carinaria, *Firola*, and *Firoloida* ; VAYSSIÈRE (627).

Channel Is. :—Addenda to fauna ; MARQUAND (420).

France :—*Synapticola perrieri*, n. gen. and sp. ; MALARD (410).—Gulf of
Gascony : Two or three shells dredged ; GRUVEL, *Pr. verb. Soc. Sci.*
Bordeaux 1897, p. 248.—Wimereux : *Doris giardi*, n. sp. ; ABRIC (3).—
Gulf of Marseilles : *Madrella aurantiaca*, n. sp. ; VAYSSIÈRE (629) :
Archidoris stellifera, n. sp. ; VAYSSIÈRE (628).—Arcachon : On some
Nudibranchs ; CUENOT (159).

Portugal:—Review of *Patellidæ*, Polyplacophora, and Scaphopoda; NOBRE (455).

Mediterranean:—List of shells from Llansa; MALUQUEZ Y NICOLAU (411): Notes on shells, with n. varr., and n. spp. of *Cyclonassa*, *Mitra*, and *Mytilus*; PALLARY (468): Notes on Cephalopods; JATTA (330).

Adriatic:—*Cerithium sykesi*, n. sp.; BRUSINA (89).

Capri:—Fauna near; LO BIANCO (397).

Black Sea:—Some shore forms; HAAPT (282).

Algiers:—Occurrence of *Natica prietoi*; ANCEY (11).

Gulf of Gabes:—Fauna, with supposed n. varr. and subspp., and n. spp. of *Clathromangilia* (?), *Eulima*, *Ginnania*, *Homotoma*, *Mangilia*, *Megaxinus*, *Philbertia*, *Retusa*, and *Turbonilla*; PALLARY (467).

5. Aralo-Caspian Province.

On the fauna; SOWINSKY (590).

6. West African Province.

West Africa:—List of shells from Rio de Oro; FONT Y SAGUÉ (230): *Chlamys weberi*, n. sp.; BAVAY (39).

Sierra Leone:—*Cardita umbonata*, n. sp.; SOWERBY (588).

St Helena:—*Helenella insolens*, n. gen. and sp.; CASEY (98).

Ascension I.:—*Marginella robusta*, n. sp.; SOWERBY (588).

7. South African Province.

South Africa:—New species of *Arca*, *Cardita*, *Cardium*, *Chlamys*, *Crassatella*, *Crenella*, *Cuspidaria*, *Nucula*, *Nuculana*, *Poromya*, *Tellina*, and *Venus*; SOWERBY (589).

Cape Colony:—List of shells from Port Alfred, with notes, and n. spp. of *Ampullarina*, *Ancilla*, *Bullia*, *Cardita* (?), *Carditella*, *Clathurella*, *Cultellus*, *Cynisca*, *Drillia*, *Ethalia*, *Eulima*, *Eulimella*, *Fusus*, *Glyphostoma*, *Hochstetteria*, *Lepton*, *Lima*, *Limopsis*, *Lucina*, *Mangilia*, *Marginella*, *Modiola*, *Nassa*, *Natica*, *Purpura*, *Rissoa*, *Rissoina*, *Semele*, *Tellimya*, *Tellina*, *Terebra*, *Theora*, *Trifora*, and *Turbonilla*; SMITH (578).

Natal:—*Sepia burnupi*, n. sp.; HOYLE (311).

8. Indo-Pacific Province.

E. Africa and Zanzibar:—On Nudibranchiata, with n. spp. of *Archidoris*, *Fracassa*, *Halgerda*, *Peltodoris*, *Platydorid*, *Sclerodoris* (n. gen.), *Staurodorid*, *Thordissa*, *Trippa*; ELIOT (208): n. spp. of *Chromodoris*; ELIOT (209): n. spp. of *Bornella*, *Marionia*, *Nembrotha*, *Notodoris*, *Pleuroleura*, *Trevelyana*; ELIOT (210).

Red Sea:—*Hexabranchus plicatus* and *Notarchus brevipes*, n. spp.; HÄGG (278).

Gulf of Oman:—New species of *Aclis*, *Daphnella*, *Eulima*, *Mangilia*, *Oscilla*, and *Rissoina*; MELVILL (438): New species of *Basilissa*, *Bittium*, *Cerithium*, *Clathurella*, *Cyclostrema*, *Cylichna*, *Daphnella*, *Ethalia*, *Mangilia*, *Mucronalia*, *Pleurotoma*, *Retusa*, *Scissurella*, *Trifora*, and *Turbonilla*; MELVILL (436).

Persian Gulf, &c.:—Review of *Cypreidæ*; MELVILL & STANDEN (440): New species of *Acteon*, *Mangilia*, and *Mitra*; MELVILL (436): New species of *Aclis*, *Ancistrosyrinx*, *Bullia*, *Clathurella*, *Columbella*, *Cyclostrema*, *Eulimella*, *Fenella*, *Fossarus*, *Lotorium*, *Mangilia*, *Philine*, *Rissoa*, *Scala*,

Syrnola, and *Turbonilla*; MELVILL (433): New species of *Eulimella*, *Odostomia*, *Omphalius*, and *Turritella*; MELVILL (438).

Arabian Sea:—*Muniola carbasea*, n. sp.; MELVILL (438): New species of *Eulimella* and *Pleurotoma*; MELVILL (433).

Bay of Bengal, &c.:—Deep Sea shells, with n. spp. of *Acmaea*, *Anatina*, *Atys*, *Capulus*, *Chiton*, *Clathurella*, *Cylichna*, *Drillia*, *Lacuna*, *Myrina*, *Pecten*, *Pleurotoma*, *Psammobia*, *Scaphander*, *Vesicomya*, and *Xylophaga*; SMITH (579).

Pacific Ocean:—*Peronodoris cancellata*, n. gen. and sp., and *Tritonia incerta*, n. sp.; BERGH (52).

Calcutta:—*Nassa gangetica*, n. sp.; PRESTON (502).

Ceylon:—New species of *Clathurella*, *Coralliophila*, *Cythara*, *Mactra*, *Macronalia*, *Murex*, *Nassa*, *Styloptygma*, and *Thala*; PRESTON (502): Cephalopods, with n. spp. of *Polypus*; HOYLE (313).

Singapore:—New species of *Odostomia* and *Turbonilla*; DALL & BARTSCH (172).

Borneo:—List of some shells collected; JONES & PRESTON (341): *Modiola sambasensis*, n. sp.; DAUTZENBERG (174).

East Indies:—A collection of Gymnosomata and Thecosomata, with n. spp. [cf. last year's Record for names]; TESCH (610).

Celebes:—*Amussium sibogai*, n. sp.; DAUTZENBERG & BAVAY (176).

China Sea:—*Chlamys ambiguus*, n. sp.; BAVAY (39): *Linguella variolosa*, n. sp.; BERGH (52): *Dolium magnificum*, n. sp.; SOWERBY (587): List of some Mollusca, with n. spp. of *Assimineae* and *Pecten*; JONES & PRESTON (341).

Philippines, Iolo, and Marianes:—Fauna commenced; HIDALGO (305).

Philippines:—*Murex multispinosus*, n. sp.; SOWERBY (587): *Lophiotoma microsticta*, n. gen. and sp.; CASEY (98).

Pacific Ocean:—*Chlamys cythereus*, n. sp.; BAVAY (39).

Hawaiian Islands:—*Cassia fortisulcata*, n. sp.; SMITH (573): Unnamed species of *Proneomenia* and *Rhopalomenia*; HEATH (287).

Pacific Is.:—Some species of Chitons enumerated and discussed; WISELL (656).

Temoe:—Notes on *Meleagrina*; SEURAT (555).

Marquesas Is.:—*Cirrobrachium filiferum* and *Rhynchoteuthis chuni*, n. sp.; HOYLE (312).

New Caledonia:—*Chlamys wilhelminae*, n. sp.; BAVAY (39).

9. Australo-Zealandic Province.

Southern Australia:—Distribution of fauna explained by a former isthmus across Bass' Straits; HEDLEY (291).

South Australia:—Notes on shells, with n. spp. of *Cancellaria*, *Cassidea*, *Nacella*, and *Stephopoma*; VERCO (630).

New South Wales:—Addenda to fauna, with critical notes, and n. spp. of *Atys*, *Capulus*, *Chione*, *Dacrydium*, *Daphnella*, *Epigrus*, *Philobrya*, *Phos*, *Rissoa*, *Stiva* (n. gen.), *Strebloceras*, and *Thraciopsis*; HEDLEY (292).

Victoria:—List of fauna continued; PRITCHARD & GATLIFF (505): New species of *Cyclopecten* and *Tellina*; PRITCHARD & GATLIFF (506).

Tasmania:—New species of *Daphnella* and *Philippiella*; HEDLEY (292): *Alloidoris marmorata*, n. gen. and sp., and *Discodoris dubius*, n. sp.; BERGH (52).

New Zealand:—On shells, with n. spp. of *Cecum*, *Couthouyia*, *Eulima*, *Leiostraca*, *Liotia*, *Pleurodon*, *Puncturella*, *Rissoa*, *Schismope*, *Scissurella*, and *Verticoprionus* (n. gen.); HEDLEY (293): Catalogue of all the known species; HUTTON (317): N. spp. of *Archidoris* and *Homoiodoris*; BERGH (52): *Onithochiton marmoratus*, n. sp.; WISELL (656).

10. *Japonic Province.*

Japan :—Notes on Gastropods, with new forms, and n. spp. of *Cerithium*, *Clathurella*, *Collonia*, *Columbella*, *Cyllene*, *Daphnella*, *Drillia*, *Euchelus*, *Fusus*, *Mangilia*, *Mitra*, *Ocenebra*, *Parviterebra* (n. gen.), *Polinices*, *Purpura*, *Rissoa*, *Rissoina*, *Siphonaria*, *Terebra*, *Thala*, *Tornatina*, *Tritonidea*, *Trochus*, and *Turbonilla*; PILSBRY (492): Notes on Pelecypods, with new forms, and n. spp. of *Arca*, *Cardium*, *Chione*, *Kellia*, *Mactra*, *Ostrea*, *Pitar*, *Spisula*, and *Tellina*; PILSBRY (493): New species of *Chlamys*; BAVAY (39): *Cuthona* (?) *bicolor*, n. sp.; BERGH (52).

11. *Aleutian Province.*

Alaska :—*Limifossor talpoideus*, n. gen. and n. sp. of *Amphineura*; HEATH (287).

Kuril Is. :—New species of *Buccinum*; PILSBRY (490).

12. *Californian Province.*

West America :—Popular account of fauna, with systematic list; KEEP (345): Origin of fauna; SMITH (581).

N. America, West Coast :—*Melibe pellucida*, n. sp.; BERGH (52).

California :—*Odostomia americana*, n. sp.; DALL & BARTSCH (172): *Dentalium vallicolens*, n. sp.; RAYMOND (512): *Coryphella californica*, n. sp.; BERGH (52): *Periploma sulcata*, n. sp.; DALL (169): New species of *Pleurotoma*; RAYMOND (513).—List of shells dredged off Santa Catalina Island; LOWE (402).

13. *Panamic Province.*

Central America :—*Chiton angustus*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (426).

Panama :—N. spp. of *Froekenina*, *Stauroteuthis*, and *Tremoctopus*; HOYLE (312).

Mexico :—*Loligo diomedea*, n. sp.; HOYLE (312).

Colombia :—*Chiton sowerbyanus*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (426).

Galapagos Is. :—*Mastigoteuthis dentata* and *Polypus oculifer*, n. spp.; HOYLE (312).

14. *Peruvian Province.*

Chile :—*Chiton glaber*, n. sp.; CLESSIN in MARTINI & CHEMNITZ (426).

15. *Antarctic Province.*

On the distribution of the Antarctic fauna; PELSENER (475).

Magellan Region :—List of sp. of *Trophon*, with 14 n. spp.; STREBEL (599).

Falkland Islands :—Notes on fauna; VALLENTIN (623).

16. *Argentine Province.*

[None.]

17. *Caribbean Province.*

Brazil :—*Fusus brasiliensis*, n. sp.; GRABAU (265).

18. *Transatlantic Province.*

Florida :—*Pyramidella dodona*, n. sp. ; DALL & BARTSCH (172).

Maine :—Notes on shells from Frenchman's Bay ; BLANEY (58).

Massachusetts :—Few shells from Cape Cod ; JOHNSON (338).

Bermudas :—Notes on fauna, with n. spp. of *Dolabrifera*, *Elysia*, *Facelina*, *Lamellidoris*, *Placobrachopsis*, *Runcina*, and *Tethys* ; VERRILL (631) : Notes on fauna with n. varr., and n. spp. of *Cerithium* and *Gastrochaena* ; DAVIS (181).

GEOLOGICAL.

N.B.—The remarks given at the beginning of the preceding section, p. 37, also apply here.

Classification of several Families of Gastropoda, with new genera, sections, and species ; COSSMANN (140).—Catalogue, with critical notes, of DeFrance collection ; BIGOT & MATTE (54).—Revision of Cephalopoda of Strachey collection ; CRICK (155).—On genera *Actinocamax* and *Atractilites* ; CRICK (156).—Review of fossil *Vermetidae*, with n. spp. ; ROVERETO (544).—Notes on *Orthoceras* ; JAEKEL, Zeitschr. Deutsch. geol. Ges. lv, Protok. p. 67.—Note on type of *Aviculopecten* ; HIND, Amer. Geol. xxxiv, p. 200 ; GIRTY, t. c. p. 332 : GIRTY (257).—Types of several species figured, with notes ; PALAEONTOLOGIA UNIVERSALIS (464).

Lists of fossils from Belfast ; LAMPLUGH, &c., Geology...Belfast. Mem. geol. Surv. Ireland.—Few fossils from Calabria ; STEFANO, Mem. Carta geol. Ital. ix, App.—Lists of fossils from French Pyrenees ; ROUSSEL, Bull. Carte geol. France xv, p. 23.—Lists of fossils from various formations of Lot, Aveyron, Tarn, and Tarn-et-Garonne ; THEVENIN, Bull. Carte geol. France xiv, p. 353.—Fossils from various Danish formations ; USSING, Danmarks geol. Unders. iii, No. 2.—Fauna of the Peninsula of Taman ; ANDRUSOW (17).

1. POST-TERTIARY.

Specific identity of *Vivipara diluviana* and *clactonensis* ; KENNARD & WOODWARD (348).

British Isles : List of shells from gravel at Dumball Island ; BOLTON (74).—Shells from Cleve Hill ; HINTON & KENNARD (308).—Holocene shells from Totland Bay ; KENNARD & WARREN (347).—Infra-glacial landshells from near Bridlington Quay ; LAMPLUGH (379).—Landshells in infra-glacial Chalk-rubble near Bridlington ; LAMPLUGH, Rep. Brit. Ass. 1903, p. 659.—Few shells from excavation near Watford ; LONES, Tr. Hertfordsh. Soc. xii, p. 17.—List of shells from gravel pit at Swanscombe, Kent ; STOPES (597).

Iceland :—Post-Tertiary fossils ; JENSEN (334).

Sweden :—Post-Tertiary shells ; KURCK (376).—Fossils from Uddevalla ; LINDSTROM, Sveriges geol. Unders. Afh. Ser. Ac, No. 3 : BLOMBERG, op. cit. No. 4.

Denmark :—*Ostrea edulis* ; NORDMANN (458).—Post-Tertiary fossils from Havbunden ; NORDMANN (457).

Germany :—Tertiary fossils in diluvial of Pommern ; DEECKE (184).—Few Post-Tertiary shells from Dingelstädt ; NAUMANN, Erlaut. Geol. Karte Preussen 112, Abt. 55, No. 42, p. 46 : also from Lendenfeld ; KAISER, op. cit. No. 48, p. 41.—Few fossils from Frankfurt ; FISCHER (224).—Diluvial freshwater shells from Holstein ; GAGEL, Jahrb. geol. Landesanst. Berlin xxii, p. 293.—Pre-glacial marine fossils in East Germany ; MAAS, Zeitschr. Deutsch. geol. Ges. lvi, Mt. p. 21.—*Valvata andreana* ; MENZEL (442).—Diluvial fauna of Lubeck ; RANGE (510).—Pleistocene fossils from Saxony ; WÜST (664).

France :—Quaternary shells near Paris ; BÉDÉ (44).—Quaternary shells from Arrest (Somme) ; BÉDÉ & VINCHON (46).—Quaternary fossils near Nice ; DEPÉRET & CAZIOT (188).—Fauna of strata in Department of Aude ; DONCIEUX (196).

Spain :—Quaternary fossils from the plain of San Juan de Vilasar ; ALMERA (7).

Italy :—Neogene fauna of Gulf of Naples ; BELLINI (50).—Post-pliocene marine shells from Calabria, with n. spp. ; CREMA (150).—Post-Tertiary marine shells from Nettuno ; MELI, Boll. Soc. geol. Ital. xxiii, p. xxxvi.

Austria :—Landshells with *Elephas* near Vienna ; TROLL, Verh. geol. Reichsanst. 1904, p. 244.

Hungary :—Post-Tertiary shells ; HANDMANN, Verh. geol. Reichsanst. 1903, p. 343.—*Succinea oblonga* in diluvial ; KORMOS (369).

Moravia :—Few diluvial landshells ; KNIES, Vestnik. Klub. Prostejove iv, p. 78.

Turkey :—Fossils from Dardanelles ; NEWTON (454).

Russia :—Post-Tertiary fossils from the basin of the Manytch ; BOGATSCHEW, Mem. Com. geol. St. Petersb. xxii, pp. 73, 609.—Fossils from Lublin ; KRISHTAFOVICH, Annuaire geol. Min. Russ. vii, p. 95.—Fossils from district in sheet 16 of map of Russia ; TOUTKOVSKY, Mem. Com. geol. St. Petersb. xxii, p. 516.

Japan :—Diluvial fossils from Shimosa ; N. K., J. geol. Soc. Tokyo xi, p. 491.

Polynesia :—Shells from deposits on Hawaii, with n. spp. of *Succinea* ; HENSHAW (297) : see also ANCEY (12).

Africa :—New variety of *Murex trunculus* from Tunis ; BÉDÉ (42).—Few Quaternary shells from Sfax, Tunis ; BÉDÉ (43).—List of fossils from Raised Beach in Tunis ; FLICK & PERVINQUIÈRE (229).—List of Post-Tertiary fossils from Algerian Coast ; LAMOTHE, Bull. Soc. geol. France iv, p. 29 ; see also pp. 40 & 41.—Post-Tertiary marine shells from South Africa ; JOHNSON (340).

North America :—Pleistocene fauna of Sankaty Head, Mass. ; CUSHMAN, Amer. Geol. xxxiv, p. 169.—Note on freshwater shells in American Loess ; SHIMEK, Bull. geol. Soc. Amer. xv, p. 576.—Notes on fossils of North American Loess ; SHIMEK (557).

Bermuda :—Landshells, with n. spp. ; GULICK (274).

2. TERTIARY.

Teredo fistula, Lea, is a *Teredina* ; JOHNSON (337).—Review of the *Gisortia* section of *Ovula* ; MAYER EYMAR (428).—New species from Lower Tertiary ; MAYER-EYMAR (427).—Notes on phylogeny of *Fusus* and allies with n. spp. ; GRABAU (265).—New variety of *Planorbis multiformis* ; KORMOS (370).—*Poroleda tatei*, n. n. ; HEDLEY (295).—Notes on *Orygoceras fuchsi*, Pannonian ; LÖRENTHEY, Foldtani Kozl. xxxiii, p. 518.—Fossils from Western Jura ; SCHMIDT, Centrbl. Mineral. 1904, p. 609.

Greenland :—Fossils from East Greenland ; RAVN (511).

Germany :—Shells near Oppeln ; MICHAEL, Jahrb. geol. Landesanst. Berlin xxii, p. 372.—Miocene fossils from near Unter- und Oberkirchberg ; KRANZ, Centrbl. Mineral. 1904, pp. 481, 528, 545.—Miocene land fauna of Oppeln, with n. spp. ; ANDREAE (15).—Few fossils from Frankfurt ; FISCHER (224).—Miocene fauna of three localities in Mecklenburg ; METZMACHER (446).—*Clausilia fischeri*, n. sp., from Upper Oligocene of Hochheim ; BOETTGER (64).—Notes on *Emmericia* with a n. sp. from Frankfurt ; BOETTGER (65).

Belgium :—Abundance of *Rostellaria ampla* near Uccle ; DELHEID (186).

France :—Illustrations of all the Fauna of the Paris Basin commenced ; COSSMANN & PISSARRO (144).—Fauna of the Faluns of Haguenau ; COUFFON (146).—Miocene fauna of Rennes ; DOLLFUS (193).—New species of Gastropods from Paris Basin ; CHÉDEVILLE (112).—List of Paris Basin fauna continued ; CHÉDEVILLE (111).—N. spp. of *Rimella*, *Cyprea*, *Siphonalia*, *Fusus* from the Paris Basin ; CHÉDEVILLE (113).—Additions to Pelecypod fauna of Cotentin, with n. spp. ; COSSMANN & PISSARRO (145).—Freshwater forms from Loire Basin ; DOLLFUS (194).—Lower Miocene Fauna of Loire Basin continued, with n. spp. of Pelecypoda ; DOLLFUS & DAUTZENBERG (195).—List of marine shells from Saint-Gobain (Ypresian) ; LHOMME (395).—Thanetian fossils from Berru ; MOLOT (448).—Fauna of strata in Department of Aude ; DONCIEUX (196).—Eocene and Oligocene fauna of Languedoc, with n. spp. ; ROMAN (541).—Pliocene fossils near Nice ; DEPÉRET & CAZIOT (188).—List of shells of the Redonian of Ille-et-Vilaine ; PEYROT (483).—Few fossils from Haguenau ; COUFFON, Bull. Soc. Angers xxxiii, p. 54.—Note on *Scutellidæ* of Gironde ; FALLOT, Pr.-verb. Soc. Linn. Bordeaux 1902, p. 3.—Pelecypods from Loire-Inférieure with many n. spp., and *Choniocardia*, n. subgen. ; COSSMANN (143).

Portugal :—On fauna with n. spp. ; DA COSTA (160).

Switzerland :—List of fossils from near St Gallen ; FALKNER & LUDWIG (217).

Italy :—Few shells from Santerno ; SANGIORGI, Riv. ital. Pal. x, p. 77.—Supplement to fauna of Piedmont and Liguria, with index ; SACCO (546).—Miocene fossils from Tagliacozzo ; LUPI, Boll. Soc. geol. Ital. xxiii, p. xxviii. Pliocene fossils from Capitanata ; CHECCHIA-RISPOLI, t. c. p. 292.—Miocene fossils from Capitanata ; CHECCHIA-RISPOLI, t. c. pp. 295, 298.—On forms of *Lucina* from Catania ; STEFANO (594).—*Fusus contrarius* in Pliocene of Catania ; FUSCO (244).

Austro-Hungary :—Species of *Melanopsis* from Nagyvarad ; KORMOS (370).—Occurrence of *Pyrgulifera* at Labatlan ; LÖRENTHEY, Foldtani Kozl. xxxiii, p. 524.—Few Lower Miocene shells from Braunkohlen ; SCHLOSSER, SB. Ak. Wien cxi, Abth. i, p. 1123.—Few Sarmatian fossils from Szaszvaros ; HALAVATS, Jahresber. Ungarn geol. Anstalt. 1901, p. 108.—‘Congerienfauna’ of Leobersdorf and neighbourhood ; HANDMANN (281).—Illustrations of Tertiary fossils, many apparently being new, from Hungary, &c. ; BRUSINA (88).—Pelecypods from Häring in Tirol, with n. spp. ; DREGER (197).—Lower Oligocene fauna of Przemyśl, with n. spp. ; WOJCIK (657).—Notes on fossils from Moravia ; RZEHAŁ, Verh. Ver. Brunn xli, p. 34.—Pteropoda from Budapest ; LÖRENTHEY (400).

Moldavia :—Fossils from North Moldavia ; SIMIONESCU, Publ. Ac. Romana vii & ix : also (564).

Montenegro :—Middle Miocene fossils with *Radula martelli*, n. sp. ; NELLI, Boll. Soc. geol. Ital. xxiii, p. 149.—Miocene fossils, with n. sp. of *Pecten* ; VINASSA DE REGNY, t. c. p. 307.

Dalmatia :—Eocene fossils, with n. spp. ; DAINELLI (164).—Middle Eocene fossils from Ostrovisa ; DAINELLI (163).

Turkey :—Fossils from Dardanelles ; NEWTON (454).

Russia :—Some fossils from Kriwoi Rog (Jekaterinoslaw) ; FAAS, Trudui geol. Kom. n. s. 10.—Fauna of district of Saratov, with n. spp. ; ARKHANGHEL'SKII (22).—Middle Miocene fauna of Volhynia ; LASKAREW (387).—Middle Miocene fauna of Tomakowka, with n. spp. ; MIKHAILOVSKY (447).—Miocene fossils from Temir-Khan-Choura ; KALITSKY, Mem. Com. geol. St Petersburg. xxii, p. 33.—Fossils from River Sal ; BOGATCHEW, t. c. p. 562.

Asia :—Three n. spp. of Pliocene (?) Cones from Japan ; PILSBRY (492) : one renamed ; PILSBRY, P. Ac. Philad. 1904, p. 550.—Fossils from Hitachi Province ; JIMBO, J. geol. Soc. Tokyo xi, p. 399.—Fossils from Asiatic Russia ; JIMBO, t. c. p. 222.—Fossils from Ferghana ; BÖHM (61).

Africa :—Lower Miocene shells between Cairo and Suez ; BARRON (33).—Few Lutetian fossils from the Soudan ; LAPPARENT, C.R. Ac. Sci. cxxxix, p. 1186.—Fossils, probably Eocene, from Kamerouns, with n. spp. ; OPPENHEIM (460).

North America :—*Ostrea arrosis*, n. sp., Alabama ; ALDRICH (6).—*Genota riversiana*, n. sp., California ; RAYMOND (514).—*Turbinella* (*Psilocochlis*, n. subgen.) *mcCallie*, n. sp., Georgia ; DALL (170).—New species of *Cancellaria* and *Linearia* (?) from the United States ; JOHNSON (336).—Eocene fauna of Maryland, with n. spp. ; CLARK & MARTIN (117).—Miocene fauna (except Pelecypoda) of Maryland, with n. spp. ; MARTIN (425) : Pelecypod fauna, with n. spp. ; GLENN (259).—Few Lower Miocene fossils from California ; MERRIAM (444).

South America :—Few fossils from Patagonia ; TOURNOUER, Bull. Soc. geol. France iii, p. 463.—Fauna of strata of Quiriquina I., with n. genn. and n. spp. ; WILCKENS (652).

Australasia :—Shells from Happy Valley, near Adelaide, with n. sp. of *Septifer* ; BASEDOW (37).—Eocene fossils from Cape Patton, Victoria ; DENNANT, Rec. Geol. Surv. Victoria i, p. 36.—Miocene fossils from Horsham, Victoria ; DENNANT, t. c. p. 37.—Catalogue of Fauna of Victoria, South Australia, and Tasmania ; DENNANT & KITSON (187).—Fossils from the Barwon Valley, Victoria ; HALL & PRITCHARD (280).—New species of Gastropods from the older Tertiary of Victoria ; PRITCHARD (504).

3. SECONDARY.

Notes on *Ammonites plicatus* and *biplex* ; BLAKE (57).—Secondary species of *Inoceramus*, with a new species ; AIRAGHI (5).—On *Lithiotis*, with *Cochlearites*, n. gen. ; REIS (518).—Secondary fossils from Rokycan ; ISERLE (324).—Fossils from Sarajevo, with n. spp. ; KITTL (352).—Fossils from Madagascar ; DOUVILLÉ, Bull. Soc. geol. France iv, p. 207.—Two Cephalopods from North-West India ; CRICK (155).

Cretaceous :—An Endophyte found in a Cretaceous Bivalve ; ETHERIDGE (215).—On Senonian, Danian, and Turonian *Hippurites*, with n. spp. ; TOUCAS (617).—Upper Chalk fossils from Northern Alps ; SCHLOSSER, Centrbl. Mineral. 1904, p. 654.

British Isles :—Few Molluscs from North Lincolnshire ; BURNET, Geol. Mag. i, p. 172.—Note on *Actinocamax* of Flamborough Head ; CRICK (156).—Few Upper Gault fossils from Barnwell ; FEARNSIDES, Quart. J. Geol. Soc. lx, p. 360.—Cretaceous fossils near Scarborough ; FOX-STRANGWAYS (232).—Few fossils from near Croydon ; HINDE, Geol. Mag. i, p. 482.—Fossils from near Merstham and Croydon ; HOLMES, P. Croydon Club 1904, p. 45.—Lists of English fauna ; JUKES-BROWNE (343).—Fossils of junction beds with Liás at Charmouth ; LANG, Geol. Mag. i, p. 124.—Lists of fossils from Yorkshire Coast ; ROWE (545).—Review of British *Limidæ*, with n. spp. ; WOODS (659).

Germany :—Lower Chalk Ammonites of Helgoland, with n. spp. ; KOENEN (366).—Saxony, list of fossils from ; PETRASCHECK (481).—*Aucella keyserlingi* from Neocomian of Achim ; WOLLEMAN, Zeitschr. Deutsch. geol. Ges. lv, Mt. p. 34.—Lower Senonian of Brunswick ; WOLLEMAN, Centrbl. Mineral. 1904, p. 33.—Senonian fossils from Königslutter ; WOLLEMAN (658).

France :—Lists of fossils from Sainte Ménéhould ; COLLET (122).—New species from France ; COSSMANN (141).—Fossils from the Corbières ; GROSSOUVRE (270).—Few Cenomanian fossils from Saint-Jouin ; NIBELLE, Bull. Soc. Rouen xxxix, p. 177.

Spain :—Some Spanish forms mentioned ; MALLADA, Mem. Com. geol. Espana v.

Switzerland :—Lower Cretaceous fauna of Western Swiss Jura ; BAUMBERGER (38).—Few Gault and Urgonian fossils from near Bregentz ; STIZENBERGER, *Eclog. geol. Helvet.* viii, p. 221.

Italy :—Few Urgonian fossils from Capri ; PARONA, *Atti Acc. Lincei* xiii, pt. 1, p. 165.—Occurrence of *Biradiolites* near Schio ; PARONA (470).

Austro-Hungary :—Lists of fossils from Eastern Bohemia ; JAHN (328).—Senonian fossils from River Aranyos ; PALFY, *Jahresber. Ungarn geol. Anstalt* 1901, p. 79.—Cenomanian fossils from Bohemia ; JAHN, *Verh. geol. Reichsanst.* 1904, p. 297.—Two new species of *Inoceramus* from Siebenburgen ; PALFY (465).—Few fossils from East Bohemia ; PETRASCHECK, *Verh. geol. Reichsanst.* 1904, p. 59.—Fauna of Urmos (Transylvania), with n. spp. ; SIMIONESCU (563).—Neocomian Fauna from the South Carpathians, with n. spp. ; SIMIONESCU (561).—Few fossils from the Iser Region ; ZAHÁLKA, *SB. Bohmisch. Ges.* 1903, No. xxxii.

Poland :—Wealdian and Neocomian fossils from Poland ; MICHALSKI, *Mem. Com. geol. St Petersburg.* xxii, p. 339.

Asia :—Fossils from Ferghana ; BÖHM (61).—Species of *Eurydesma* from the Salt Range ; KOKEN (367).—Fossils from between Cretaceous and Jura of Sula Is., with n. spp. ; BOEHM (60).—New Cephalopoda from the Hokkaido ; YABE (665).

Africa :—Few fossils from Madagascar ; BOULE & THEVENIN, *Bull. Soc. geol. France* iii, p. 435.—Fossils from Somaliland, with n. spp. ; DACQUÉ (162).—Fauna of deposit at Umkwelane Hill, Natal, with n. spp. ; ETHERIDGE (211).—On fauna of Egypt, with n. spp. ; FOURTAU (231).—Few fossils from the Sahara ; HAUG, *C.R. Ac. Sci.* cxxxviii, p. 1529.—Fauna from Kameruns, with n. spp. of Cephalopods ; SOLGER (585).—New species of *Pseudocucullæa*, n. gen., from the Kameruns ; SOLGER (584).

America :—New forms of Molluscs from Argentina, with *Pseudotyllostoma*, n. gen. ; IHERING (323).—Fossils from Rio Negro, with n. sp. of *Gryphæa* ; BÖHM, *Zeitschr. Deutsch. geol. Ges.* lv, Protok. p. 71.—Collection of Ammonites from Texas, with n. spp. ; LASSWITZ (388).—Laramie Group : *Parreysia barnumi*, n. n. for *Unio browni*, Whitf. ; PILSBRY, *Nautilus* xviii, p. 12.—Few fossils from Arizona ; STANTON in RANSOME, *Pap. U. S. Geol. Survey* xxi, p. 70.—Six new species of *Unio* from the Laramie Group ; WHITFIELD (630).—Few fossils from Upper Chalk of South Patagonia ; WILCKENS, *Centrbl. Mineral.* 1904, p. 597.

Australasia :—Occurrence of *Ptychoceras* and other n. spp. in Northern Territory of South Australia ; ETHERIDGE (213).—Notes on Australian fossils with n. spp. ; ETHERIDGE (214).

Jurassic :—Notes on some species of Ammonites ; HEALEY (284).

British Isles :—Review of *Hildoceratidæ* of British Isles with n. gen. and n. spp. ; BUCKMAN (90).—Few fossils from Portland series at Haddenham ; DAVIES, *P. Geol. Ass.* xviii, p. 385.—Fossils from Scarborough ; FOX-STRANGWAYS (232).—Lower Oolite forms near Bristol ; TUTCHER (621).—Oolite fossils from Cheltenham ; RICHARDSON (526).

East Greenland :—Fossils from East Greenland, with n. spp. ; MADSEN (407) ; also SKEAT (568).

Germany :—Occurrence of *Diceras* in Hanover ; MENZEL, *Zeitschr. Deutsch. geol. Ges.* lvi, Protok. p. 10.—Fauna of the Solenhofen Plattenkalk ; WALTHER (640).

France :—Upper Jurassic Cephalopods and Gastropods from Calvados, with n. spp. ; BIGOT (53).—Few Jurassic fossils from Calvados ; DOUVILLÉ, *Bull. Soc. geol. France* iv, p. 106.—*Ammonites baylei* from Besançon ; PETITCLERC (480).—Fauna of the zone of *Lioceras concarum* at Mont d'Or, with n. spp. ; RICHE (527).

Spain :—Few fossils from various formations from Ortigosa ; VICENTE, *Bol. Soc. Aragon. Ci. nat.* ii, p. 127.

Switzerland :—Fauna of Ledonian Jura continued, with many n. spp., and n. genn. ; LORIOLE (401).—Jurassic *Belemnites* from Chablais ; ROESINGER, Eclog. geol. Helvet. viii, p. 211.—On a *Harpoceras* from the Lower Dogger ; STRÜBIN, Abh. Schweiz. pal. Ges. x.

Italy :—Upper Jura fossils from Bassano, with n. spp. ; CAMPANA (95).

Austro-Hungary :—Addenda to Pelecypod fauna of 'Stramberger Schichten,' with n. spp. ; REMEŠ (519).—Fossils from Olomutschan ; TRAUTH (618).

South Carpathians :—Callovian Fauna of Lupului (Rucar), with n. spp. ; SIMIONESCU (562).

Poland :—On some Polish fossils ; SIEMIRADZKI, Kosmos polski. xxviii, p. 503.—Oxfordian and Kimeridgian fossils, with n. spp. ; SIEMIRADZKI (560).—Jurassic fossils ; SIEMIRADZKI (559).

Russia :—*Nuculidæ* of Jura of European Russia, with n. spp. ; BORISSJAK (78).—Jura fossils from Daghestan ; RENZ (520).

Asia :—Cephalopod fauna of Spiti Shales, with many n. spp., and *Spiticeras*, n. subgen. ; UHLIG (622).—New Ammonites from Echizen and Nagato, Japan ; YOKOYAMA (668).—New species from Rikusen, Japan ; YOKOYAMA (667).

Australasia :—Fossils from Western Australia ; CHAPMAN (108).

Lias :—

British Isles :—Rhaetic fossils of South Wales direct line, with n. spp. of Pelecypoda ; REYNOLDS & VAUGHAN (522).—Few fossils from the Vale of Evesham ; RICHARDSON, P. Geol. Ass. xviii, p. 391.—Fossils from Cheltenham ; RICHARDSON (526).—Lists of fossils from near Bristol ; SHORT, Quart. J. Geol. Soc. lx, p. 170.—Fossils near Keynsham ; VAUGHAN & TUTCHER (625).—Fossils from S. Wales, STRAHAN & CANTRILL, Geology...S. Wales Coalfield, Part vi, Mem. geol. Surv. England.

Germany :—Few Upper Lias fossils from North-west Germany, with n. sp. of *Avicula* ; HOYER, Centrbl. Mineral. 1904, p. 385.

France :—Lower Lias Pelecypods from La Vendée, with n. spp. ; COSSMANN (142).

Spain :—List of fossils from Ricla (Zaragoza) ; NAVAS, Bol. Soc. espan. iii, p. 65.—Few fossils from various formations from Ortigosa ; VICENTE, Bol. Soc. Aragon. Ci. nat. ii, p. 127.

Portugal :—List of fossils from Lower Lias and Sinemurian ; CHOFFAT, Commis. geol. Portugal v, p. 49.

Italy :—Cephalopods from Monte Cetona, with many n. spp. ; FUCINI (236).—Pelecypods from Province of Palermo, with n. spp. ; MERCIAI (443).

Austro-Hungary :—Notes in Ammonites, with n. sp. of *Frechiella* from Hungary ; PRINZ (503).—Few fossils from Freistadtel ; RZEHAKE, Verh. geol. Reichsanst. 1904, p. 132.

Bosnia :—Cephalopods ; BECK (41).

Trias :—Notes on fossils in divisions of Rhaetic ; FUCHS, Verh. geol. Reichsanst. 1904, p. 293.—Notes on *Medlicottia* and *Episageceras*, n. gen. ; NOETLING (456).

British Isles :—Keuper fossils from Cheltenham ; RICHARDSON (526).—Fossils from S. Wales ; STRAHAN & CANTRILL, Geology...S. Wales Coalfield, Part vi, Mem. geol. Surv. England.

Germany :—Fossils from Black Forest region ; BROMBACH, Mt. Badisch. Geol. Landesanst. iv, p. 429.—Few Keuper fossils from near Apolda ; COMPTER, Zeitschr. Naturw. lxxvii, p. 81.—Fossils from Vorarlberg ; FIEDLER, Zeitschr. Deutsch. geol. Ges. lvi, Mt. p. 8.—Fossils from South German Muschelkalk ; HENKEL, t. c. p. 218.—Notes on German fossils ; LANGENHAM (386).—Fauna of Central Germany, with n. genn. and n. spp. ; PICARD (485).

France:—Fossils from Bugarach; GROSSOUVRE, Bull. Soc. Aude xiv, p. 50.

Italy:—New species of *Lima* and *Pinna* from Muschelkalk of Recoaro; TOMMASI (614).—Lists of fossils from near Predazzo, with n. spp.; PHILIPP (484).

Sicily:—Cephalopoda from western side of Island; GEMMELLARO (246).

Sardinia:—Lists of fossils from; TORNQUIST (616).

Austria:—Pelecypoda of the *Pachycardium*-strata of the Seiser Alp, with n. spp.; BRÖILI (85).

Montenegro:—Few fossils; CAMPANA, Atti Soc. Lincei xiii, Sem. 2, p. 554.—Cephalopoda, with n. spp.; MARTELLI (422).

Asia:—Fossils from Eastern Asia; SCHELLWIEN (548).—Fauna of the Bären Is., with n. spp.; BÖHM (62).—Occurrence of *Halorites* in Baluchistan; VREDENBURG (636).

4. PRIMARY.

Lists of fossils from Spiti; HAYDEN, Mem. geol. Surv. India xxxvi, pt. 1. —Primary fossils from Sarajevo, with n. spp.; KITTL (352).

Palæozoic:—

Asia:—Fossils from Eastern Asia; SCHELLWIEN (548).—The fauna of Asia; TSCHERNYSCHEW (620).—Ammonites of Japan; YABE, J. geol. Soc. Tokyo xi, p. 26.

Australasia:—On some Victorian Pteropods, with n. spp.; CHAPMAN (109).

Permian:—Note on *Cyclolobus haydeni*, Diener; DIENER (190).

Russia:—Notes on *Schizodus planus*; YAKOVLEV (666).

Asia:—Fauna of the Himalayas, with n. spp.; DIENER (191).

Australasia:—Fossils from Western Australia; CHAPMAN (108).

Carboniferous:—Notes on *Pericyclus fasciculatus*, McCoy; CRICK (154).—*Pleuromytilus pulcher*, n. sp.; CRICK (151).

British Isles:—Fossils from Lancashire Coal Measures; BOLTON (75).—*Amphoreopsis paucicamerata*, n. gen. and sp., Isle of Man; CRICK (152).—Review of British Pelecypods, continued, with n. spp., and *Nothamysium*, n. gen.; HIND (306).—Lower Culm fossils of North Devon; HIND, Geol. Mag. i, p. 392.—Few Lower Culm fossils from North Devon; HIND, t. c. p. 584.—Few Upper Culm fossils from West Devon; ROGERS & ARBER, t. c. p. 305.—Few fossils from Pendleside series in Derwent Valley; STOBBS, P. Geol. Ass. xviii, p. 421.

Germany:—List of fossils from South Germany; PARKINSON, Geol. Mag. i, p. 472.—A Culm fauna near Giessen; PARKINSON (469).

Dahnatua:—Fossils from near Budua; RENZ, Zeitschr. Deutsch. geol. Ges. lv, Mt. p. 16.

Moravia:—*Belemnites*, &c., from; SMYČKA (582).

Russia:—Fossils from the Oural; KONIOUSCHEVSKY, Mem. Com. geol. St. Petersb. xxii, p. 417.

America:—Fossils from Kansas; BEEDE & ROGERS (47).—Fauna of Colorado; Girty (256).—New genera from Texas and Kansas; Girty (255).—Fossils from Arizona; Girty in RANSOME, Pap. U. S. geol. Survey xxi, p. 46.

Devonian:—

Belgium:—Famennian of Condroz, lists of fossils; DESTINEZ, Ann. Soc. geol. Belgique xxxi, Mem. p. 251.—Famennian fossils from Condroz; DESTINEZ, t. c. Mem. p. 247.

Germany:—List of fossils from near Remscheid; SPRIESTERSBACH,

Centrbl. Mineral. 1904, p. 599.—Fauna from near Dierdorf; DREVERMANN (198).

Austro-Hungary :—Fauna from Debnik near Krakau, with n. spp.; GURICH (276).

Moravia :—Fossils from; SPITZNER, Vestnik Klub. Prostějov v, p. 88.—Few fossils from Celechovic, with n. spp.; SMYČKA, op. cit. vii, p. 65.

Poland :—Middle Devonian forms; SOBOLEW (583).

Africa :—New species of Mollusca from Bokkeveld Beds, S. Africa; REED (516).

America :—New species and genera from Brazil; CLARKE (119).—List of fossils from Arizona; RANSOME, Pap. U. S. geol. Survey xxi, p. 37.

Silurian :—Notes on Cephalopoda; BLAKE (56).

British Isles :—Few Ludlow fossils from Cornwall; GREEN, Geol. Mag. i, p. 289.

Bohemia :—Many new genera and species; PERNER (477).

America :—New species from Brazil; CLARKE (118).—Ordovician fossils from Pennsylvania, with n. spp.; COLLIE (123).—Two Cephalopods from Lower Silurian of Venezuela; DREVERMANN, N. Jahrb. Min. 1904, i, p. 91.

Australasia :—Occurrence of *Cyclolituites* in New South Wales; ETHERIDGE (212).

Cambrian :—

Portugal :—Fauna of Haut-Alemtejo, with n. spp.; DELGADO (185).

America :—Canadian species of *Trocholites*; WHITEAVES (649).

Australasia :—*Modiolopsis knowsleyensis*, n. sp., Victoria; CHAPMAN, Rec. Geol. Surv. Victoria i, p. 222.

III. SYSTEMATIC.†

MOLLUSCA IN GENERAL.

Popular introduction to the Mollusca; BAKER (24).

Discussion on two questions of nomenclature; BURNE (94).

Cause of inverse symmetry; CONKLIN (134).

Evolution of Mollusca; GIARD (254).

Note on some points of nomenclature; JUKES-BROWNE (344).

Unknown Mollusc, Lake Baikal; KOROTNEFF (371).

Artificial parthenogenesis; LOEB (399).

Structure of the heart; MARCEAU (412, 417).

Colouring matter in the shell; SCHULZ (552).

I. CEPHALOPODA.

Locomotion, breathing, chromatophores; FRÖHLICH (235).

Luminous and integumentary organs of certain species; HOYLE (312).

Notes on Mediterranean species; JATTA (330).

Egg-integument; SCHWEIKART (551).

Spermatogenesis; THESING (611).

† This sign is prefixed to fossil forms.

DIBRANCHIATA.

Pharynx ; HEINRICH (296).

Key to Genera of Recent Species ; HOYLE (310).

Cirrobrachium filiferum, N. of Marquesas Is. ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 28, fig. : **n. sp.**

Froekenia, **n. gen.** for *F. clara*, **n. sp.**, Cape Mala, Panama ; HOYLE, t. c. p. 7, fig.

Loligo diomedee, Acapulco, Mexico ; HOYLE, t. c. p. 29, fig. : **n. sp.**

Mastigoteuthis dentata, Galapagos Is. ; HOYLE, t. c. p. 34, fig. : **n. sp.**

Octopus, young stages ; CHUN (114) : Structure of the heart ; MARCEAU (412).

Polypus oculifer, Galapagos Is. ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 14, fig. : *P. herdmani*, p. 187, *arborescens*, p. 189, Ceylon ; HOYLE (313), figg. : **n. spp.**

Rhynchoteuthis chuni, N. of Marquesas ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 32, fig. : **n. sp.**

Sepia, note on the egg ; DHÉRE (189).

Sepia burnupi, Natal ; HOYLE, J. Conch. xi, p. 27, fig. : **n. sp.**

Stauroteuthis hippocrepium, Malpelo I., Gulf of Panama ; HOYLE, Bull. Mus. Harvard xliii, No. 1, p. 6, fig. : **n. sp.**

Tremoctopus scalenus, Panama ; HOYLE, t. c. p. 13, fig. : **n. sp.**

AMMONEA.

+*Arctoceras*, Böhm, renamed *Nathorstites*, q. v.

+*Braunsella*, **n. n.** for *Braunsina*, Buckman, preocc. ; BUCKMAN (90), p. cii.

+*Braunsina*, renamed *Braunsella*, q. v.

+*Canavarella*, **n. gen.**, type *C. belophora*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxxix.

+*Canavaria*, Buckm., renamed *Canavarina*, q. v.

+*Canavarina*, **n. n.** for *Canavaria*, Buckman ; BUCKMAN (90), p. cxli.

+*Darellella*, **n. gen.**, type *D. recticostata*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cvii.

+*Darellina*, **n. gen.**, type *D. planaris*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cvi.

+*Dawsonites*, **n. gen.** for *Trachyceras canadense*, Whiteaves, Trias ; BÖHM (62), p. 56.

+*Deltatoceras*, correction for *Deltoceras*, Buckman, 1902 ; BUCKMAN (90), p. cxix.

+*Entogonites*, **n. n.** for *Tetragonites*, Kittl non Kossmat ; KITTL, Verh. geol. Reichsanst. 1904, p. 322.

+*Episagoceras*, **n. gen.** for *Sagoceras wyneei*, Waagen, &c., Trias, India ; NOETLING, N. Jahrb. Min. B.B. xix, p. 363.

+*Frechiella*, **n. subgen.** of? for *Phylloceras subcarinatum*, Young & Bird ; PRINZ, op. cit. 1904, i, p. 31.

+*Himalayites* (Uhlig MS.) **n. gen.** for *H. treubi*, &c., **n. spp.**, Secondary, Sula Is. ; BOEHM (60), p. 38.

+*Hugiu*, **n. gen.**, type *H. curva*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxi.

+*Lopadoceras*, **n. gen.**, type *L. arcuatum*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxi.

+*Nathorstites*, **n. n.** for *Arctoceras*, Böhm non Hyatt ; BÖHM (62), p. 61.

+*Nipponites*, **n. gen.** for *N. mirabilis*, **n. sp.**, Cretaceous, Japan ; YABE, J. Coll. Tokyo xx, No. 2, p. 20.

- +*Ædania*, **n. gen.**, type *Æ. falcigera*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cvii.
 +*Osmanoceras*, **n. gen.** for *O. undulatum*, **n. sp.**, Carboniferous, Sarajevo ; KITTL, Jahrb. geol. Reichsanst. liii, p. 674.
 +*Paineia*, **n. gen.**, type *P. nitens*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. lxxvi.
 +*Spiticerias*, **n. subgen.** of *Holcostephanus* for *H. spitiensis*, Blanford, &c., Spiti Shales ; UHLIG (622), p. 85.
 +*Stokeia*, **n. gen.**, type *S. marmorea*, **n. sp.**, Oolite, Brit. Is. ; BUCKMAN (90), p. cxxvii.
 +*Taramellia*, Campana, renamed *Taramelliceras*, q. v.
 +*Taramelliceras*, **n. n.** for *Taramellia*, Campana, preocc. ; CAMPANA, Boll. Soc. geol. Ital. xxiii, p. 251.
 +*Tetragonites*, **n. gen.** for *T. grimmeri*, **n. sp.**, Carboniferous, Sarajevo ; KITTL, Jahrb. geol. Reichsanst. liii, p. 677 : Renamed *Entogonites*, q. v.
 +*Uhligia*, **n. gen.**, type *Hamites minutus*, Neum. & Uhlig ; KOENEN (366), p. 57.

TETRABRANCHIATA.

- +*Amphoreopsis*, **n. gen.** for *A. paucicamerata*, **n. sp.**, Carboniferous, Isle of Man ; CRICK, P. Malac. Soc. London vi, p. 134.
Nautilus, popular notes on ; MANGER, P. South London Soc. 1903, p. 1.

II. GASTROPODA.

Account continued by SIMROTH in BRONN (86).
 Formation of germinal layers ; FUJITA (237).
 Excretory activities in the nuclei of embryos ; GLASER (258).
 Systematic review of relationship ; SIMROTH (566).
 Works on the distribution ; SIMROTH (563).

PULMONATA.

Physiology of the nervous system ; JORDAN (342).

STYLOMMATOPHORA.

TESTACELLIDÆ and SELENITIDÆ.

- Monograph of Agnatha continued ; KOBELT in MARTINI & CHEMNITZ (426).
Afrorhytida (Moellendorff MS.), **n. subgen.** of *Rhytida*, type *R. knysnensis* (Pfr.) ; KOBELT in MARTINI & CHEMNITZ (426), p. 61.
Edentulina stumppffii, Nossi-Bé ; KOBELT in MARTINI & CHEMNITZ (426), p. 294, fig. : **n. sp.**
Ennea, notes on classification ; KOBELT (358) : *E. albida*, Putzeys, is a synonym of *Streptostele horei*, Smith ; ANCEY, J. Conchyl. lii, p. 290 : *E. iwakawa*, **n. subsp.** ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 631 : *E. (Diaphora) porrecta*, Martens, p. 116, *homalogyra*, Quadras & Moellendorff, p. 119, (*Sinoënea*) *fuchsi*, Gredler, p. 145, *micropleuris*, p. 148, *plagiostoma*, p. 150, *densecostulata*, Moellendorff, *densecostata*, Boettger, p. 151, *malaccana*, Moellendorff, p. 287, (*Gulella*) *noltei*, Boettger, figd. ; KOBELT in MARTINI & CHEMNITZ

- (426) : *E. (Gulella) girardi*, **n. n.** for *E. hidalgoi*, Girard non Moellendorff ; KOBELT in MARTINI & CHEMNITZ (426), p. 287.
- Ennea (Sinoennea) boettgeri* (Nevill MS.), Japan ; KOBELT in MARTINI & CHEMNITZ (426), p. 288, fig. : **n. sp.**
- Glandina bogotensis*, Colombia ; DA COSTA, P. Malac. Soc. London vi, p. 6, fig. : *G. lamyi*, Mexico ; FISCHER & CHATELET, J. Conchyl. li, p. 321, fig. : **n. spp.**
- Indoennea*, **n. subgen.** of *Ennea* for *E. vara*, Bens., &c. ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 28 : also in MARTINI & CHEMNITZ (426), p. 154.
- Pseudelma*, **n. gen.** for *Ennea incisa*, Morel., and *E. martensiana*, Morel. ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 29 : also in MARTINI & CHEMNITZ (426), p. 125.
- Ptychorhytida* (Moellendorff MS.), **n. subgen.** of *Rhytida*, type *R. beraudi* (Gassies) ; KOBELT in MARTINI & CHEMNITZ (426), p. 65.
- Pupa canaliculata*, Crosse, is a synonym of *Gibbus uvula*, Desh. ; ANCEY, J. Conchyl. lii, p. 305.
- Rhytida beraudi*, Gass., is a synonym of *R. bisulcata*, Pfr. ; ANCEY, t. c. p. 289 : *R. (Macrocycloides) euglypta*, **n. n.** for *R. lutea*, Moellendorff ; KOBELT in MARTINI & CHEMNITZ (426), p. 45.
- Rhytida duplicata*, New Zealand ; SUTER, P. Malac. Soc. London vi, p. 155, fig. : **n. sp.**
- Sinoennea*, **n. subgen.** of *Ennea*, type *Ennea strophiodes*, Gredler ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 27 : also in MARTINI & CHEMNITZ (426), p. 142.
- Streptaxis rollandi*, Bern., note on ; ANCEY, J. Conchyl. lii, p. 307.
- S. paradiscus*, Mlldff., is a synonym of *S. discus*, Pfr. ; ANCEY, t. c. p. 289.
- Streptostyla costaricensis*, Costa Rica ; DA COSTA, P. Malac. Soc. London vi, p. 6, fig. : **n. sp.**
- Testacella haliotidea*, habits ; COOKE (138).

LIMACIDÆ, PHILOMYCIDÆ, and ZONITIDÆ.

- Agriolimax afer*, p. 676, *uataderensis*, p. 678, *gardullanus*, p. 679, *gofanus*, p. 680, *glandulosus*, p. 681, *koschanus*, p. 685, *kontanus*, *concrementosus*, p. 687, *kaffanus*, *abessinicus*, p. 689, *deckenii*, p. 690, *gimirranus*, p. 691, *fuscus*, p. 693, *limacoides*, p. 694, Abyssinia ; SIMROTH, Zool. Jahrb. Syst. xix, figg. : **n. spp.**
- Amalia guebbardi*, Alpes-Maritimes ; POLLONERA in CAZIOT, Feuille Natural. 1904, xxxiv, p. 223, fig. : **n. sp.**
- Ariophanta juliana*, generative organs ; OVERTON (463).
- Atoxon erlangeri*, Abyssinia ; SIMROTH, Zool. Jahrb. Syst. xix, p. 700, fig. : **n. sp.**
- Collingea*, notes on ; COLLINGE (126).
- Coneuplecta moellendorffi*, **n. n.** for *C. globulosa*, Mlldff., 1901 non 1900 ; GUDE, J. Malac. xi, p. 95.
- Ctenoglypta*, **n. gen.** for *Helix newtoni*, Nevill ; ANCEY, J. Conchyl. lii, p. 306.
- Damayantia*, notes on ; COLLINGE (126) : *D. smithi*, notes on ; GODWIN-AUSTEN (261).
- Euplecta pratti*, British New Guinea ; GUDE, P. Malac. Soc. London vi, p. 114, fig. : **n. sp.**
- Hirasea insignis*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 636 : **n. sp.**
- Hyalinia adjaciensis*, Corsica ; CAZIOT, Mem. Soc. zool. France xvi, p. 34, fig. : **n. sp.**
- Isselentia*, notes on ; COLLINGE (126).

- Kaliella gudei*, n. subsp., *pallida*, Pils., note on; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 634.
- Kaliella sororcula*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 107: *K. thaunumi*, p. 119, *lubricella*, p. 120, Hawaii; ANCEY, P. Malac. Soc. London vi, figg.: *K. kikaigashimae*, *humiliconus*, *okinoshimana*, *binaris*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 633: **n. spp.**
- Limax variegatus*, biology; KÜNKEL (375).
- Limax sidamoensis*, Sidamo; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 143: *L. subfossilis*, *duplex*, Alpes-Maritimes; POLLONERA in CAZIOT, Feuille Natural. 1904, xxxiv, p. 223, figg.: **n. spp.**
- Macrochlamys dulcis*, p. 635, *gudei*, p. 636, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1904: *M. cerasina*, n. subsp.; PILSBRY & HIRASE, Nautilus xviii, p. 6.
- Macrochlamys izushichitajimana*, *decens*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 106: *M. chaunax*, Japan; PILSBRY & HIRASE, op. cit. xviii, p. 6: *M. subelimatus*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 635: **n. spp.**
- Microcystina vaga*, *lampira*, Japan; PILSBRY & HIRASE, t. c. p. 634: **n. spp.**
- Microcystis rufobrunnea*, Hawaii; ANCEY, P. Malac. Soc. London vi, p. 119, fig.: **n. sp.**
- Narviniidae*, monograph continued, with figg. of *N. (Xesta) kaledupana*, p. 1097, *perfragilis*, Moellendorff, p. 1098; KOBELT in MARTINI & CHEMNITZ (426).
- Omphalina pilsbryi*, Alabama; CLAPP, Nautilus xviii, p. 30: **n. sp.**
- Parmacella deshayesi*, eggs, &c.; COLLINGE (129).
- Pliotropis*, **n. subgen.** of *Otesia*, type *O. biangulata*, Pfr.; KOBELT in MARTINI & CHEMNITZ (426), p. 1093.
- Sitala latissima*, n. subsp.; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 632.
- Sitala insignis*, Japan; PILSBRY & HIRASE, t. c. p. 632: **n. sp.**
- Spirotoxon elegans*, Simr., figd.; SIMROTH, Zool. Jahrb. Syst. xix, p. 702.
- Spirotoxon stuhlmanni*, *neumanni*, E. Africa; SIMROTH, t. c. p. 704, figg.: **n. spp.**
- Trochomorpha (Nigritella) contigua*, Pse., n. var.; BOETTGER, Zool. Jahrb. Syst. xx, p. 409.
- Trochomorpha (Nigritella) insolata*, Marshall Is.; BOETTGER, t. c. p. 410: *T. cultrata*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 632: *T. gulielmi*, *dautzenbergi*, Engano; SYKES, J. Malac. xi, p. 87, figg.: **n. spp.**
- Trochonanina bonhouri*, Lake Albany, *zeltneri*, Oualamo; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 143: **n. spp.**
- Varania*, **n. g.**, type *V. loennbergi*, **n. sp.**, Cameroons; SIMROTH, Zool. Jahrb. Syst. xix, p. 710, fig.
- Vaucheria*, **n. gen.** for *V. tingitana*, **n. sp.**, N. W. Africa; PALLARY, J. Conchyl. lii, p. 7, fig.
- Vitrea radiatula*, n. var.; PILSBRY & HIRASE, Nautilus xvii, p. 117.
- Vitrea hawaiiensis*, Hawaii; ANCEY, P. Malac. Soc. London vi, p. 120, fig.: **n. sp.**
- Vitrina comorensis*, Pfr., is a young *Helix aperta*; ANCEY, J. Conchyl. lii, p. 288: *V. keppelli*, Pfr., *ultima*, Mouss., and *kermadecensis*, Smith, are all the same; ANCEY, t. c. p. 307.
- Vitrina bozasi*, Riv. Oubangui; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 143: **n. sp.**
- Xesta sparsa*, Mousson, notes on; ANCEY, J. Conchyl. lii, p. 298.
- Zonitoides apertus*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 636: *Z. chishimanus*, Japan; PILSBRY & HIRASE, Nautilus xviii, p. 5: **n. spp.**

ARIONIDÆ.

- Arion hortensis*, absence of male generative organs ; COLLINGE, J. Malac. xi, p. 15 : *A. subfuscus*, note on varr. ; COLLINGE (130).
Ariunculus pallargi, Algeria ; COLLINGE, J. Malac. xi, p. 47 : **n. sp.**
Ostracolethe, anatomy ; SIMROTH, Zeitschr. wiss. Zool. lxxvi, pp. 612-672, figg.

ENDODONTIDÆ.

- Carthæa*, Hutton, renamed *Serpho*, q. v.
Delos, **n. n.** for *Rheneæ*, Hutton non Saalmuller ; HUTTON, P. Linn. Soc. N. S. Wales xxix, p. 461.
Endodonta (*Charopa*) *transenna*, New Zealand ; SUTER, P. Malac. Soc. London vi, p. 156, fig. : *E. (Charopa) ochra*, (*C. chrysaugeia*, p. 107, *alloia*, p. 108, New Zealand ; WEBSTER, t. c. figg. : **n. spp.**
Helix mathinnæ, Petterd, *hookeriana*, Johnston, figd. ; HEDLEY (292).
Luoma moellendorffi, Suter, sinistral specimen ; SUTER, P. Malac. Soc. London vi, p. 157.
Luoma (Phrixgnathus) francesci, (*P. elaiodes*, New Zealand ; WEBSTER, t. c. p. 106, figg. : **n. spp.**
Punctum horneri, Oahu ; ANCEY, J. Malac. xi, p. 66, fig. : *P. infans*, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 107 : *P. elachistum*, *apertum*, Japan ; PILSBRY & HIRASE, op. cit. xviii, p. 5 : *P. atomus*, p. 636, *rota*, p. 637, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
Pyramidula alternata, spire variation ; BAKER (31).
Pyrrha, Hutton, renamed *Thermia*, q. v.
Rheneæ, Hutton, renamed *Delos*, q. v.
Serpho, **n. n.** for *Carthæa*, Hutton non Walker ; HUTTON, P. Linn. Soc. N. S. Wales xxix, p. 461.
Thermia, **n. n.** for *Pyrrha*, Hutton non Cabanis ; HUTTON, t. c. p. 461.

HELICIDÆ.

- Alabastrina*, **n. subgen.** of *Iberus*, for *I. alabastrites*, Mich., etc. ; KOBELT in ROSSMAESSLER (543), pp. 132, 194.
Albersia subsphaerica, Gebi I. ; FULTON, J. Malac. xi, p. 54, fig. : *A. waigiouensis*, Waigiou ; SYKES, t. c. p. 88, fig. : **n. spp.**
Ashmunella walkeri, New Mexico ; FERRISS, Nautilus xviii, p. 53 : *A. townsendi*, New Mexico ; BARTSCH, Smithson. Collect. xlvii, p. 13 : **n. spp.**
Botteria, **n. gen.** for *Campylæa setosa*, Zgl. ; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
Cathaica orithya, *pulveratrix*, *nodulifera*, **n. varr.** ; ANDREAE (16).
Cathaica (Eucathaica) sturanyi, Rolle, (*Campylocathaica) hermanni*, Mlldff., Western Turkestan ; GUDE, J. Malac. xi, p. 93 : *C. (Eucathaica) subtilistriata*, p. 59, (*Xerocathaica) ohlmeri*, (*X.*) *holdereri*, p. 64, (*Pseudiberus) Futtereri*, p. 66, Central Asia ; ANDREAE (16), figg. : **n. spp.**
Cattania, **n. gen.** for *Campylæa trizona*, Zgl. ; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
Chloritis tosanus, **n. subsp.** ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 629.
Chloritis obscurus, Japan ; PILSBRY & HIRASE, t. c. p. 628, fig. : **n. sp.**
Corilla erronea (Nevill MS.), Ceylon ; GUDE, J. Malac. xi, p. 45, fig. : **n. sp.**
Discolepis, **n. gen.** for *Helix desidens*, Rang. (of which *H. ancylochila*,

- Crosse, is a synonym), and *sumichrasti*; ANCEY, J. Conchyl. lii, p. 298.
- Drobacia*, **n. gen.** for *Campylæa banatica*, Partsch; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Dupotetia*, **n. subgen.** of *Iberus*, for *I. dupotetianus*, Terver, etc.; KOBELT in ROSSMAESSLER (543), pp. 132, 195.
- Epiphragmophora remondi*, Tryon, *verrilli*, Ancey, notes on; ANCEY, J. Conchyl. lii, p. 312.
- Eulota pannosa*, *shikokuensis*, p. 3, *mimula*, p. 4, *friedeliana*, p. 33, *kobensis*, p. 34, **n. varr.**; PILSBRY & HIRASE (496): *E. kobensis*, *commoda*, *shikokuensis*, **n. varr.**; PILSBRY & HIRASE, Nautilus xvii, p. 105: *E. friedeliana*, p. 625, *callizona*, p. 626, *despecta*, p. 627, **n. varr.**; PILSBRY & HIRASE, P. Ac. Philad. 1904.
- Eulota endo*, p. 105, *chishimana*, p. 116, Japan; PILSBRY & HIRASE, Nautilus xvii: *E. (Ægista) eminens*, p. 4, (*Euhadra*) *irrediviva*, p. 32, (*Ægista*) *tokunoshimana*, (*Plectotropis*) *pressa*, p. 33, Japan; PILSBRY & HIRASE, op. cit. xviii: *E. globosa*, Shantung; JONES & PRESTON, P. Malac. Soc. London vi, p. 140, fig.: *E. (Ægista) omma*, p. 625, (*Euhadra*) *okinoerabuensis*, p. 626, *niyaka*, p. 627, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904: **n. spp.**
- Eurystoma vittata*, Albers, anatomy; GODWIN-AUSTEN (260).
- Faustina*, **n. subgen.** of *Campylæa*, for *C. faustina*, Ziegl.; KOBELT in ROSSMAESSLER (543), p. 186.
- Fruticicola erjavecii*, Brus., **n. var.**; LAJOS (378).
- Fruticicola dacica*, Hungary; LAJOS, Ann. Mus. Hungar. ii, p. 294: **n. sp.**
- Ganesella myomphala*, *selasia*, **n. subssp.**; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 630.
- Ganesella tokunoshimana*, Japan; PILSBRY & HIRASE, t. c. p. 629: **n. sp.**
- Helix*, monograph continued; KOBELT in MARTINI & CHEMNITZ (426): Review of Hungarian species; SOOS (586): A number of forms figured from N.W. Africa, with newly named varieties; PALLARY (466): *H. pomatia*, structure of the spermatozooids; LEE (391): *H. pomatia*, evolution of the spermatozooids; LEE (392): *H. nemoralis*, variation; WINKWORTH (655): *H. nemoralis*, sinistral; COLLIER (124): *H. pomatia*, monstrosity; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 125: *H. pomatia*, sinistral; JENNINGS (331): *H. aspersa*, reversed; WELCH & STELFOX, Irish Natural. xiii, p. 189, fig.: *H. auridens*, Rang, **n. var.**; ANCEY, J. Conchyl. lii, p. 311: *H. pomatia*, monstrosities; BELLEVOYE (49): *H. pomatia*, olfactory sense; DUBOIS (201): YUNG (669): *H. primeana*, *hidalgoiana*, *cailleti*, *mabiliei*, *leucolena*, all of Crosse, *duroi*, Hidalgo, *calculus*, Pfr., are all synonyms of various spp.; ANCEY (14): *H. hortensis* and *nemoralis*, study of variation; LANG (384): *H. pomatia*, function of salivary glands; GORKA (264): *H. aperta*, distribution and variability; CAZIOT (105): *H. nicimensis*, varr.; CAZIOT (103): *H. (Helicogena) blumi*, *critica*, *pseudopomatia*, Kobelt, *escherichi*, Btgr., *pathetica*, Albers, *philibensis*, Pfr., figd.; KOBELT in MARTINI & CHEMNITZ (426): *H. albescens* (Jan) Rossm., note on; KOBELT (365): *H. vermiculata*, synonymy and distribution; CAZIOT (107): *H. ciliciana*, *pachya*, *adanensis*, *moabitica*, *vulgaris*, *lutescens*, *figulina*, *pelasgica*, *pathetica*, *cavata*, **n. varr.**; KOBELT in MARTINI & CHEMNITZ (426).
- Helix paoliana*, p. 35, *mauryi*, p. 36, Corsica; CAZIOT, Mem. Soc. zool. France xvi, figg.: *H. arnouldi*, p. 100, *joubini*, p. 101, France; GERMAIN, Bull. Soc. Ouest France xiv, figg.: *H. (Helicogena) rueppelli*, Egypt, p. 122, *oestreichi*, Albania, *frivaldszkyi*, Turkey, p. 146, *ciliciana*, Cilicia, p. 152, *dickhauti*, Jerusalem, p. 185, *straubei*, Turkey, p. 190, *anthesi*, Bosphorus, p. 191, *pelasgica*, Greece, p. 192; KOBELT in

- MARTINI & CHEMNITZ (426), figg.: *H. (Xerophila) redassiana*, p. 12, (*X.*) *misslei*, p. 14, (*X.*) *castriesi*, p. 15, (*X.*) *foucauldi*, p. 16, N.W. Africa; PALLARY, J. Conchyl. lii, figg.: **n. spp.**
- Iberus*, notes on; KOBELT (363): *I. mariannæ*, n. var., pp. 198, 284; KOBELT in ROSSMAESSLER (543).
- Kosicia*, **n. gen.** for *Campylæa intermedia*, Fer.; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Murella galdensis*, p. 21, *saprensis*, p. 22, *coccovelli*, p. 23, *marateensis*, p. 24, *mingardi*, p. 57, *consigliana*, p. 58, *lucana* (Westlnd.), p. 59, *sirinensis*, p. 60, Italy; KOBELT, t. c.: **n. spp.**
- Obba subgranulata*, Batjan; SYKES, J. Malac. xi, p. 89, fig.: **n. sp.**
- Oreohelix*, **n. gen.** for the Rocky Mountain Helices of the *H. strigosa* group; PILSBRY, Nautilus xvii, p. 131.
- Oreohelix clappi*, Arizona; FERRISS, Nautilus xviii, p. 53 : **n. sp.**
- Otala*, notes on; KOBELT (363).
- Papuina unicolor*, Pfr., comes from Waigiou; ANCEY, J. Conchyl. lii, p. 291: *P. unicolor*, Pfr., comes from Gebi I.; FULTON, J. Malac. xi, p. 53: *P. barnaclei*, Smith, is a synonym of *P. alfredi* var. *trichroa*, Mart.; ANCEY, J. Conchyl. lii, p. 291: *P. linteræ*, Mldff., is a synonym of *P. secans*, Hedley; ANCEY, t. c. p. 311: *P. lanceolata*, n. var.; SYKES, J. Malac. xi, p. 91.
- Papuina fallax*, Gebi I.; FULTON, J. Malac. xi, p. 53, fig.: *P. ecolorata*, Batjan, *semibrunnea*, Gebi I.; SYKES, J. Malac. xi, p. 90, figg.: **n. spp.**
- Planispira endoptycha*, Martens, n. var.; SYKES, J. Malac. xi, p. 88.
- Planispira (Crustigibba) gebiensis*, Gebi I., p. 88, (*C.*) *fruhstorferi*, Obi, p. 89; SYKES, J. Malac. xi, figg.: **n. spp.**
- Plectopylis (Sinicola) hirasei*, Riukiu Is.; PILSBRY, Nautilus xviii, p. 58 : **n. sp.**
- Pleurodonte gudeana*, **n. n.** for *Helix neogranadensis*, Kobelt non Pfr.; ANCEY, J. Conchyl. lii, p. 297.
- Polygyra tridentata*, n. subsp.; PILSBRY, Nautilus xvii, p. 142: *P. stenotrema*, n. var.; CLAPP, op. cit. xviii, p. 86: *P. appressa*, p. 89, *wheatleyi*, p. 90, n. varr.; PILSBRY, t. c.: *P. monodon* and *hirsuta*, albino; HYNING, t. c. p. 92.
- Polygyra (Stenotrema) barbata*, Alabama; CLAPP, Nautilus xviii, p. 85 : **n. sp.**
- Sabljaria*, **n. gen.** for *Campylæa stenomphala*, Menke; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Sonorella*, review of group, *S. walcottiana* should be *walcottiana*; BARTSCH (35): *S. lohrii*, n. subsp.; PILSBRY, Nautilus xviii, p. 59.
- Sonorella ashmuni*, p. 190, Arizona, *nelsoni*, p. 191, *goldmani*, Mexico, *merrilli*, p. 192, Lower California, *dalli*, Arizona, p. 193, *earnsi*, Mexico, p. 194, *baileyi*, p. 195, Mexico, *fisheri*, p. 197, California; BARTSCH, Smithsonian. Collect. xlvii, figg.: **n. spp.**
- Systrophia moellendorffi*, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, p. 35, fig.: **n. sp.**
- Thersites*, critical list of the *Sphærospira* section with forms figd. and n. var. of *T. lessoni*; FULTON (240): *T. beddomæ* is a variety of *bellendenkerensis*; FULTON, J. Malac. xi, p. 1.
- Thersites concors*, Queensland; FULTON, t. c. p. 8, fig.: **n. sp.**
- Trishoplita mesogonia*, n. var.; PILSBRY & HIRASE, Nautilus xvii, p. 106.
- Trishoplita nitens*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 628 : **n. sp.**
- Vidovicia*, **n. gen.** for *Campylæa lacticina*, Zgl.; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 162.
- Vulnus*, **n. sect.** for *Planispira endoptycha*, Martens; SYKES, J. Malac. xi, p. 88.

- Westerlundia*, **n. subgen.** of *Fruticicola* for *F. schuberti*, Roth, etc.; KOBELT in ROSSMAESSLER (543), pp. 131, 181.
Xanthomelon bednalli, Central Australia; PONSONBY, P. Malac. Soc. London vi, p. 182 fig. : **n. sp.**
Xerophila ammonis, **n. var.**; KOBELT in ROSSMAESSLER (543), p. 201.
Xerophila adelpha, p. 292, *homoleuca* (Sabljär and Kučik), p. 293, Hungary; LAJOS, Ann. Mus. Hungar. ii : **n. spp.**

BULIMIDÆ and BULIMULIDÆ.

- Amphidromus palaceus*, subcarinate var.; BULLEN, P. Malac. Soc. London vi, p. 109.
Amphidromus weyersi, Borneo; DAUTZENBERG, Ann. Soc. malac. Belgique xxxviii, p. 4, fig. : *A. gossei*, Borneo; BARTSCH, Smithsonian. Collect. xlvii, p. 292, fig. : **n. spp.**
Bulimulus pallidior, Sby., notes on, *B. pluto*, Crosse, and *nuciformis*, Petit, are respectively synonyms of *B. tupacii*, D'Orb., and *nux*, Brod.; ANCEY, J. Conchyl. lii, pp. 301 & 302.
Bulimulus (Drymæus) abruptus, p. 35, *loxostylus*, *pergracilis*, p. 37, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, figg. : *B. ephippium*, *goniotropis*, Brazil; ANCEY, Nautilus xvii : **n. spp.**
Bulimus (?) illustris, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, fig. : **n. sp.**
Drymæus nubilus, Preston, is a synonym of *D. reclusianus* var. *martensianus*; ANCEY, Nautilus xviii, p. 22.
Drymæus multispira, Bolivia; DA COSTA, P. Malac. Soc. London vi, p. 5, fig. : **n. sp.**
Odontostomus inflatus, Wagner, **n. varr.**; ANCEY, J. Conchyl. lii, p. 303.
Odontostomus squarrosus, Brazil, *glabratus*, *deraini*, Argentina; ANCEY, Nautilus xvii, p. 103 : **n. spp.**
Porphyrobaphe sarcostoma, Ancey, is a synonym of *P. yatesi*; ANCEY, t. c. p. 104.
Strophocheilus mabiliei, Crosse, is a synonym of *Bulimus pulicarius*, Reeve, and *S. dalmasi*, Dtz., comes from Colombia; ANCEY, J. Conchyl. lii, pp. 300 & 301 : *S. argenteus*, Jouss., note on; ANCEY, t. c. p. 314.
Strophocheilus (Eurytus) auriformis, Colombia, *miersi*, Brazil; DA COSTA, P. Malac. Soc. London vi, p. 5, figg. : **n. spp.**
Thaumastus sangœ, *biteniatus*, epiphragms; SMITH (572).

BULIMINIDÆ, UROCOPTIDÆ, and PUPIDÆ.

- Anoma*, notes on with figg. of several forms and **n. var.** of *A. fuscolabris*; SYKES (606).
Brachypodella obesula, **n. n.** for *Cylindrella obesa*, Weinl. non Ad.; PILSBRY in TRYON (619), xvi, p. 195.
Buliminus bieti, Ancey, is a good species; ANCEY, J. Conchyl. lii, p. 299.
Buliminus silvestris, (*Napeus*) *karagoinensis*, Central Asia; ROSEN, Nachrbl. Deutsch. malak. Ges. 1904, p. 169 : **n. spp.**
Clausilia dubia, *procera*, **n. varr.**; CSIKI (158) : *C. bocki*, Sykes, note on; ANCEY, J. Conchyl. lii, p. 307 : *C. itala*, study of variation; WELDON (647) : *C. pilsbryana*, **n. n.** for *C. oscariana*, Pilsbry non Gredler; ANCEY, Nautilus xviii, p. 21 : *C. ducalis*, p. 809, *platydera*, p. 813, *aurantiaca*, p. 815, *hyperoptyx*, p. 830, *dæmonorum*, p. 833, *tryoni*, p. 837, **n. varr.**; PILSBRY, P. Ac. Philad. 1904.
Clausilia (Albinaria) holtzi, Crete; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 110 : *C. millennaris*, Hungary; CSIKI, Ann. Mus. Hungar. i,

- p. 108: *C. cymatodes*, *nagashimana*, p. 180, *ventriluna*, p. 811, *ikiensis*, p. 812, *mikuwa*, p. 813, *hosayaka*, *koshikijimana*, p. 814, *okinoerabuensis*, *azumai*, p. 816, *nakadai*, p. 818, *tokunoshimana*, p. 819, *ophidoon*, p. 820, *subhickonis*, p. 821, *purissima*, *asperata*, p. 826, *hyperaptyx*, p. 827, *kikaiensis*, p. 828, *sarissa*, p. 829, *yaeyamensis*, p. 831, *pattalus*, p. 832, *thaumatopoma*, p. 834, *hedleyi*, p. 835, *cladoptyx*, p. 836, Japanese Empire; PILSBRY, P. Ac. Philad. 1904, figg.: **n. spp.**
- Coryna biarmata* (Bttgr. MS.), Hertzgovina; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 105, fig.: **n. sp.**
- Diceratoptyx*, **n. sect.** of *Clausilia*, type *C. cladoptyx*, **n. sp.**; PILSBRY, P. Ac. Philad. 1904, p. 836.
- Ena* (*Cerastus*) *lagariensis*, British East Africa; SMITH, P. Malac. Soc. London iv, p. 68, fig.: **n. sp.**
- Hemizaptyx*, **n. sect.** of *Clausilia*, type *C. pinto*, Pils.; PILSBRY, P. Ac. Philad. 1904, p. 824.
- Jaminia muscorum*, sinistral; BALDWIN (32).
- Lyropupa lyrata*, Gould, note on, *mirabilis*, Ancey, *perlonga*, Pease, figd.; ANCEY, P. Malac. Soc. London vi, pp. 125 & 126: *L. mirabilis*, *magdalenæ*, **n. varr.**; ANCEY, J. Malac. xi, p. 68.
- Lyropupa clathratula*, Hawaii, *carbonaria*, p. 125, *microthauma*, Oahu, p. 126; ANCEY, P. Malac. Soc. London vi, figg.: **n. spp.**
- Metazaptyx*, **n. sect.** of *Clausilia*, for *C. hachijoensis*, Pils., &c.; PILSBRY, P. Ac. Philad. 1904, p. 811.
- Nenia huancabambensis*, Peru; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, p. 38, fig.: **n. sp.**
- Nesiophædusa*, **n. sect.** of *Clausilia*, type *C. bernardii*, Pfr.; PILSBRY, P. Ac. Philad. 1904, p. 815.
- Nesopupa tamagonari*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 118: *N. baldwini*, Maui and Hawaii, *plicifera*, Oahu, p. 122, *thaanumi*, Hawaii, *wesleyana*, Hawaiian Is., p. 123, *kauaiensis*, Kauai, p. 124; ANCEY, P. Malac. Soc. London vi, figg.: **n. spp.**
- Oligozaptyx*, **n. sect.** of *Clausilia*, type *C. hedleyi*, **n. sp.**; PILSBRY, P. Ac. Philad. 1904, p. 835.
- Oophædusa*, **n. sect.** of *Clausilia* for *C. ophidoon*, **n. sp.**; PILSBRY, t. c. p. 820.
- Parazaptyx*, **n. sect.** of *Clausilia*, type *C. thaumatopoma*, **n. sp.**; PILSBRY, t. c. p. 834.
- Perrieria canefriana*, Obi; SYKES, J. Malac. xi, p. 91, fig.: **n. sp.**
- Pholeoteras*, **n. gen.** for *P. euthrix*, **n. sp.**, Hertzgovina; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 106, fig.: **n. sp.**
- Pupidæ*, notes on nomenclature; DALL (168): *P. cupa*, Jan, **n. var.**; ANDREAE (16).
- Pupa insulivaga*, Japan; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 631: **n. sp.**
- Serrulina collasi*, Corfu; STURANY, Nachrbl. Deutsch. malak. Ges. 1904, p. 103, fig.: **n. sp.**
- Vertigo hirasei*, **n. subspp.**; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 631: *V. andrusiana*, Pils., note on; PILSBRY, Nautilus xvii, p. 131.
- Vertigo japonica*, Japan; PILSBRY & HIRASE, Nautilus xvii, p. 118: **n. sp.**

STENOGYRIDÆ and ACHATINELLIDÆ.

- Achatinidæ*, review of commenced, with **n. varr.** of *A. achatina*, L., p. 10, *panthera*, Fer., p. 45, *fulica*, Fer., p. 58; PILSBRY in TRYON (619), xvii.

- Achatina occidentalis*, Corisco I. ; PILSBRY in TRYON (619), xvii, p. 23, fig. : **n. sp.**
- Achatinella multizonata*, notes on variation ; COOKE (139).
- Amastrea luctuosa*, Pfr., n. var., with fig. of *A. henshawi*, ANCEY ; ANCEY, P. Malac. Soc. London vi, p. 121.
- Amastrea rex*, Hawaiian Is. ; SYKES, Ann. Nat. Hist. xiv, p. 159, fig. : **n. sp.**
- Archachatina marginata*, Swains., n. var. ; PILSBRY in TRYON (619), xvii, p. 111.
- Auriculella pulchra*, Pease, is a var. of *A. auricula* ; ANCEY, J. Conchyl. lii, p. 304.
- Auriculella malleata*, Oahu, p. 120, *canalifera*, Molokai, p. 121 ; ANCEY, P. Malac. Soc. London vi, figg. : **n. spp.**
- Burtoa nilotica*, Pfr., n. var. ; PILSBRY in TRYON (619), xvi, p. 303.
- Carelia turricula*, Mighels, *fuliginea*, Pfr., n. varr. ; ANCEY, P. Malac. Soc. London vi, pp. 121, 122.
- Leptocallista*, n. sect. of *Leptocala* for *Achatina raffrayi*, Jouss., and *grandidieriana*, Brgt. ; PILSBRY in TRYON (619), xvii, p. 75.
- Limicolaria lucalana*, **n. n.** for *Bulimus jaspideus*, Morelet, 1866 non 1863, p. 262, *felina*, Shuttl., n. var., p. 266, *saturata*, Smith, n. var., p. 286 ; PILSBRY in TRYON (619), xvi : *L. hidalgovi*, Crosse, note on ; ANCEY, J. Conchyl. lii, p. 305.
- Limicolaria agathina* (Gabb), *tryoniana*, West Africa, p. 250, *longa*, British East Africa, p. 284 ; PILSBRY in TRYON (619), xvi, figg. : **n. spp.**
- Limicotaria* (sic) *joubini*, Congo ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : **n. sp.**
- Metachatina*, **n. gen.**, type *Bulimus kraussi*, Pfr. ; PILSBRY in TRYON (619), xvi, p. 307.
- Opeas*, notes on with n. var. of *O. prestoni* ; SYKES, P. Malac. Soc. London vi, p. 112.
- Opeas heptagyrum*, Marshall Is. ; BOETTGER, Zool. Jahrb. Syst. xx, p. 411 : *O. henshawi*, Hawaii ; SYKES, P. Malac. Soc. London vi, p. 112 : *O. brevispira*, *kyotoensis*, p. 637, *obesispira*, p. 638, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
- Partulina physa*, n. var. ; ANCEY, P. Malac. Soc. London vi, p. 121.
- Pseudachatina pyramidata*, Kob., n. var. ; PILSBRY in TRYON (619), xvi, p. 210.
- Pseudachatina daillyana*, West Africa ; PILSBRY in TRYON (619), xvi, p. 214, fig. : **n. sp.**
- Pseudoglossula prestoni*, p. 68, *gracilior*, p. 69, German East Africa ; SMITH, P. Malac. Soc. London vi, figg. : **n. spp.**
- Pseudotrochus moreletianus*, Desh., p. 228, *interstinctus*, Gould, p. 240, n. varr. ; PILSBRY in TRYON (619), xvi.
- Spiraxis cacahumilpensis* [apparently **n. sp.**], Mexico ; HERRERA, Mem. Soc. Ant. Alzate v, p. 219 [1891] : **n. sp.**
- Stenogyra reitteri* (Rosen MS.), Turkestan ; KOBELT, Nachrbl. Deutsch. malak. Ges. 1904, p. 87 : **n. sp.**
- Subulina lagariensis*, British East Africa ; SMITH, P. Malac. Soc. London vi, p. 69, fig. : *S. kassaiana*, Central Africa ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : **n. sp.**
- Tornatellina*, notes on Hawaiian species ; ANCEY (13).
- T. monodonta*, Japan ; PILSBRY & HIRASE, Nautilus xviii, p. 6 : *M. macromphala*, Maui and Oahu, p. 296, *cincta*, Hawaiian Is., p. 297, *abbreviata*, Maui, p. 298, *henshawi*, Hawaii, p. 299, *procerula*, p. 302, *subangulata*, *terebra*, p. 303, Maui, *pyramidata*, Hawaii, p. 304, *macroptychia*, Maui, p. 305, *fusca*, Hawaii, p. 306 ; ANCEY, J. Conchyl. li, figg. : **n. spp.**

SUCCINEIDÆ, VERONICELLIDÆ and ONCIDIIDÆ.

Notes on a new but unnamed genus (*Veronicellidæ*) ; COLLINGE, J. Malac. xi, p. 14.

Oncidiella flavescens, Chatham Is. ; WISELL, Zool. Jahrb. Syst. xx, p. 668, fig. : **n. sp.**

Succinea wrighti, Crosse, is a synonym of *S. lauta*, Gould ; ANCEY, J. Conchyl. lii, p. 306 : *S. casta*, n. varr. ; ANCEY, P. Malac. Soc. London vi, p. 117 : *S. oblonga*, white var. ; WRIGHT, J. Conch. xi, p. 96.

Succinea ikiana, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 117 : *S. brumpti*, River Omo ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : *S. kuhnsi*, p. 117, *tenerima*, Hawaii, *apicalis*, p. 118, *tetragona*, Maui, *quadrata*, Hawaii, p. 119 ; ANCEY, P. Malac. Soc. London vi, figg. : **n. spp.**

BASOMMATOPHORA.

AURICULIDÆ, LIMNÆIDÆ and PHYSIDÆ.

Ameria plicaxis, Obi ; SYKES, J. Malac. xi, p. 92, fig. : **n. sp.**

Ancylus adhering to water-beetles ; JOHNSON (335) : Eastern American species ; WALKER (638) : *Ancylus* during the dry season in S. America ; BOETTGER (68).

Ancylus crequii, Lake Titicaca, Bolivia ; BAVAY, Bull. Soc. zool. France xxix, p. 156, fig. : **n. sp.**

Carychium pessimum, n. var. ; PILSBRY & HIRASE, Nautilus xvii, p. 119.

Carychium nipponense, Japan ; PILSBRY & HIRASE, op. cit. xviii, p. 7 : **n. sp.**

Gundlachia is an *Ancylus* which by forming an epiphragm has survived winter ; DALL (167).

Limnæa reflexa, n. varr. ; BAKER (26) : *L. decollata*, n. var. ; BAKER, Nautilus xviii, p. 62 : *L. truncatula*, n. var. ; BELLINI, J. Conch. xi, p. 38 : *L. maroccana*, figd. ; PALLARY, J. Conchyl. lii, p. 33 : *L. palustris*, n. var. ; LINDHOLM, Annuaire Mus. St. Petersburg. viii, p. 339 : *L. lagotis*, n. var. ; ANDREAE (16).

Limnæa rochebruni (Germain), France ; ROCHEBRUNE, Bull. Mus. Paris x, p. 191, fig. : *L. randolphi*, Alaska ; BAKER, Nautilus xviii, p. 63 : *L. nimoulensis*, White Nile ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 141 : *L. mars*, p. 141, (*Gulnaria*) *whartoni*, (*G.*) *shantungensis*, (*G.*) *pettiti*, p. 142, Shantung ; JONES & PRESTON, P. Malac. Soc. London vi, figg. : **n. spp.**

Melampus flavus, Gmel., *coffeus*, L., n. varr. ; DAVIS (181).

Physopsis didieri, White Nile ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 142 : **n. sp.**

Planorbis corneus, kidney, pericardium and heart ; PÖTZSCH (501) : *P. truncatus*, Miles, notes on ; BAKER (30) : *P. montanus*, d'Orb., carinate var. figd. ; BAVAY (40).

Planorbis bozasi, Lake Challa ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 141 : **n. sp.**

SIPHONARIIDÆ and AMPHIBOLIDÆ.

Ampullarina africana, Port Alfred ; SMITH, J. Malac. xi, p. 38, fig. : **n. sp.**

Siphonaria alternata, n. varr. ; DAVIS (181).

Siphonaria subatrata, *rucuana*, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 36, figg. : **n. spp.**

OPISTHOBRANCHIATA.

Opisthobranchs, free larvæ of ; MAZZARELLI (431).

Nervous system ; VAYSSIÈRE (629).

NUDIBRANCHIATA.

Notes on some Genera ; ELIOT (208, &c.).

Spawn of some Nudibranchs ; SMALLWOOD (569).

Nudibranchiata, nematocysts ; GROSVENOR (269) : ABRIC (2, 4) : LENDEN-FELD (394).

Variation of colour ; ABRIC (1).

Anatomy of several Nudibranchs ; VAYSSIÈRE (629).

Alloiodoris, **n. gen.** for *A. marmorata*, **n. sp.**, Tasmania ; BERGH (52), p. 41, fig.

Archidoris stellifera (Ihering), Gulf of Marseilles ; VAYSSIÈRE, J. Conchyl. lii, p. 130, fig. : *A. africana*, p. 361, *minor*, p. 362, E. Africa ; ELIOT, P. Zool. Soc. London 1903, ii : *A. violacea*, p. 31, *nanula*, p. 33, New Zealand ; BERGH (52), figg. : **n. spp.**

Asteronotus hemprichi, Ehrenberg, figd. ; ELIOT, P. Zool. Soc. London 1903, ii, p. 384.

Bornella digitata, Adams, *excepta*, Bergh, p. 102, radula ; ELIOT, op. cit. 1904, ii.

Bornella simplex, Zanzibar ; ELIOT, t. c. p. 103, fig. : **n. sp.**

Chromodoris reticulata, Pease, p. 386, figd., *elizabethina*, Bergh, **n. var.**, p. 392, *lineata*, Souleyet, **n. var.**, p. 397 ; ELIOT, P. Zool. Soc. London 1904, i : *C. (?) roseopicta*, Verrill, note on ; VERRILL, Tr. Connect. Ac. xi, p. 33.

Chromodoris sykesi, p. 387, *cavæ*, p. 388, *annulata*, p. 389, *splendens*, p. 390, *vicina*, p. 392, *nigrostriata*, p. 394, *inconspicua*, p. 398, (?) *flava*, p. 399, Zanzibar ; ELIOT, P. Zool. Soc. London 1904, i, several figd. : **n. spp.**

Coryphella californica, California ; BERGH (52), p. 6, fig. : **n. sp.**

Cuthona (?) bicolor, Japan ; BERGH (52), p. 3, fig. : **n. sp.**

Discodoris cærulescens, **n. subsp.**, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii, p. 365.

Discodoris dubia, p. 53, *egena*, p. 54, Tasmania ; BERGH (52), figg. : **n. spp.**

Doris planata, notes on ; ELIOT (207).

Doris giardi, Wimereux ; ABRIC, C.R. Soc. Biol. lvii, p. 232 : **n. sp.**

Elysia subornata, p. 29, *flava*, *picta*, p. 30, *papillosa*, p. 31, Bermudas ; VERRILL, Tr. Connect. Ac. xi, figg. : **n. spp.**

Facelina goslingii, Bermudas ; VERRILL, t. c. p. 34, fig. : **n. sp.**

Fiona, development of germ layers ; CASTEEL (99) : *F. marina*, early larval development ; CASTEEL (100).

Fracassa tuberculosa, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii, p. 371 : **n. sp.**

Halgerda willeyi, Loyalty Is., p. 372, *wasinensis*, E. Africa, p. 373 ; ELIOT, t. c. figg. : **n. spp.**

Hexabranchus plicatus, Red Sea ; HÄGG (278), p. 5, fig. : **n. sp.**

Homoiodoris nov. zealandiae, New Zealand ; BERGH (52), p. 35, fig. : **n. sp.**

Kentodoris rubescens, Bergh, figd. ; ELIOT, P. Zool. Soc. London 1903, ii, p. 374.

Lamellidoris aureopuncte, p. 31, *miniata*, p. 32, Bermudas ; VERRILL, Tr. Connect. Ac. xi, figg. : **n. spp.**

Linguela variolosa, China Sea ; BERGH (52), p. 21, fig. : **n. sp.**

- Madrella aurantiaca*, Gulf of Marseilles ; VAYSSIÈRE, Ann. Mus. Marseille viii, p. 89, fig. : **n. sp.**
- Marionia pellucida*, E. Africa, *levis*, figd., p. 94, *ramosa*, p. 96, Zanzibar, *albotuberculata*, p. 97, *viridescens*, p. 98, E. Africa ; ELIOT, P. Zool. Soc. London 1904, ii : **n. spp.**
- Melibe pellucida*, Columbia R., Washington ; BERGH (52), p. 11, fig. : **n. sp.**
- Nembrotha cærulea*, E. Africa, p. 91, *affinis*, Zanzibar, p. 92, figd. ; ELIOT, P. Zool. Soc. London 1904, ii : **n. spp.**
- Notodoris minor*, Zanzibar ; ELIOT, t. c. p. 84, fig. : **n. sp.**
- Peltodoris angulata*, p. 365, *aurea*, p. 366, E. Africa ; ELIOT, op. cit. 1903, ii : **n. spp.**
- Peronodoris*, **n. gen.** for *P. cancellata*, **n. sp.**, Pacific Ocean ; BERGH (52), p. 45, fig.
- Platydorís pulcra* (sic), E. Africa, p. 377, *incerta*, p. 378, *papillata*, p. 379, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii : **n. spp.**
- Pleuroleura alba*, Zanzibar ; ELIOT, op. cit. 1904, ii, p. 104 : **n. sp.**
- Sclerodoris*, **n. gen.** for *Doris osseosa*, Kel., and *S. tuberculata*, p. 381, *minor*, *rubra*, p. 382, *coriacea*, p. 383, **n. spp.**, Zanzibar ; ELIOT, op. cit. 1903, ii, figg. : Genus is a synonym of *Peronodoris*, q. v. ; ELIOT, op. cit. 1904, i, p. 380.
- Sphærodores lævis*, Bergh, n. var. ; ELIOT, op. cit. 1904, i, p. 403.
- Staurodores verrucosa*, Cuv., figd. ; CUÉNOT (159).
- Staurodores depressa*, E. Africa, p. 363, *calva*, Zanzibar, p. 364 ; ELIOT, P. Zool. Soc. London 1903, ii : **n. spp.**
- Thordisa villosa*, figd. ; ELIOT (208).
- Thordisa stellata*, *crosslandi*, Zanzibar ; ELIOT, P. Zool. Soc. London 1903, ii, p. 368, figg. : **n. spp.**
- Trevelyana ceylonica*, Kelaart, p. 86, *crocea*, Bergh, p. 87, *bicolor* (?), Alder and Hancock, figd. ; ELIOT, op. cit. 1904, ii.
- Trevelyana coccinea*, E. Africa ; ELIOT, t. c. p. 85, fig. : **n. sp.**
- Trippa monsoni*, Zanzibar ; ELIOT, op. cit. 1903, ii, p. 371, fig. : **n. sp.**
- Tritonia incerta*, Pacific Ocean ; BERGH (52), p. 24, fig. : **n. sp.**

TECTIBRANCHIATA (including PTEROPODA).

- Anatomy of some Gymnosomate Pteropods ; KWIETNIEWSKI (377).
- Archaic form of Thecosomate Pteropod ; PELSENER (476).
- Species of Gymnosomata and Thecosomata from Siboga Expedition, recorded last year, fully described and figured with localities and anatomy ; TESCH (610).
- Actæon*, note on anatomy ; MAZZARELLI (430) : *A. globulinus*, Forbes, figd. ; SYKES, P. Malac. Soc. London vi, p. 29.
- Actæon pulchrior*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 168, fig. : **n. sp.**
- Akera bullata*, anatomy ; VAYSSIÈRE (629).
- Aplysia*, the heart ; STRAUB (598) : Notes on British forms ; HUNT (315) : *A. punctata*, chromosomes during maturation of the egg ; JANSSENS & ELRLINGTON (329).
- Atys pransa*, New South Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 191, fig. : *A. submalleata*, off the Andamans ; SMITH, Ann. Nat. Hist. xiv, p. 6 : **n. spp.**
- Bulla striatula*, Forbes, figd. ; SYKES, P. Malac. Soc. London vi, p. 37.
- Bullina elongata*, Jeffreys, figd. ; SYKES, t. c. p. 36.
- Corolla (Cymbuliopsis) spectabilis*, Dall, anatomy ; HEATH & SPAULDING (289).
- Cylindna hoernesii*, Weink., figd. ; SYKES, P. Malac. Soc. London vi, p. 36.

Cylichna pithiscus, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 168, fig. : *C. obscura*, off S. of Ireland ; SYKES, t. c. p. 37, fig. : *C. andamanica*, off the Andamans ; SMITH, Ann. Nat. Hist. xiv, p. 6 : **n. spp.**

Cylichnopsis, n. sect. of *Cylichna*, type *C. acrotoma*, Cossm. ; COSSMANN (140), p. 118.

Desmopteris papilio, Chun, anatomy and systematic position ; MEISENHEIMER (432).

Dolabrifera virens, Bermudas ; VERRILL, Tr. Connect. Ac. xi, p. 24, fig. : **n. sp.**

Haminea solitaria, anatomy, &c. ; SMALLWOOD (570) : Maturation, fertilization, &c. ; SMALLWOOD (571).

Notarchus brevipes, Red Sea ; HÄGG (278), p. 1, fig. : **n. sp.**

Oscanius membranaceus, nervous system ; DISTASO (192).

Peraclis reticulata, D'Orb., n. var. ; TESCH (610), p. 15.

Philine punctata, anatomy ; VAYSSIÈRE (629).

Philine sykesii, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 60, fig. : **n. sp.**

Placobranchopsis niveus, Bermudas ; VERRILL, Tr. Connect. Ac. xi, p. 27, fig. : **n. sp.**

Pleurobranchia meckeli, nervous system ; DISTASO (192).

Retusa excavata, lactea, figd. ; SYKES, P. Malac. Soc. London vi, p. 31.

Retusa dilatata, Gulf of Gabes ; PALLARY, J. Conchyl. lii, p. 215, fig. :

R. marshalli, off Portugal ; SYKES, P. Malac. Soc. London vi, p. 31,

fig. : *R. bysma*, Gulf of Oman ; MELVILL, t. c. p. 168, fig. : **n. spp.**

Runcina inconspicua, Bermudas ; VERRILL, Tr. Connect. Ac. xi, p. 28, fig. : **n. sp.**

Scaphander ceylanica, off Ceylon ; SMITH, Ann. Nat. Hist. xiv, p. 5 : **n. sp.**

Tethys (Aplysia) morio, p. 25, *tarda*, p. 26, Bermudas ; VERRILL, Tr. Connect. Ac. xi, figg. : **n. spp.**

Tornatina insignis, p. 36, *decorata*, p. 37, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**

NUCLEOBRANCHIATA.

Anatomy of some Heteropoda ; VAYSSIÈRE (627).

Cardiapoda richardi, Atlantic Ocean ; VAYSSIÈRE (627), p. 24, fig. : **n. sp.**

Carinaria mediterranea, Per. & Les., n. var. ; VAYSSIÈRE (627), p. 17.

Carinaria grimaldii, p. 18, *pseudorugosa*, p. 20, Atlantic Ocean ; VAYSSIÈRE (627), figg. : **n. spp.**

Firola souleyeti, p. 37, *gegenbauri*, p. 39, Atlantic Ocean ; VAYSSIÈRE (627), figg. : **n. spp.**

Firoloida kowalewskyi, Atlantic Ocean ; VAYSSIÈRE (627), p. 45, fig. : **n. sp.**

PROSOBRANCHIATA.

PECTINIBRANCHIATA.

TOXOGLOSSA.

TEREBRIDÆ, CONIDÆ, PLEUROTOMIDÆ, and CANCELLARIIDÆ.

Ancistrosyrinx orientis, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 56, fig. : **n. sp.**

Cancellaria pergradata, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 142, fig. : **n. sp.**

- +*Cancellariella*, **n. subgen.** of *Cancellaria*, type *C. neritoidea*, **n. sp.**, Miocene, Maryland; MARTIN (425), p. 168.
- Clathromangilia* (?) *strigilata*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 222, fig.: **n. sp.**
- Clathurella perlissa*, off the Andamans; SMITH, Ann. Nat. Hist. xiii, p. 460: *C. polyhymnia*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 165, figg.: *C. bulleni*, Ceylon; PRESTON, J. Malac. xi, p. 75, fig.: *C. chichijimana*, *centrosa*, p. 11, *lischkeana*, p. 12, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: *C. crassilirata*, Port Alfred; SMITH, J. Malac. xi, p. 27, fig.: *C. amphiblestrum*, p. 58, *epixantha*, *hedleyi*, p. 59, Persian Gulf; MELVILL, P. Malac. Soc. London vi, figg.: **n. spp.**
- +*Cochlespiropsis*, **n. gen.** for *C. engonata*, Conrad, and *C. blanda*, **n. sp.**; CASEY, Tr. Ac. St. Louis xiv, p. 143.
- Conus coromandelicus* is a *Conorbis*, with notes; MELVILL, P. Malac. Soc. London vi, p. 170.
- Cythara nevilliana*, Ceylon; PRESTON, J. Malac. xi, p. 75, fig.: **n. sp.**
- Daphnella cassandra*, New South Wales and Tasmania; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 187, fig: *D. eulimenes*, Gulf of Oman; MELVILL, J. Malac. xi, p. 84, fig.: *D. radula*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 8, fig.: *D. dea*, *lucasi*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 167, figg.: **n. spp.**
- Drillia worthingtoni*, off Andaman Islands; SMITH, Ann. Nat. Hist. xiii, p. 460: *D. streptonotus*, p. 7, *albiguttata*, p. 8, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: *D. thetis*, *subcontracta*, p. 26, *albonodulosa*, *prætermissa*, *nivosa*, p. 27, Port Alfred; SMITH, J. Malac. xi, figg.: **n. spp.**
- +*Eoclathurella*, **n. gen.** for *E. jacksonica*, *obesula*, **n. spp.**, Eocene; CASEY, Tr. Ac. St. Louis xiv, p. 166.
- +*Eodrillia*, **n. gen.** for *Pleurot. depygis*, Conrad, &c.; CASEY, t. c. p. 159.
- +*Eosurcula*, **n. gen.** for *Pleurot. moorei*, Gabb, &c.; CASEY, t. c. p. 145.
- Exechoptychia*, Cossm., is a synonym of *Cancellaria*; COSSMANN (140), p. 120.
- +*Fusitoma*, **n. gen.**, type *Fusus siphio*; CASEY, Tr. Ac. St. Louis xiv, p. 163.
- Genota*, note on species; RAYMOND, Nautilus xviii, p. 15.
- Ginnania tapruvrensis*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 218, fig.: **n. sp.**
- Glyphostoma siren*, Port Alfred; SMITH, J. Malac. xi, p. 28, figg.: **n. sp.**
- +*Glyptotoma*, **n. gen.** for *Pleurotoma crassiplicata*, Gabb, &c.; CASEY, Tr. Ac. St. Louis xiv, p. 140.
- Helenella*, **n. gen.** for *Pleurot. multigranosa*, Smith, and *H. insolens*, **n. sp.**, p. 168, St Helena; CASEY, t. c. p. 167.
- +*Hemisurcula*, **n. gen.**, type *Pleurot. silicata*, Aldr.; CASEY, t. c. p. 150.
- Homotoma mirabilis*, p. 219, *bracteata*, p. 220, Gulf of Gabes; PALLARY, J. Conchyl. lii, figg.: **n. spp.**
- +*Leptosurcula*, **n. gen.** for *Pleurot. beadata*, Harris; CASEY, Tr. Ac. St. Louis xiv, p. 157.
- Lophiotoma*, **n. gen.** for *Pleurotoma tigrina*, Lamk., &c., with *L. microstieta*, **n. sp.**, Philippine Is.; CASEY, t. c. p. 130.
- +*Lyrosurcula*, **n. gen.** for *L. elegans*, **n. sp.**, Eocene, &c.; CASEY, t. c. p. 156.
- Mangilia cinnamomea*, **n. subsp.**; PILSBRY, P. Ac. Philad. 1904, p. 10.
- Mangilia kochi*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 221, fig.: *M. posidonias*, Gulf of Oman; MELVILL, J. Malac. xi, p. 84, fig.: *M. alfredi*, Port Alfred; SMITH, t. c. p. 29, fig.: *M. adamantina*, Gulf of Oman, *aglaia*, Persian Gulf, p. 165, *apollinea*, *barbiton*, *callistephana*, Gulf of Oman, p. 166, *koweitensis*, Persian Gulf, p. 167; MELVILL, P. Malac. Soc. London vi, figg.: *M. pura*, *semicarinata*, p. 9, *kamakurana*, (*Cythara*) *hirasei*, p. 10, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: *M. bathmis*, p. 57, *ecphora*, (*Glyphostoma*) *pycnochila*, p. 58, Persian Gulf; MELVILL, P. Malac. Soc. London vi, figg.: **n. spp.**

- Megasurcula*, **n. gen.** for *Surcula carpenteriana*, Gabb, &c.; CASEY, Tr. Ac. St. Louis xiv, p. 147.
- +*Microsurcula*, **n. gen.**, type *M. nucleola*, **n. sp.**, Eocene; CASEY, t. c. p. 154.
- Mitromorpha volva*, Sby., var.; SMITH, J. Malac. xi, p. 31.
- Orthosurcula*, **n. gen.** for *Pleurot. longiforma* (sic), Aldr., and *Surcula transversaria*, Lamk.; CASEY, Tr. Ac. St. Louis xiv, p. 151.
- Parviterebra*, **n. gen.**, type *P. paucivolvis*, **n. sp.**, Japan; PILSBRY, P. Ac. Philad. 1904, p. 5, fig.
- Philbertia papillosa*, Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 220, fig.: **n. sp.**
- Pleurotomidæ*, on classification; CASEY (98): *P. travancorica*, Smith, **n. var.**; SMITH (579).
- Pleurotoma trypanodes*, Arabian Sea; MELVILL, P. Malac. Soc. London vi, p. 57, fig.: *P. (Surcula) margaritæ*, off the Andamans; SMITH, Ann. Nat. Hist. xiii, p. 458: *P. (Oligotoma) patricia*, (*Surcula*) *halicyria*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 164, figg.: *P. (Genota) stearnsiana*, p. 1, (*Antiplanes*) *catalinæ*, p. 2, California; RAYMOND, Nautilus xviii : **n. spp.**
- +*Protosurcula*, **n. gen.**, type *Pleurot. gabbi*, Conrad; CASEY, Tr. Ac. St. Louis xiv, p. 144.
- +*Ruscula*, **n. gen.** for *Fusus plicatus*, Lea, and *R. extricata*, **n. sp.**; CASEY, t. c. p. 161.
- +*Surculoma*, **n. gen.** for *Pleurot. tabulata*, Conr., &c.; CASEY, t. c. p. 153.
- Terebra histrio*, Desh., is West African; ANGEY, Nautilus xviii, p. 21: *T. hedleyi*, Tate, is an unnecessary name; SMITH (580).
- Terebra suspensa*, Port Alfred; SMITH, J. Malac. xi, p. 30, fig.: *T. hedleyi*, p. 3, *hizenensis*, *awajiensis*, p. 4, Japan; PILSBRY, P. Ac. Philad. 1904, figg.: **n. spp.**
- Tomopleura*, **n. gen.**, type *Pleurotoma nivea*, Phil.; CASEY, Tr. Ac. St. Louis xiv, p. 138.
- +*Tropisurcula*, **n. gen.** for *Drillia caseyi*, Aldr., and *T. crenula*, **n. sp.**; CASEY, t. c. p. 153.
- +*Varicobela*, **n. gen.**, type *Strombus smithi*, Aldr.; CASEY, t. c. p. 162.

RACHIGLOSSA.

OLIVIDÆ, MARGINELLIDÆ, VOLUTIDÆ, and MITRIDÆ.

- Ancilla albozonata, reevei*, Port Alfred; SMITH, J. Malac. xi, p. 29, figg.: **n. spp.**
- Marginella (Cryptospira) robusta*, Ascension Island; SOWERBY, P. Malac. Soc. London vi, p. 175, fig.: *M. munda*, *pura*, p. 31, *differens*, *dulcis*, *pseustes*, p. 32, Port Alfred; SMITH, J. Malac. xi, figg.: **n. spp.**
- Mitra stephanucha*, Melv., note on with **n. var.**; MELVILL, J. Malac. xi, p. 86.
- Mitra hirasei*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 12, fig.: *M. tunetana*, Gulf of Gabes; PALLARY, Ann. Mus. Marseille viii, No. 1, p. 8, fig.: *M. townsendi*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 163, fig.: **n. spp.**
- Oliva gibbosa*, Born, variation; MELVILL (435).
- Thala ogasawarana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 13, fig.: *T. ceylanica*, Ceylon; PRESTON, J. Malac. xi, p. 76, fig.: **n. spp.**
- Volvaria arena*, **n. var.**; DAVIS (181).
- Voluta brazieri*, Cox, is, from the type, probably a monstrosity of *V. deliciosa*, Montrz.; SMITH, P. Malac. Soc. London vi, p. 178.

FASCIOLARIIDÆ, TURBINELLIDÆ, BUCCINIDÆ, NASSIDÆ,
COLUMBELLIDÆ, MURICIDÆ, and CORALLIOPHILIDÆ.

- Amycla corniculum*, n. subsp.; PALLARY, J. Conchyl. lii, p. 228.
Buccinum inclitum, *chishimanum*, Kuril Is.; PILSBRY, Nautilus xviii, p. 87 : **n. spp.**
Bullia trifasciata, Port Alfred; SMITH, J. Malac. xi, p. 34, fig.: *B. (Pseudostrombus) strenaria*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 51, fig. : **n. spp.**
Caducifer, Dall (p. 77), belongs to *Buccinidæ*; PILSBRY & VANATTA (498).
 +*Clavellofus*, **n. gen.**, type *C. spiratus*, **n. sp.**, Eocene, Paris Basin; GRABAU, Smithsonian. Collect. xlv, p. 99.
Columbella pyramidalis, Sby., note on; SMITH, J. Malac. xi, p. 30: *C. turturina*, p. 13, *albinodulosa*, p. 14, n. subsp.; PILSBRY, P. Ac. Philad. 1904: *C. terpsichore*, *fauroti*, notes on; FISCHER, J. Conchyl. lii, p. 59.
Columbella (Astyris) agatha, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 52, fig.: *C. liocyma*, p. 14, *somnium*, *hakajimana*, p. 15, *divaricata*, p. 16, Japan; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
Cominella (?) sulcata, Sby., is probably a *Daphnella*; SMITH, J. Malac. xi, p. 28: *C. unifasciata*, Sby., is a synonym of *Purpura castanea*, Dkr.; SMITH, t. c. p. 33.
Coralliophila jeffreysi, n. var.; PILSBRY, P. Ac. Philad. 1904, p. 16.
Coralliophila dissimulans, Ceylon; PRESTON, J. Malac. xi, p. 77, fig. : **n. sp.**
 +*Cosmolithes*, **n. gen.**, type *Fusus uniplicatus*, Lam.; GRABAU, Smithsonian. Collect. xlv, p. 142.
Cyclonassa vayssierei, Bizerta; PALLARY, Ann. Mus. Marseille viii, No. 1, p. 9, fig. : **n. sp.**
Cyllene japonica, Japan; PILSBRY, P. Ac. Philad. 1904, p. 19, fig. : **n. sp.**
 +*Falsifusus*, **n. gen.**, type *Fusus meyeri*, Aldr.; GRABAU, Smithsonian. Collect. xlv, p. 80.
Fasciolaria, amitosis in the embryo; OSBORN (461, 462).
 +*Fulgurofus*, **n. gen.**, type *Fusus quercollis*, Harris; GRABAU, Smithsonian. Collect. xlv, p. 86.
Fusidæ, notes on family, genera, protoconch, &c.; GRABAU (265): *F. longicaudus*, Bory, p. 28, *nodosoplicatus*, Dkr., p. 32, *perplexus*, A. Ad., p. 33, *dupetit-thouarsi*, Kien., p. 46, n. varr.; GRABAU (265).
Fusus suboblitus, Japan; PILSBRY, P. Ac. Philad. 1904, p. 18, fig.: *F. brasiliensis*, Brazil; GRABAU, Smithsonian. Collect. xlv, p. 66, fig.: *F. cingulatus*, Port Alfred; SMITH, J. Malac. xi, p. 30, fig. : **n. spp.**
Heilprinia, **n. gen.**, type *Fusus caloosaensis*, Heilprin; GRABAU, Smithsonian. Collect. xlv, p. 87.
Latiaxis kieneri, apparently **n. n.** for *Murex cariniferus*, auct. non Sby.; HIDALGO (305), p. 23.
Maculotriton, Dall (p. 78), belongs to *Muricidæ*, with n. var. of *M. bracteatus*, Hinds; PILSBRY & VANATTA (498).
Megalatractus, notes on, with anatomy; KESTEEVEN (350).
Metula mitrella, Ad. & Rve., is a synonym of *M. hindsii*, Ad.; SMITH (579).
Mitrella spelta, Monts., figd.; PALLARY, J. Conchyl. lii, p. 229.
Murex trunculus, n. var.; PALLARY (468): *M. brandaris*, note on variation, with n. varr.; DAUTZENBERG (175).
Murex multispinosus, Philippines; SOWERBY, P. Malac. Soc. vi, p. 7, fig.:
 M. (Pteronotus) exquisitus, Hab. incert.; SOWERBY, t. c. p. 176, fig.:
 M. (Ocenebra) sykesi, Ceylon; PRESTON, J. Malac. xi, p. 76, fig. : **n. spp.**
Nassa semiplicata, n. subsp.; PILSBRY, P. Ac. Philad. 1904, p. 20: *N. ferussaci*, n. subsp.; PALLARY, J. Conchyl. lii, p. 226.
Nassa pæciloticta, Port Alfred; SMITH, J. Malac. xi, p. 33, fig.: *N.*

- (*Phrontis*) *siva*, Ceylon, (*P.*) *gangetica*, Calcutta; PRESTON, t. c. p. 76, fig. : **n. spp.**
- Ocenebra monoptera*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 17, fig. : **n. sp.**
- Ocenebrina edwardsi*, n. var.; PALLARY, J. Conchyl. lii, p. 231.
- Phos tabidus*, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 191, fig. : **n. sp.**
- Pseudofusus locardi*, **n. n.** for *P. rusticulus*, Locard non Monts.; PALLARY, J. Conchyl. lii, p. 225.
- +*Psilocochlis*, **n. subgen.** of *Turbinella* for *T. m'Callie*, **n. sp.**, Eocene, Georgia; DALL, Nautilus xviii, p. 9.
- Purpura texturata*, Port Alfred; SMITH, J. Malac. xi, p. 32, fig. : *P. tosana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 17, fig. : **n. spp.**
- +*Rhopalithes*, **n. gen.**, type *Fusus noe*, Lam.; GRABAU, Smithson. Collect. xlv, p. 135.
- Sistrum morus*, n. var.; PILSBRY, P. Ac. Philad. 1904, p. 18.
- Tritonidea tosana*, Japan; PILSBRY, t. c. p. 19, fig. : **n. sp.**
- Trophon*, Magellan fauna reviewed; STREBEL (599): *T. truncatus*, n. var.; JENSEN (334).
- Trophon ohlini*, p. 203, *pæssleri*, p. 213, *elongatus*, p. 217, *pseudoelongatus*, p. 220, *albus*, p. 221, *obesus*, *acuminatus*, p. 222, *fenestratus*, p. 225, *hoylei*, p. 227, *brucei*, p. 230, *ornatus*, p. 231, *standeni*, p. 232, *couthouyi*, p. 236, *elegans*, p. 241, *ringei* (Pfeffer), p. 242, Magellan Province; STREBEL, Zool. Jahrb. Syst. xxi, figg. : **n. spp.**

TÆNIOGLOSSA.

- LOTORIIDÆ, COLUMBELLINIDÆ, CASSIDIDÆ, DOLIIDÆ, CYPRÆIDÆ, STROMBIDÆ, APORRHAIIDÆ, and STRUTHIOLARIIDÆ.
- Aporrhaidæ*, classification; COSSMANN (140).
- Aquillus* and allies, notes on, as on *A. labiosus* (Wood); PILSBRY, P. Ac. Philad. 1904, p. 21.
- Caducifer*, **n. sect.** of *Colubraria*, type *Triton truncatus*, Hinds; DALL, Smithson. Collect. xlvii, p. 136: Belongs to *Buccinidæ*; PILSBRY & VANATTA (498).
- Cassidaria echinophora*, large form; KOBELT (360).
- Cassidea sinuosa*, South Australia; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 141, fig. : **n. sp.**
- Cassis paucirugis*, Menke, note on; KENYON (349).
- Cassis* (*Semicassis*) *fortisulcata*, Hawaiian Is.; SMITH, P. Malac. Soc. London vi, p. 21, fig. : **n. sp.**
- Columbellinidæ*, classification; COSSMANN (140).
- Craspedotriton*, **n. sect.** of *Bufonaria*, type *Triton convolutus*, Brod.; DALL, Smithson. Collect. xlvii, p. 119.
- Cypræida* of Persian Gulf, &c., with n. varr. of *C. caurica*, *ocellata*, *pulchella*; MELVILL & STANDEN (440): *C. onyx*, malformed; MELVILL, P. Malac. Soc. London vi, p. 3: *C. umbilicata*, white var.; SOWERBY, t. c. p. 1: *C. caputanguis*, Phil., type is at Santiago; BYNE, J. Conch. xi, p. 57.
- Dientomochilus*, **n. gen.**, type *Strombus ornatus*, Desh.; COSSMANN (140), p. 38.
- +*Dilatilabrum*, **n. n.** for *Oncoma*, Mayer non Fieb.; COSSMANN (140), p. 12.
- Dolium magnificum*, China Sea; SOWERBY, P. Malac. Soc. London vi, p. 7, fig. : **n. sp.**
- Eugyrina*, **n. n.** for *Gyrina*, Schum., non *Gyrinus*, L.; DALL, Smithson. Collect. xlvii, p. 132.
- Eutritonium*, **n. gen.**, type *Murex tritonis*, L.; COSSMANN (140), p. 123.

Lotorium spengleri, eggs of; HEDLEY (292).

Lotorium (Colubraria) concinnatum, Persian Gulf, &c.; MELVILL, P. Malac. Soc. London vi, p. 51, fig.: **n. sp.**

Maculotriton, **n. sect.** of *Colubraria*, type *Triton bracteatus*, Hinds; DALL, Smithson. Collect. xlvii, p. 136: Belongs to *Muricidae*; PILSBRY & VANATTA (498).

+*Maussenetia*, **n. sect.** of *Chenopus*, type *M. staadti*, **n. sp.**, Tertiary, France; COSSMANN (140), p. 71.

Monostiolum, **n. sect.** of *Colubraria*, type *Triton swifti*, Tryon; DALL, Smithson. Collect. xlvii, p. 136.

Paralagena, **n. n.** for *Lagena*, Mörch non Walker; DALL, t. c. p. 132.

Phrygiomurex, **n. subgen.** of *Colubraria*, type *Triton sculptilis*, Rve.; DALL, t. c. p. 137.

+*Pietteia*, **n. subgen.** of *Dicroloma*, type *Rostellaria hamus*, Desh.; COSSMANN (140), p. 90.

+*Quadrinererus*, **n. subgen.** of *Chenopus*, type *Pterocera ornata*, Buv.; COSSMANN (140), p. 61.

Ranellidae, review of; DALL (171).

Septidae (or *Lotoriidae*), review of; DALL (171).

Strombidae, classification; COSSMANN (140).

Struthiolariidae, classification; COSSMANN (140).

+*Struthiolariopsis*, **n. gen.**, type *Fusus ferrieri*, Phil., Tertiary, Chili; WILCKENS, N. Jahrb. Min. B.B. xviii, p. 208.

Teniola, **n. sect.** of *Colubraria*, type *Triton decollatus*, Sby.; DALL, Smithson. Collect. xlvii, p. 137.

Tritoniscus, **n. sect.** of *Cymatium*, type *Triton laroisii*, Petit; DALL, t. c. p. 134.

Tritonocauda, **n. sect.** of *Cymatium*, type *Murex caudatus*, Gmel.; DALL, t. c. p. 133.

Turritriton, **n. sect.** of *Cymatium*, type *Triton gibbosus*, Brod.; DALL, t. c. p. 133.

CERITHIIDÆ, PLANAXIDÆ, VERMETIDÆ, TURRITELLIDÆ, and CÆCIDÆ.

Bittium caudatum, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 161 fig.: **n. sp.**

Bittium furvum, Watson, is the young of *Cerithium icarus*, Bayle; HEDLEY (292).

Cæcum digitulum, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 94, fig.: **n. sp.**

Cerithium trailli, **n. subsp.**; PILSBRY, P. Ac. Philad. 1904, p. 25.

Cerithium sykesi, Adriatic; BRUSINA, Nachrbl. Deutsch. malak. Ges. 1904, p. 167: *C. subscalatum*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 25, fig.: *C. albocoopertum*, Bermuda; DAVIS, Nautilus xvii, p. 129, fig.: *C. anembatum, pervicax*, Gulf of Oman; MELVILL, P. Malac. Soc. London vi, p. 161, figg.: **n. spp.**

+*Discovermetulus*, **n. gen.**, type *D. pissarroi*, **n. sp.**, Tertiary, France; ROVERETO, Bull. Soc. geol. Ital. xxiii, p. 68.

Mathilda carystia, figd.; MELVILL, J. Malac. xi, p. 84.

Pirenella conica, **n. subsp.**; PALLARY, J. Conchyl. lii, p. 232.

Planaxis brasilianus, Lam., notes on; HEDLEY (292).

Stephopoma nucleogranosum, South Australia; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 143, fig.: **n. sp.**

Streblaceras cygnicollis, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 189, fig.: **n. sp.**

Trifora concatenata, Gulf of Oman; MELVILL, P. Malac. Soc. London vi,

- p. 162, fig.: *T. fuscescens, fuscomaculata, convexa*, Port Alfred; SMITH, J. Malac. xi, p. 37, figg.: **n. spp.**
Triphora princeps, p. 174, *smithi*, p. 175, Hab. incert.; SOWERBY, P. Malac. Soc. London vi, figg.: **n. spp.**
Turritella illustris, Persian Gulf; MELVILL, J. Malac. xi, p. 81, fig.: **n. sp.**

MELANIIDÆ, PSEUDOMELANIIDÆ, LITTORINIDÆ, and FOSSARIDÆ.

- Burtonilla*, **n. gen.** for *Turbonilla* (?) *terebriformis*, Smith; SMITH, P. Malac. Soc. London vi, p. 97.
Couthouyia corrugata, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 95, fig.: **n. sp.**
Fossarus (*Couthouyia*) *quinquecarinalis*, (*C.*) *thelacme*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 54, figg.: **n. spp.**
Giraudia minor, tanganyicensis, figd.; SMITH, t. c. p. 96.
Lacuna globosa, Bay of Bengal; SMITH, Ann. Nat. Hist. xiii, p. 472: **n. sp.**
Lechaptosisia ponsonbyi, figd.; SMITH, P. Malac. Soc. London vi, p. 94.
Littorina rudis, habits; BOHN (71, 72).
Melania libertina, n. var.; PILSBRY & HIRASE, Nautilus xviii, p. 9.
Melania morti, p. 13, *cingulifera*, p. 14, New Hebrides; SYKES, P. Malac. Soc. London vi, figg.: *M. vara*, Java; BULLEN, t. c. p. 110, fig.: *M. hahajimana*, Japan; PILSBRY & HIRASE, Nautilus xviii, p. 8: *M. (Plotia) schneeii*, Marshall Is.; BOETTGER, Zool. Jahrb. Syst. xx, p. 408: *M. ceruginosa*, Java, *dulcis*, Yunnan, *fortitudinis*, p. 51, Java, *lauta*, p. 52, Yunnan; FULTON, J. Malac. xi, figg.: **n. spp.**
Melanopsis, n. varr. with fig. of *M. mourebeyensis*; PALLARY (466).
Melanopsis hungarica, Hungary; KORMOS, Allatt. Kozl. Magyar Tars. iii, p. 107, fig.: **n. sp.**
†*Pauluccia*, "**nov. Melanopsidarum subgen.**" for *P. boettgeri*, **n. sp.**, Tertiary, S. Europe; BRUSINA (88), p. viii.
Stanleya rotundata, Lake Tanganyika; SMITH, P. Malac. Soc. London vi, p. 93: **n. sp.**

SOLARIIDÆ, RISSOIDÆ, HYDROBIIDÆ, VIVIPARIDÆ, VALVATIDÆ, AMPULLARIIDÆ, and ASSIMINEIDÆ.

- Amnicola positura*, Petterd, is a synonym of *Hydrobia brazieri*, Smith; HEDLEY (292).
Amnicola augustina, Florida; PILSBRY, Nautilus xvii, p. 113: **n. sp.**
Ampullaria and allied groups, notes on; DALL (165).
Assiminea norburyi, Lin Chao; JONES & PRESTON, P. Malac. Soc. London vi, p. 147, fig.: **n. sp.**
Bythinia richmondiana, Petterd, and *Pupa anodonta*, Musson & Hedley, are synonyms of *Hydrobia petterdi*, Smith; HEDLEY (292).
Emmericia, notes on, with new names; BRUSINA (89).
Epigrus simsoni, Tate & May, is a synonym of *E. ischnus*, Tate; HEDLEY (292).
Epigrus protractus, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 185, fig.: **n. sp.**
Fenella xanthacme, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 56, fig.: **n. sp.**
Jullienia carinata, Yunnan; FULTON, J. Malac. xi, p. 52, fig.: **n. sp.**
Limnopomus, **n. sect.** of *Ampullaria*, type *A. columellaris*, Gould; DALL, J. Conch. xi, p. 54.
†*Morphotropis*, **n. gen.** for *M. tremulans*, Barr., &c., Silurian, Bohemia; PERNER (477), Explan. pl. lxxvii.

- +*Pachystrophia* (Koken MS.), **n. gen.**, type *P. deveva*, Eichw., sp., Silurian; PERNER (477), Explan. pl. lxxiii.
- Paludestrina taylora*, habits and reproduction; JACKSON & TAYLOR (326): *P. culminea*, d'Orb. = *P. andecola*, d'Orb., figd.; BAVAY (40).
- Paludestrina popoensis*, Lake Popo, Bolivia; BAVAY, Bull. Soc. zool. France xxix, p. 154, fig.: **n. sp.**
- +*Pleuromphalus*, **n. gen.** for *P. seductor*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxxvii.
- +*Prosolarium*, **n. gen.** for *P. procerum*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxii.
- Pyrgula neveui*, Lake Titicaca, Bolivia; BAVAY, Bull. Soc. zool. France xxix, p. 155, fig.: **n. sp.**
- +*Rhabdospira*, **n. gen.** for *R. bifrons*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxxv.
- Rissoa elata*, nervous system; QUINTARET (507): *R. monodonta*, n. var., *spongicola*, Monts., figd.; PALLARY, J. Conchyl. lii, p. 234: *R. woodsi*, **n. n.** for *R. cyclostoma* var. *rosea*, Woods, which is a species; PRITCHARD & GATLIFF, P. Soc. Victoria xiv, p. 104 [omitted, 1902]: *R. agnewi*, Woods, note on; HEDLEY (292).
- Rissoa tokyoensis*, *ogasawarana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 26, figg.: *R. suteri*, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 96, fig.: *R. integella*, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 185, fig.: *R. (Scrobs) columen*, Persian Gulf; MELVILL, P. Malac. Soc. London vi, p. 53, fig.: *R. perspecta*, *conspicua*, Port Alfred; SMITH, J. Malac. xi, p. 35, fig.: **n. spp.**
- Rissoina tridentata*, Mich., note on with synonymy; PILSBRY, P. Ac. Philad. 1904, p. 28.
- Rissoina alfredi*, Port Alfred; SMITH, J. Malac. xi, p. 35, fig.: *R. (Phosinella) phormis*, Gulf of Oman; MELVILL, t. c. p. 80, fig.: *R. rex*, *mater-insulae*, (*Rissolina*) *levicostulata*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 27, figg.: **n. spp.**
- Seguenziella*, **n. n.** for *Taramellia*, Seguenza non Campana; SACCO (546), p. 123.
- +*Sinutropis*, **n. gen.** for *S. interruptens*, Barr., Silurian, Bohemia; PERNER (477), Explan. pl. lxxvii.
- Solarium admirandum*, figd.; MELVILL, J. Malac. xi, p. 84.
- Somatogyryus hinkleyi*, *constrictus*, p. 135, *nanus*, p. 136, *umbilicatus*, *coosensis*, p. 137, *obtusius*, *crassus*, p. 138, Alabama, *georgianus*, p. 139, Georgia and Alabama, *pennsylvanicus*, p. 140, Pennsylvania, *virginicus*, p. 141, Virginia, *pilsbryanus*, p. 142, Alabama; WALKER, Nautilus xvii, figg.: **n. spp.**
- Stenothyra formosana*, Formosa; PILSBRY & HIRASE, Nautilus xviii, p. 8: **n. sp.**
- Stiva*, **n. gen.** for *S. ferruginea*, **n. sp.**, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 192, fig.
- Taramellia*, Seguenza, renamed *Seguenziella*, q. v.
- Valvata piscinalis*, n. var.; ANDREAE (16).
- Valvata maroccana*, N. W. Africa; PALLARY, J. Conchyl. lii, p. 41, fig.: *V. (Cincinnati) gejeri*, Bavaria; MENZEL, Nachrbl. Deutsch. malak. Ges. 1904, p. 78, fig.: **n. spp.**
- Vitrella*, review of Wurtemberg fauna, with n. varr.; GEYER (250): *V. quenstedtii*, Clessin, anatomy; SEIBOLD (553).
- Vitrella putei*, p. 317, *exigua*, *labiata*, p. 320, *franconia*, p. 323, Wurtemberg; GEYER, Jahresh. Ver. Wurttemb. lx, figg.: **n. spp.**
- Vivipara rouyeri*, Java; BULLEN, P. Malac. Soc. London vi, p. 110, fig.: **n. sp.**

CYCLOPHORIDÆ and CYCLOSTOMATIDÆ.

- Alycæus awaensis*, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 117 : *A. oshimanus*, Japan ; PILSBRY & HIRASE, op. cit. xviii, p. 7 : *A. purus*, *tokunoshimanus*, p. 617, *laevicervix*, p. 618, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
- Angigaster*, **n. sect.** of *Diplommatina*, type *D. vespa*, **n. sp.**, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 619.
- Cataulus marginatus*, Pfr., *nevilli*, Sykes, n. varr. ; FULTON (238).
- Cataulus rugosa*, *sykesi*, Ceylon ; FULTON, Ann. Nat. Hist. xiii, p. 452 : **n. spp.**
- Cyathopoma iota*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 619 : **n. sp.**
- Cyclophorus atomus*, Morel., note on ; ANCEY, J. Conchyl. lii, p. 309.
- Cyclostoma andreweæ*, Ancey, is a *Colobostylus* ; ANCEY, t. c. p. 308 : *C. moniliatum*, n. var. ; ANCEY, t. c. p. 310.
- Cyclotus nudus*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 618 : **n. sp.**
- Diplommatina æsopus*, Bav. and Dtz., note on ; ANCEY, J. Conchyl. lii, p. 315.
- Diplommatina tosana*, *tosanella*, *gibbera*, p. 620, *goniobasis*, *kiushuensis*, p. 621, *tokunoshimana*, *ventriosa*, p. 622, *kumejimana*, *lateralis*, *immersidens*, p. 623, *vespa*, p. 624, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904 : **n. spp.**
- Japonia toshimana*, Japan ; PILSBRY & HIRASE, Nautilus xvii, p. 104 : *J. tokunoshimana*, Japan ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 616 : **n. spp.**
- Lagochilus obliquistriatus*, Java ; BULLEN, P. Malac. Soc. London vi, p. 110, fig. : **n. sp.**
- Leptopoma crenilabre*, Strubell, note on with fig. ; FULTON (243) : *L. leucorraphe*, Martens, n. var. ; SYKES, J. Malac. xi, p. 92.
- Leptopoma gebiensis*, Gebi I. ; FULTON, J. Malac. xi, p. 54, fig. : *L. ponsonbyi*, Obi ; SYKES, t. c. p. 91, fig. : **n. spp.**
- Mascaria bifasciata*, Sby., note on ; ANCEY, J. Conchyl. lii, p. 309.
- Nakadaella*, **n. gen.** for *Cyclotus* (?) *micron*, Pilsbry ; ANCEY, t. c. p. 315.
- Neocyclotus panamensis*, Panama ; DA COSTA, P. Malac. Soc. London vi, p. 6, fig. : **n. sp.**
- Omphalotropis varians*, MlIdff, is a synonym of *O. pæcila*, Ancey ; ANCEY, J. Conchyl. lii, p. 308.
- Opisthostoma*, notes on sectional names ; ANCEY, t. c. p. 315.
- Opisthostoma beddomei*, Borneo ; SMITH, P. Malac. Soc. London vi, p. 105, fig. : **n. sp.**
- Pupinide*, notes on ; COLLIER (125) : *P. miokoana*, MlIdf, is a synonym of *P. beddomei*, Ancey ; ANCEY, J. Conchyl. lii, p. 308.
- Pupinella oshimæ*, n. subsp. ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 618.
- Realia turriculata*, Pfr., n. subsp. ; SUTER, P. Malac. Soc. London vi, p. 157.

ACICULIDÆ and TRUNCATELLIDÆ.

- Coziella*, note on, *C. confusa*, Smith, is a synonym of *C. badgerensis*, Johnston ; HEDLEY (292).
- +*Pseudotruncatella*, **n. gen.**, type *Pupa microceras*, Braun ; ANDREAE, Mt. Mus. Hildesheim xx, p. 15.

HIPPONYCIDÆ, CAPULIDÆ, XENOPHORIDÆ, NARICIDÆ and
NATICIDÆ.

- Amalthea conica*, Schum., note on ; PILSBRY, P. Ac. Philad. 1904, p. 24.
 †*Antispira*, **n. gen.** for *A. præcox*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lii.
 †*Auripygma*, **n. gen.** for *A. fortior*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lxi.
 †*Berliceria*, **n. gen.**, type *B. ledonica*, **n. sp.**, Ledonian Jura ; LORIOU (401), p. 131.
Capulus fragilis, Bay of Bengal ; SMITH, Ann. Nat. Hist. xiv, p. 1 : *C. devotus*, New South Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 190, fig. : **n. spp.**
Crepidula, origin of cleavage centrosomes ; CONKLIN (135).
Ergæa walshi, note on ; PILSBRY, P. Ac. Philad. 1904, p. 24.
 †*Fritschia*, **n. gen.** for *F. multicostata*, *paucicostata*, **n. spp.**, Trias, Germany ; PICARD, Jahrb. geol. Landesanst. Berlin xxii, p. 487.
 †*Læogyra*, **n. gen.** for *L. bohémica*, Perner, Silurian, Bohemia ; PERNER (477), Expln. pl. lii.
Natica millepunctata, hebræa, **n. varr.** ; PALLARY (468).
Natica napus, decipiens, Port Alfred ; SMITH, J. Malac. xi, p. 34, fig. : **n. spp.**
 †*Naticonema*, **n. gen.** for *N. similis*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. liv.
 †*Otospira*, **n. gen.** for *O. squamulata*, Perner, Silurian, Bohemia ; PERNER (477), Expln. pl. lvi.
 †*Palæonustus*, **n. gen.** for *P. comes*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.
Polinices sagamiensis, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 23, fig. : **n. sp.**
 †*Pseudotylostoma*, **n. gen.** for *P. romeroi*, **n. sp.**, Cretaceous, Argentina ; IHERING, An. Mus. Buenos Aires ii, p. 207.
 †*Ptychonema*, **n. gen.** for *P. nigra*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.
 †*Versispira*, **n. gen.** for *V. contraria*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.

PTENOGLOSSA.

SCALIDÆ.

- Acclis beltista*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 53, fig. : *A. thesauraria*, Gulf of Oman ; MELVILL, J. Malac. xi, p. 79, fig. : **n. spp.**
Berthais, **n. gen.** for *Scala intertexta*, M. and St., and *Onoba egregia*, A. Ad., figd. ; MELVILL, P. Malac. Soc. London vi, p. 61.
Scala fimbriolata, Melv., is a synonym of *S. kieneri*, Canefri ; SMITH (579).
Scala (Acrilla ?) cophinodes, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 53, fig. : **n. sp.**
Scalaria jolyi, Monts., figd. ; PALLARY (468).

GYMNOGLOSSA.

EULIMIDÆ and PYRAMIDELLIDÆ.

- Actæopyramis bulinea*, Lowe, **n. var** ; PALLARY, J. Conchyl. lii, p. 235.
Asmunda, **n. subgen.** of *Turbonilla*, type *Chemnitzia turrita*, C. B. Ad. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 9.

- Baldra*, **n. subgen.** of *Turbonilla*, type *T. archeri*, **n. sp.** ; DALL & BARTSCH, t. c. p. 9.
- Besla*, **n. subgen.** of *Odostomia*, type *Chrysallida convexa*, Cptr. ; DALL & BARTSCH, t. c. p. 10.
- Callolongcheus*, **n. subgen.** of *Pyramidella*, type *Pyramidella jamaicensis*, Dall ; DALL & BARTSCH, t. c. p. 5.
- Cingulina brazieri*, Angas, is correctly placed and the name *Terebra hedleyi*, Tate, unnecessary ; SMITH (580).
- Cossmannica*, **n. subgen.** of *Pyramidella*, type *P. clandestina*, Desh. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Egila*, **n. subgen.** of *Odostomia*, type *Chrysallida lacunata*, Cptr. ; DALL & BARTSCH, t. c. p. 11.
- Enterocenos*, **n. gen.** for *E. ostergreni*, **n. sp.**, Norway ; BONNEVIE, Zool. Jahrb. Anat. xv, p. 731, fig. : Spermiogenesis ; BONNEVIE (77).
- Eulima paxillus*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 96, fig. : *E. (Subularia) hypolysina*, Gulf of Oman ; MELVILL, J. Malac. xi, p. 83, fig. : *E. præcurta*, Gulf of Gabes ; PALLARY, J. Conchyl. lii, p. 239, fig. : *E. distincta*, Port Alfred ; SMITH, J. Malac. xi, p. 35, fig. : **n. spp.**
- Eulinella nivea, minor*, Port Alfred ; SMITH, J. Malac. xi, p. 36, fig. : *E. ææa*, Persian Gulf ; MELVILL, t. c. p. 81, fig. : *E. gedrosica*, Persian Gulf, p. 55, *venusta*, Arabian Sea, p. 56 ; MELVILL, P. Malac. Soc. London vi, figg. : **n. spp.**
- Evalina*, **n. subgen.** of *Odostomia*, type *O. americana*, **n. sp.** ; DALL & BARTSCH, P. Soc. Washington xvii, p. 12.
- Folinella*, **n. subgen.** of *Odostomia*, type *Amoura anguliferens*, Folin ; DALL & BARTSCH, t. c. p. 10.
- Haldra*, **n. subgen.** of *Odostomia*, type *Chrysallida photis*, Cptr. ; DALL & BARTSCH, t. c. p. 11.
- Heida*, **n. subgen.** of *Odostomia*, type *Syrnola caloosaensis*, Dall ; DALL & BARTSCH, t. c. p. 13.
- Iphiaana*, **n. subgen.** of *Pyramidella*, type *Syrnola densistriata*, Garrett ; DALL & BARTSCH, t. c. p. 6.
- Ividia*, **n. subgen.** of *Odostomia*, type *Parthenia armata*, Cptr. ; DALL & BARTSCH, t. c. p. 11.
- Lancella*, **n. subgen.** of *Turbonilla*, type *T. (Lancea) elongata*, Pse. ; DALL & BARTSCH, t. c. p. 9.
- Leiostraca murchisoni*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 97, fig. : **n. sp.**
- Lysacme*, **n. subgen.** of *Odostomia*, type *Chrysallida clausiliformis*, Cptr. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 14.
- Milda*, **n. subgen.** of *Pyramidella*, type *Obeliscus ventricosus*, Quoy ; DALL & BARTSCH, t. c. p. 4.
- Mucronalia birtsi*, Ceylon ; PRESTON, J. Malac. xi, p. 77, fig. : *M. oxytenes*, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 163, fig. : **n. spp.**
- Mumiola carbacea*, Arabian Sea ; MELVILL, J. Malac. xi, p. 83, fig. : **n. sp.**
- Odostomia callipyrga*, **n. n.** for *Odetta elegans*, Folin ; DALL & BARTSCH, P. Soc. Washington xvii, p. 12.
- Odostomia (Vilia, n. subgen.) pilsbryi*, Singapore, p. 15, (*Evalina*, **n. subgen.**) *americana*, California, p. 16 ; DALL & BARTSCH, t. c. : *O. dorica*, Persian Gulf ; MELVILL, J. Malac. xi, p. 82, fig. : **n. spp.**
- Orinella*, **n. subgen.** of *Pyramidella*, type *Orina pinguicula*, A. Ad. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Oscilla faceta, jocosa*, Gulf of Oman ; MELVILL, J. Malac. xi, p. 82, figg. : **n. spp.**
- Pyramidellidae*, review of genera and sections ; DALL & BARTSCH (172).
- Pyramidella (Sulcorinella, n. subgen.) dodona*, Florida ; DALL & BARTSCH, P. Soc. Washington xvii, p. 14 : **n. sp.**

- Saccoina*, **n. subgen.** of *Turbonilla*, type *Spica monterosatoi*, Sacco ; DALL & BARTSCH, t. c. p. 8.
- Stomega*, **n. sect.** of *Odostomia*, type *O. conspicua*, Alder ; DALL & BARTSCH, t. c. p. 13.
- Styloptygma lacteola*, Ceylon ; PRESTON, J. Malac. xi, p. 77, fig. : **n. sp.**
- Sulcorinella*, **n. subgen.** of *Pyramidella*, type *P. dodona*, **n. sp.** ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Syrnola umbagiosa*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 55, fig. : **n. sp.**
- Syrnolina*, **n. subgen.** of *Pyramidella*, type *Syrnola rubra*, Pse. ; DALL & BARTSCH, P. Soc. Washington xvii, p. 6.
- Tropeas*, **n. subgen.** of *Pyramidella*, type *P. subulata*, A. Ad. ; DALL & BARTSCH, t. c. p. 5.
- Turbonilla terebra, cingulata*, Dkr., notes on with figg. ; PILSBRY, P. Ac. Philad. 1904, p. 30.
- Turbonilla* (*Baldra*, **n. subgen.**) *archeri*, Singapore ; DALL & BARTSCH, P. Soc. Washington xvii, p. 15 : *T. gemmula, decora*, Port Alfred ; SMITH, J. Malac. xi, p. 36, figg. : *T. stricta*, p. 236, *mirifica*, p. 237, *tenuis*, p. 238, Gulf of Gabes ; PALLARY, J. Conchyl. lii, figg. : *T. angustissima*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 55, fig. : *T. inaequalis, microperone*, p. 162, *recticostata*, p. 163, Gulf of Oman ; MELVILL, t. c. figg. : *T. hiradoensis*, p. 29, (*Cingulina*) *triarata*, p. 31, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
- Ulfa*, **n. subgen.** of *Pyramidella*, type *P. cossmanni* (**n. n.** for *Syrnola striata*, COSSM.) ; DALL & BARTSCH, P. Soc. Washington xvii, p. 5.
- Vagna*, **n. subgen.** of *Pyramidella*, type *P. paumotensis*, Tryon ; DALL & BARTSCH, t. c. p. 5.
- Vilia*, **n. subgen.** of *Odostomia*, type *O. pilsbryi*, **n. sp.** ; DALL & BARTSCH, t. c. p. 10.
- Visma*, **n. subgen.** of *Turbonilla*, type *Eulimella tenuis*, Sby. ; DALL & BARTSCH, t. c. p. 8.
- Voluspa*, **n. subgen.** of *Pyramidella*, type *Pyramidella auricoma*, Dall ; DALL & BARTSCH, t. c. p. 4.

SCUTIBRANCHIATA.

RHIPHIDOGLOSSA.

HELICINIDÆ.

- Helicina verecunda*, **n. subsp.** ; PILSBRY & HIRASE, P. Ac. Philad. 1904, p. 625 : *H. pterophora*, Sykes, is a synonym of *H. oxyrhynca* ; ANCEY, Nautilus xviii, p. 22 : *H. euglypta*, Crosse, is a synonym of *H. plicatula*, Pfr. ; ANCEY, t. c. p. 309.
- Helicina subsuturalis*, Marshall Is. ; BOETTGER, Zool. Jahrb. Syst. xx, p. 411 : *H. baldwini*, Kauai, p. 126, *dissotropis*, Oahu, *sulculosa*, Hawaii, p. 127 ; ANCEY, P. Malac. Soc. vi, figg. : **n. spp.**

NERITIDÆ, MACLURITIDÆ, TURBINIDÆ, TROCHIDÆ, and CYCLOSTREMATIDÆ.

- Basilissa* (*Ancistrobasis*) *compsa*, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 160, fig. : **n. sp.**
- Chlorostoma rugatum*, Gld., **n. subsp.** ; PILSBRY, P. Ac. Philad. 1904, p. 33.
- +*Cirropsis*, **n. gen.** for *C. præpostera*, Barr., Silurian, Bohemia, PERNER (477), Expln. pl. lix.
- Clanculopsis jussieu*, **n. subsp.** ; PALLARY, J. Conchyl. lii, p. 240.

- Clanculus hizenensis*, n. var., with fig. of *C. gemmulifer* v. *pallidus* ; PILSBRY, P. Ac. Philad. 1904, p. 33.
- Collonia rosa*, Japan ; PILSBRY, t. c. p. 31, fig. : **n. sp.**
- †*Cosmina*, **n. gen.** for *C. complacens*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxxv.
- Cyclostrema gyalum*, Persian Gulf ; MELVILL, P. Malac. Soc. London vi, p. 54, fig. : *C. eumares*, p. 158, *eupoietum*, p. 159, Gulf of Oman ; MELVILL, t. c. figg. : **n. spp.**
- †*Cyclotropis*, **n. gen.** for *C. indocilis*, Barr., &c., Silurian, Bohemia ; PERNER (477), Explan. pls. lxi, lxxvii.
- Cynisca fortisulcata*, Port Alfred ; SMITH, J. Malac. xi, p. 38, fig. : **n. sp.**
- Ethalia carneolata*, Melv., n. var. ; MELVILL, t. c. p. 80, fig.
- Ethalia jucunda*, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 159, fig. : *E. africana*, Port Alfred ; SMITH, J. Malac. xi, p. 38, fig. : **n. spp.**
- Euchelus cancellatus*, n. subsp. ; PILSBRY, P. Ac. Philad. 1904, p. 35 : *E. erythraensis*, Sturany, is a synonym of *Clanculus gennesi* ; FISCHER, J. Conchyl. lii, p. 59.
- Euchelus lischkei*, p. 34, *hachijoensis*, p. 35, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
- Gibbula incarnata*, vittata, Pils., figd. ; PILSBRY, t. c. p. 34.
- †*Horiosomella*, **n. gen.** for *H. otiosa*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxxiii.
- Leiopyrga* belongs to *Trochidae*, with note on *L. octona*, Tate ; VERCO (630).
- Liotia polypleura*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 93, fig. : **n. sp.**
- †*Meandrella*, **n. gen.** for *M. sculpta*, Perner, Silurian, Bohemia ; PERNER (477), Explan. pl. lxxxiv.
- †*Michaletia*, **n. gen.** for *M. semigranulata*, **n. sp.**, Cretaceous, France ; COSSMANN, C.R. Ass. Franc. 1903, pt. ii, p. 634.
- Monilea nucleolus*, Pils., figd. ; PILSBRY, P. Ac. Philad. 1904, p. 34.
- †*Nematrochus*, **n. gen.** for *N. concurrens*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxii.
- Neritina virginea*, variation ; METCALF (445).
- Omphalius collingei*, Persian Gulf ; MELVILL, J. Malac. xi, p. 80, fig. : **n. sp.**
- †*Pagodea*, **n. gen.** for *P. concomitans*, Barr. ; PERNER (477), Explan. pl. lxiv.
- Phasianella tristis*, Pils., figd. ; PILSBRY, P. Ac. Philad. 1904, p. 32.
- †*Planitrochus*, **n. gen.** for *P. amicus*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxiv.
- †*Ploconema*, **n. gen.** for *P. protendens*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lix.
- †*Pseudotectus*, **n. gen.** for *P. carinatus*, Perner, &c., Silurian, Bohemia ; PERNER (477), Explan. pls. lxiv, lxv.
- †*Pycnotrochus*, **n. gen.** for *P. viator*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxv.
- †*Rotellomphalus*, **n. gen.** for *R. tardus*, Barr. MS., Silurian, Bohemia ; PERNER (477), Explan. pl. xlii.
- †*Sellinema*, **n. gen.** for *S. dives*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxiii.
- †*Tectospira*, **n. gen.** for *T. chopi*, **n. sp.**, Trias, Germany ; PICARD, Jahrb. geol. Landesanst. Berlin xxii, p. 479.
- †*Temnospira*, **n. subgen.** of *Brochidium*, for *B. percinctum*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lxxix.
- †*Tortilla*, **n. gen.** for *T. disjuncta*, Barr., Silurian, Bohemia ; PERNER (477), Explan. pl. lix.

Trochus, anatomy of British species ; RANGLES (509).

Trochus hirasei, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 32, fig. : **n. sp.**

+*Tubogyra*, **n. gen.** for *T. primula*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pls. lxxxiv, lxxxvi.

+*Tubomphalus*, **n. gen.** for *T. crenistria*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. xlii.

+*Umbospira*, **n. gen.** for *U. nigricans*, Barr. MS., Silurian, Bohemia ; PERNER (477), Expln. pl. xlii.

+*Umbotrochus*, **n. gen.** for *U. aspersus*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lxvi.

+*Umbotropis*, **n. gen.** for *U. albicans*, Barr. MS., Silurian, Bohemia ; PERNER (477), Expln. pl. xlii.

HALIOTIDÆ, BELLEROPHONTIDÆ, and FISSURELLIDÆ.

Some new Silurian genera in the last section may belong here.

+*Donaldia*, **n. gen.** for *D. altera*, Barr., Silurian, Bohemia ; PERNER (477), Expln. pl. lvii.

Haliotis tuberculata, anatomy and phylogeny ; FLEURE (226) : *Haliotis* without perforations ; KELSEY (346) : *H. tuberculata*, imperforate ; MARQUAND, J. Conch. xi, p. 48, also Rep. Guernsey Soc. 1903, p. 233.

Incisura, **n. gen.** for *Scissurella lyttletonensis* (sic), Smith ; HEDLEY, Rec. Austral. Mus. v, p. 91.

+*Lessuerella* (Koken MS.), **n. gen.** for *L. bohémica*, Perner, Silurian, Bohemia ; PERNER (477), Expln. pl. lxxiii.

+*Plectonotus*, **n. gen.** for *P. derbyi*, **n. sp.**, Devonian, Brazil ; CLARKE, Arch. Mus. Rio Janeiro x, p. 70.

+*Ptomatis*, **n. gen.** for group of *Bellerophon patulus*, Hall ; CLARKE, t. c. p. 75.

Puncturella demissa, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 93, fig. : **n. sp.**

Schismope brevis, New Zealand ; HEDLEY, t. c. p. 90, fig. : **n. sp.**

Scissurella jacksoni, Gulf of Oman ; MELVILL, P. Malac. Soc. London vi, p. 160, fig. : *S. rosca*, New Zealand ; HEDLEY, Rec. Austral. Mus. v, p. 90, fig. : **n. spp.**

DOCUGLOSSA.

ACMÆIDÆ, and PATELLIDÆ.

Docoglossa, evolution in ; FLEURE (228).

Acmea octoradiata, Hutton, *alticostata*, Angas, notes on ; HEDLEY (292).

Acmea minutissima, off the Andamans ; SMITH, Ann. Nat. Hist. xiv, p. 4 : **n. sp.**

Lottia gigantea, Gray, anatomy ; FISHER (225).

Nacella crebristriata, South Australia ; VERCO, Tr. R. Soc. S. Austral. xxviii, p. 144, fig. : **n. sp.**

Patella, development ; WILSON (653).

III. SCAPHOPODA.

Cadulus acuminatus, Tate, notes on ; VERCO (630).

+*Clavulites*, **n. gen.**, type *C. howardensis*, **n. sp.**, Carboniferous, Kansas ; GIRTY, P. U. S. Mus. xxvii, p. 732.

Dentalium, development ; WILSON (653) : Anatomy and histology ;

BOISSEVAIN (73): *D. intercalatum*, of which *D. bednalli*, Sharp and Pils., is a synonym, notes on; VERCO (630).
Dentalium vallicolens, California; RAYMOND, *Nautilus* xvii, p. 123:
 n. sp.

IV. PELECYPODA.

Assumption of rounded form in attached bivalves; ANTHONY (21).
 Adductor muscles in Pelecypods; ANTHONY (19).
 Pelecypoda, morphology; VLÈS (634).

SEPTIBRANCHIATA.

Cuspidaria optima, p. 17, *nasuta*, (*Cardiomya*) *gilchristi*, (*C.*) *forticostata*, p. 18, South Africa; SOWERBY (589), figg.: n. spp.
Poromya gilchristi, p. 15, *striata*, *granosissima*, p. 16, *curta*, p. 17, South Africa; SOWERBY (589), figg.: n. spp.

EULAMELLIBRANCHIATA.

Synapticola, n. gen. for *S. perrieri*, n. sp., parasite of *Synapta*, France; MALARD, Bull. Mus. Paris ix, p. 344.

ANATINACEA.

Anatina andamanica, off the Andamans; SMITH, Ann. Nat. Hist. xiv, p. 8: n. sp.
Halistrepta, n. sect. of *Periploma* for *P. sulcata*, n. sp.; DALL, *Nautilus* xvii, p. 123.
Myodora reeveana, Smith, figd. with note; PILSBRY, P. Ac. Philad. 1904, p. 558.
Periploma sulcata, California; DALL, *Nautilus* xvii, p. 122: n. sp.
 †*Pleurophorella*, n. gen., type *P. papillosa*, n. sp., Carboniferous, Texas; GIRTY, P. U. S. Mus. xxvii, p. 728.
Thraciopsis arenosa, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 197, fig.: n. sp.

PHOLADACEA.

Gastrochana mowbrayi, Bermuda; DAVIS, *Nautilus* xvii, p. 128, fig.: n. sp.
 †*Girardotia*, n. gen., type *G. elegans*, n. sp., Ledonian Jura; LORIOI (401), p. 133.
Xylophaga indica, off the Andamans; SMITH, Ann. Nat. Hist. xiv, p. 7: n. sp.

MYACEA and CARDIACEA.

Cardium, sensory organs in the tentacles; ZUGMAYER (670): *C. hungerfordi*, Sby., n. subsp.; PILSBRY, P. Ac. Philad. 1904, pp. 555 & 556: *C. becheri*, Rve., note on; HEDLEY (292).
Cardium annæ, Japan; PILSBRY, P. Ac. Philad. 1904, p. 557, fig.: *C. gilchristi*, South Africa; SOWERBY (589), p. 11, fig.: n. spp.
 †*Ceroniola*, n. gen., type *Cultellus australis*, Gabb, Tertiary, Chili; WILCKENS, N. Jahrb. Min. B.B. xviii, p. 249.

- Cultellus decipiens*, Port Alfred ; SMITH, J. Malac. xi, p. 39 : **n. sp.**
Panopeu bitruncata, Conrad, notes on species and synonymy ; JOHNSON (339).
Tridacna, morphology and anatomy ; ANTHONY (20).

VENERACEA and TELLINACEA.

- Chione nitida*, Q. and G., notes on synonymy ; HEDLEY (292).
Chione despecta, New South Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 193, fig. : *C. micra*, p. 552, *kizenensis*, p. 553, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : **n. spp.**
Codakia bella, n. subsp. ; PILSBRY, t. c. p. 555.
Cytherea crispata, n. subsp. ; PILSBRY, t. c. p. 551.
Gomphina moerchii occurs at New Hebrides ; HEDLEY (294).
Mactra, artificial development of ova ; KOSTANECKI (372) : Artificial parthenogenesis in the egg ; KOSTANECKI (373).
Mactra carneopicta, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 550, fig. : *M. delicatula*, *taprobanensis*, Ceylon ; PRESTON, J. Malac. xi, p. 78, figg. : **n. spp.**
Pitar sulfurea, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 553, fig. : **n. sp.**
Psammobia arakanensis, Arakan Coast ; SMITH, Ann. Nat. Hist. xiv, p. 10 : **n. sp.**
Semele capensis, Port Alfred ; SMITH, J. Malac. xi, p. 39, fig. : **n. sp.**
Spisula (Oxyperas) bernardi, Japan ; PILSBRY, P. Ac. Philad. 1904, p. 550, fig. : **n. sp.**
Tellina laevigata, n. var. ; DAVIS (181).
Tellina hirasei, p. 554, *fabrefacta*, p. 555, Japan ; PILSBRY, P. Ac. Philad. 1904, figg. : *T. kenyoniana*, Victoria ; PRITCHARD & GATLIFF, P. Soc. Victoria xvii, p. 339, fig. : *T. regularis*, Port Alfred ; SMITH, J. Malac. xi, p. 39, fig. : *T. gilchristi*, *analogica*, p. 12, *vidalensis*, (*Macoma*) *levis*, p. 13, (*M.*) *ordinaria*, (*M.*) *africana*, (*M.*) *inclinata*, p. 14, South Africa ; SOWERBY (589), figg. : **n. spp.**
Theora ovalis, Port Alfred ; SMITH, J. Malac. xi, p. 39, fig. : **n. sp.**
Venus mercenaria, nervous regulation of heart ; BUDINGTON (91) : *V. arakana*, Nevill, note on ; PILSBRY, Nautilus xviii, p. 23.
Venus (Anatis) interseulpta, South Africa ; SOWERBY (589), p. 11, fig. : **n. sp.**

SUBMYTILACEA.

- Anodonta bouvieri* (Locard), Charente ; ROCHEBRUNE, Bull. Mus. Paris ix, p. 391 : *A. chivoti*, France ; GERMAIN, Bull. Soc. Ouest France xiv, p. 87 : **n. spp.**
Astarte crenata, n. varr. ; HÄGG, Arkiv Zool. ii, p. 37, figg.
Bartlettia, notes on species and young shell ; ROCHEBRUNE (530).
Cardita pulcherrima, South Africa ; SOWERBY (589), p. 7, fig. : *C. umbonata*, Sierra Leone ; SOWERBY, P. Malac. Soc. London vi, p. 177, fig. : *C. (?) minima*, Port Alfred ; SMITH, J. Malac. xi, p. 41, fig. : **n. spp.**
Carditella laticosta, Port Alfred ; SMITH, J. Malac. xi, p. 41, fig. : **n. sp.**
Crassatella gilchristi, p. 8, *angulata*, *africana*, p. 9, *abrupta*, *tenuis*, p. 10, South Africa ; SOWERBY (589), figg. : **n. spp.**
†*Choniocardia*, **n. subgen.** of *Venericardia*, type *V. oppenheimi*, **n. sp.**, Tertiary, France ; COSSMANN, Bull. Soc. Ouest France xiv, p. 209.
Corbicula doufilei, White Nile ; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 144 : *C. subrostrata*, Java, p. 109, *faba*, New South Wales, p. 110 ; BULLEN, P. Malac. Soc. London vi, figg. : **n. spp.**
Crassatellites ponderosus, Gmelin, note on synonymy ; HEDLEY (292).

Diplodontu tasmanica, Woods, is a synonym of *D. zelandica*, Gray; HEDLEY (292).

Dreissensia polymorpha, habits, &c.; STANDEN (592).

Grandidieria, notes on; ROCHEBRUNE (533).

Harmandia, notes on; ROCHEBRUNE (531).

Harmandia castelneauvi, Cochín-China; ROCHEBRUNE, Bull. Mus. Paris x, p. 140: **n. sp.**

Hyriopsis goliath, Tonkin; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, p. 25, fig.: **n. sp.**

Isocardia cor, L., n. var.; PALLARY (468).

Kellia porculus, Japan; PILSBRY, P. Ac. Philad. 1904, p. 558, fig.: **n. sp.**

Lepton fortidentatus, Port Alfred; SMITH, J. Malac. xi, p. 41, fig.: **n. sp.**

Lucina despecta, valida, Port Alfred; SMITH, t. c. p. 40, figg.: **n. spp.**

Megacrinus unguiculinus (Monts. MS.), Gulf of Gabes; PALLARY, J. Conchyl. lii, p. 247, fig.: **n. sp.**

†*Miocardiella*, **n. subgen.** (? of *Isocardia*), type *M. taurinensis*, **n. sp.**, Tertiary; SACCO (546), p. 161.

Nodularia, notes on, of which *Pharaonia*, *Zairia*, *Reneus*, and *Parreysia* are synonyms; ROCHEBRUNE (533).

Parreysia, Conr., is a synonym of *Nodularia*; ROCHEBRUNE (533).

Pharaonia, Brgt., is a synonym of *Nodularia*; ROCHEBRUNE (533).

Pisidium supinoide, p. 81, *ovale, futtereri, kukuurensis, obliquatum, lateumbonatum*, p. 82, Central Asia; CLESSIN (120): **n. spp.**

Quadrula, notes on embryology; FRIERSON (234).

Reneus, Jouss., is a synonym of *Nodularia*; ROCHEBRUNE (533).

Solecardia vitrea, Q. & G., n. subsp.; PILSBRY, P. Ac. Philad. 1904, p. 558.

Spathella bozasi, brumpti, near Lake Rudolph; ROCHEBRUNE & GERMAIN, Bull. Mus. Paris x, p. 144: **n. spp.**

Tellinys similis, Port Alfred; SMITH, J. Malac. xi, p. 41, fig.: **n. sp.**

Unionide, notes on French species, with n. varr.; GERMAIN (249): Structure of the shell; FRIERSON (233): *U. postumus*, **n. n.** for *U. duponti*, Brgt.; ROCHEBRUNE, Bull. Mus. Paris x, p. 258: *U. ater*, Nilss., n. var.; LINDHOLM, Annuaire Mus. St. Petersb. viii, p. 343: *U. tumidus, pictorum*, notes on; DUDINSZKY (206).

Unio subniger, France; GERMAIN, Bull. Soc. Ouest France xiv, p. 31: *U. yliscerus* (Locard), Charente; ROCHEBRUNE, Bull. Mus. Paris ix, p. 390: *U. (Quadrula) liedtkei*, p. 25, (*Nodularia*) *gracillimus*, p. 26, Tonkin; ROLLE, Nachrbl. Deutsch. malak. Ges. 1904, figg.: **n. spp.**

Verticpronus, **n. gen.** for *V. mytilus*, **n. sp.**, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 88, fig.

Vesicomya indica, Travancore and off the Andamans; SMITH, Ann. Nat. Hist. xiv, p. 9: **n. sp.**

Zairia, Rochbr., is a synonym of *Nodularia*; ROCHEBRUNE (533).

PSEUDOLAMELLIBRANCHIATA.

†*Acanthopecten*, **n. subgen.** of *Aviculopecten*, for *A. carboniferus*, Stevens, Carboniferous, N. America; GIRTY (256), p. 417.

Amussium sibogai, Celebes; DAUTZENBERG & BAVAY, J. Conchyl. lii, p. 207, fig.: **n. sp.**

Aviculopecten, notes on genus and type; GIRTY (257): HIND, Amer. Geol. xxxiv, p. 200: GIRTY, t. c. p. 332.

Chlamys gloriosa, Rve., note on, *hyalina*, Poli, n. var.; PALLARY (468).

Chlamys hirasei, Japan, p. 197, *ambiguus*, China Sea, p. 198, *wilhelminae*, New Caledonia, p. 200, *weberi*, West Africa, p. 202, *jousseaumei*, Japan, p. 203, *cythereus*, Pacific Ocean, p. 204; BAVAY, J. Conchyl.

- lii, figg. : *C. gilchristi*, p. 1, *fultoni*, p. 2, *humilis*, p. 3, South Africa; SOWERBY (589), figg. : **n. spp.**
- +*Cochlearites*, **n. gen.** for *Lithiotis problematica*, of some authors; REIS (518), p. 2.
- +*Cultriopsis*, **n. sect.** of *Gervilleia*, type *G. falciformis*, **n. sp.**, Lias, France; COSSMANN, Bull. Soc. geol. France iii, p. 510.
- Cyclopecten nepeanensis*, Victoria; PRITCHARD & GATLIFF, P. Soc. Victoria xvii, p. 338, fig. : **n. sp.**
- Dacrydium fabale*, New South Wales; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 199, fig. : **n. sp.**
- Lima sydneyensis*, **n. n.** for *L. brunnea*, Hedley non Cooke, with fig. of *L. bassii*, Woods; HEDLEY (292).
- Lima perfecta*, Port Alfred; SMITH, J. Malac. xi, p. 43, fig. : **n. sp.**
- +*Limipecten*, **n. gen.**, type *L. texanus*, **n. sp.**, Carboniferous, Texas; GIRTY, P. U. S. Mus. xxvii, p. 721.
- +*Mantellina*, **n. subgen.** (! of *Lima*), type *M. inoceramoides*, **n. sp.**, Tertiary; SACCO (546), p. 148.
- Margaritifera vulgaris*, anatomy; HERDMAN (301): Parasites; SHIPLEY & HORNELL (558): *M. margaritifera*, L., notes on; SEURAT (554, &c.): *M. albina*, Lam., is correct name for Mediterranean pearl oyster; GIARD (252).
- +*Nothamusium*, **n. gen.** for *N. radiatum*, *transversum*, **n. spp.**, Carboniferous, Brit. Is.; HIND (306), p. 159.
- Ostrea*, distorted form; WINKLEY, Nautilus xviii, p. 24: Pigmentation; SCHIEDT (549).
- Ostrea circumpecta*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 559, fig. : **n. sp.**
- +*Parvochlamys*, **n. subgen.** (! of *Pecten*) for *P. oolevis*, **n. sp.**, Tertiary; SACCO (546), p. 145.
- Pecten*, retinal nerve-endings in eye; HYDE (319): Variation in some American species; DAVENPORT (179): Nervous system; DREW (199): *P. vescoi*, Bavay, is a var. of *P. opercularis*; BAVAY, J. Conchyl. lii, p. 206: *P. tenuicostatus*, anatomy and embryology; DREW (200): *P. varius*, rib variation; DAVENPORT & HUBBARD (180): *P. irradians*, nerve distribution in the eye; HYDE (318).
- Pecten (Chlamys) farreri*, Shantung; JONES & PRESTON, P. Malac. Soc. London vi, p. 149, fig. : *P. frigidus*, Polar Sea; JENSEN, Vid. Medd. 1904, p. 305, fig. : *P. alcocki*, off South India; SMITH, Ann. Nat. Hist. xiv, p. 13 : **n. spp.**
- Philippiella rubra*, Tasmania; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 207, fig. : **n. sp.**
- Philobrya inornata*, New South Wales; HEDLEY, t. c. p. 207, fig. : **n. sp.**

FILIBRANCHIATA.

Anomia, structure of muscles; MARCEAU (416).

Arca, critical notes on Lamarck's species and their synonymy; LAMY (381): *A. pistachia*, Lam., of which *A. radula*, Smith, is a synonym, and *A. lischkei*, Dkr., notes on; HEDLEY (292): *A. pharaonis*, Fischer, is a synonym of *A. ehrenbergi*, Dunker; LAMY, J. Conchyl. li, p. 323: *A. rhombea*, n. var.; LAMY, Bull. Mus. Paris ix, p. 393.

Arca (Scapharca) africana, South Africa; SOWERBY (589), p. 4, fig. : *A. kobeltiana*, Japan; PILSBRY, P. Ac. Philad. 1904, p. 559, fig. : **n. spp.**

Crenella striatissima, South Africa; SOWERBY (589), p. 3, fig. : **n. sp.**

Glycymeris stands for *Pectunculus*; JUKES-BROWNE, J. Conch. xi, p. 101: Notes on name; DAUTZENBERG & DOLLFUS (177).

Hochstetteria velaini, *limoides*, Port Alfred; SMITH, J. Malac. xi, p. 42, figg. : **n. spp.**

Limopsis pumilio, Port Alfred; SMITH, t. c. p. 43, fig.: **n. sp.**

Modiola tenerrima, Port Alfred; SMITH, t. c. p. 42, fig.: *M. sambasensis*, Borneo; DAUTZENBERG, Ann. Soc. malac. Belgique xxxviii, p. 7, fig.: **n. spp.**

Myrina minima, Smith, is a synonym of *Hochstetteria trapezina*, Bernard; HEDLEY, Rec. Austral. Mus. v, p. 89.

Myrina indica, off the Andamans; SMITH, Ann. Nat. Hist. xiv, p. 11: **n. sp.**

Mytilus, development of gill; RICE (525).

Mytilus orbicularis, Mediterranean; PALLARY, Ann. Mus. Marseille viii, No. 1, p. 14, fig.: **n. sp.**

Pectunculus, notes on name; DAUTZENBERG & DOLLFUS (177).

Pleurodon maorianus, New Zealand; HEDLEY, Rec. Austral. Mus. v, p. 87, fig.: **n. sp.**

†*Pseudocucullæa*, **n. gen.**, type *P. lens*, **n. sp.**, Cretaceous, Kameruns; SOLGER, Zeitschr. Deutsch. geol. Ges. lv, Protok. p. 76: Is identical with *Lopatinia*, Schmidt; SCHMIDT, Zeitschr. Deutsch. geol. Ges. lvi, Protok. p. 120.

Savignyarca, Jouss., is unnecessary, and type, *S. savignyarca*, is a form of *Arca obliquata*, Gray; LAMY (382).

†*Tachomya*, **n. subgen.** [of ?], for *T. rathbuni*, **n. sp.**, Devonian, Brazil, &c.; CLARKE, Arch. Mus. Rio Janeiro x, p. 96.

Volsella, Scopoli, should be dropped; JUKES-BROWNE (344).

PROTOBRANCHIATA.

Nucula nucleus, locomotion; VLÈS (635): *N. nucleus*, nervous system; BURNE (93): *N. hedleyi*, **n. n.** for *N. minuta*, Woods non Gould; PRITCHARD & GATLIFF, P. Soc. Victoria xvii, p. 237.

Nucula irregularis, sculpturata, South Africa; SOWERBY (589), p. 7, figg.: **n. spp.**

Nuculana does not replace *Leda*; JUKES-BROWNE, J. Conch. xi, p. 100: *N. belcheri*, Hinds, note with fig.; SOWERBY (589), p. 4.

Nuculana lamellata, p. 5, *gemmulata, compta*, p. 6, South Africa; SOWERBY (589), figg.: **n. spp.**

Portlandia kolthoffi, Jan Mayen; HÄGG, Arkiv Zool. ii, p. 12, fig.: **n. sp.**

Yoldia keppeliana, Hab. incert.; SOWERBY, P. Malac. Soc. London vi, p. 176, fig.: **n. sp.**

V. AMPHINEURA.

APLACOPHORA.

Solenogastres, habits of; HEATH (286).

Limifossor, **n. gen.**, type *L. talpoideus*, **n. sp.**, Alaska; HEATH, Zool. Anz. xxviii, p. 329.

Proneomenia, sp., Hawaiian Is., with anatomy; HEATH (288).

Rhopalomenia, sp., Hawaiian Is., with anatomy; HEATH (288).

POLYPLACOPHORA.

Larval eye of Chitons; HEATH (285).

Chitonidae, egg-integument; SCHWEIKART (551): Monograph completed; CLESSIN in MARTINI & CHEMNITZ (426): Egg-covering and its append-

ages; SCHWEIKART (550): *C. assimilis*, p. 118, *setiger*, p. 119, n. varr.; CLESSIN in MARTINI & CHEMNITZ (426).

Chiton ceylanicus, off Ceylon; SMITH, Ann. Nat. Hist. xiv, p. 7: *C. hindsi-anus*, Hab. ?, p. 107, *maculatus*, Hab. ?, p. 112, *sowerbyanus*, Colombia, p. 117, *glaber*, Chile, p. 118, *angustus*, Central America, p. 120; CLESSIN in MARTINI & CHEMNITZ (426), figg. : **n. spp.**

Onithochiton marmoratus, New Zealand; WISSELL, Zool. Jahrb. Syst. xx, p. 660, fig. : **n. sp.**

VIII. BRACHIOPODA.

BY

E. R. SYKES, B.A.

ASSISTED BY

E. A. SMITH, I.S.O.

CONTENTS.

| | Page |
|---------------------------|------|
| I. TITLES | 1 |
| II. BIOLOGY. | |
| Anatomy | 4 |
| Distribution. | |
| Geographical | 5 |
| Geological | 5 |
| III. SYSTEMATIC | 7 |

I. TITLES.

1. AMI, H. M. Bibliography of Canadian Geology and Palæontology for the year 1902. Tr. R. Soc. Canada ix, sect. iv, pp. 173-188.
2. BEEDE, J. W. & ROGERS, A. F. Coal Measures faunal studies, iii. Lower Coal Measures. Kansas Univ. Sci. Bull. ii, pp. 459-473.
3. BÖHM, J. Über die obertriadische Fauna der Bäreninsel. Svenska Ak. Handl. xxxvii, No. 3, 76 pp., 7 pls.
4. BROILI, F. Die Fauna der Pachycardientuffe der Seiser Alp. Palæontogr. l, pp. 145-227, pls. xvii-xxvii.
5. BUCKMAN, S. S. Some Ludlowian Brachiopods; and a question about Silurian time. P. Geol. Ass. xviii, pp. 454-458.
6. —. Jurassic Brachiopoda. Ann. Nat. Hist. xiv, pp. 389-397.

7. CHAPMAN, F. On some Brachiopods and a Bivalve from Heathcote. *Rec. Geol. Surv. Victoria* i, pp. 222-226, pl. xxi.
8. —. On a collection of Upper Palæozoic and Mesozoic Fossils from West Australia and Queensland, in the National Museum, Melbourne. *P. Soc. Victoria* xvi, pp. 306-335, pls. xxvii-xxx.
9. CHOFFAT, P. Découverte du *Terebratula renierii* Cat. en Portugal. *Comm. geol. Portugal* v, pp. 115-117, figg.
10. CLARKE, J. M. A Fauna Siluriana Superior do Rio Trombetas, Estado do Pará, Brazil. *Arch. Mus. Rio Janeiro* x, pp. 1-48, 2 pls. [1899].
11. —. Molluscos Devonianos do Estado de Pará, Brazil. *T. c.* pp. 49-174, 6 pls. [1899].
12. COULON, L. Les Brachiopodes du Musée d'Histoire Naturelle d'Elbeuf, et la faune Brachiopodique fossile de la Seine-inférieure. *Bull. Soc. Elbeuf* xxii, pp. 107-145.
13. DELGADO, J. F. N. Faune Cambrienne du Haut-Alemtejo (Portugal). *Comm. geol. Portugal* v, pp. 307-374, pls.
14. DESTINEZ, P. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. *Ann. Soc. geol. Belgique* xxxi, *Mem.* pp. 143-151.
15. —. Faune et flore des psammites du Condroz (Famennien). *T. c.* *Mem.* pp. 247-257.
16. DIENER, C. Permian Fossils of the Central Himalayas. *Mem. geol. Surv. India*, ser. 15, vol. i, pt. v, 204 pp., 9 pls.
17. DOUVILLÉ, H. Note sur l'Infralias de la Vendée et des Deux-Sèvres. III. *Terebratula punctata* Sow. var. *lata*. *Bull. Soc. geol. France* iii, pp. 537 & 538.
18. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). *Palæontogr.* l, pp. 229-288, pls. xxviii-xxxiii.
19. DUN, W. S. Notes on some new species of Palæozoic Brachiopoda from New South Wales. *Rec. Geol. Survey N. S. Wales* vii, pp. 318-325, pls. lx & lxi.
20. FOX-STRANGWAYS, C. The Geology of the Oolite and Cretaceous Rocks South of Scarborough. *Mem. geol. Surv. U. K.* 1904, 119 pp.
21. Girty, G. H. The Carboniferous formations and faunas of Colorado. *Rep. U. S. Geol. Surv.* xvi, 546 pp., 10 pls.
22. —. New Molluscan Genera from the Carboniferous. *P. U. S. Mus.* xxvii, pp. 721-736, pls. xlv-xlvii.
23. GREGER, D. K. The distribution and synonymy of *Ptychospira sexplicata* (White and Whitfield). *Amer. Geol.* xxxiii, pp. 15-17.
24. —. On the genus *Rhynchopora* King, with notice of a new species. *T. c.* pp. 297-301, figg.
25. GURICH, G. Angeblicher Find von *Spirifer mosquensis* bei Krakau. *Zeitschr. Deutsch. geol. Ges.* lvi, Mt. p. 16.
26. —. Das Devon von Debnik bei Krakau. *Beitr. Pal. Oesterr.-Ung.* xv, pp. 127-164, pls. xiv & xv, figg.

27. HÄGG, R. Mollusca und Brachiopoda gesammelt von der Schwedischen zoologischen Polarexpedition nach Spitzbergen, dem nordöstlichen Grönland und Jan Mayen im J. 1900. Arkiv Zool. ii, pp. 31-66, pl. i.
 28. HAYDEN, H. H. Note on *Spirifer curzoni* Diener. Mem. geol. Surv. India, ser. 15, vol. i, pt. 5, 4 pp.
 29. HEDLEY, C. Studies on Australian Mollusca. Part VIII. P. Linn. Soc. N. S. Wales xxix, pp. 182-211, pls. viii-x.
 30. IHERING, H. VON. Les Brachiopodes tertiaires de Patagonie. An. Mus. Buenos Aires ii, pp. 321-349, pl. iii.
 31. ISEKLE, J. Zpráva o novém nalezišti fauny v břidlici pásma D-d₁γ u Rokycan [Über einen neuen Fundort der Fauna im Schiefer der Etage D-d₁γ bei Rokycan]. SB. Bohmisch. Ges. 1903, No. xxix, 7 pp.
 32. JAHN, J. J. Über die Brachiopodenfauna der Bande d₁. Verh. geol. Reichsanst. 1904, pp. 269-280.
 33. JUKES-BROWNE, A. J. The Cretaceous Rocks of Britain. Vol. III. The Upper Chalk of England. Mem. geol. Surv. U. K. 1904, 566 pp. [Cf. p. 483.]
 34. KEEP, J. West American Shells... San Francisco, 1904, 8vo, 360 pp., figg.
 35. KITTL, E. Geologie der Umgebung von Sarajevo. Jahrb. geol. Reichsanst. liii, pp. 515-738, pls. xxi-xxiii, figg.
 36. LANGENHAM, R. Versteinerungen der deutschen Trias (des Bundsandsteins, Muschelkalks, und Keupers)..... Liegnitz, 1903, 22 pp., 17 pls.
 37. LIMANOWSKI, M. W sprawie *Spirifer mosquensis* i *supramosquensis* (?) sprostowanie. Kosmos polski. xxix, pp. 101 & 102.
 38. PALAEONTOLOGIA UNIVERSALIS. Fasc. ii & iii (pls. xiv-lxxv). 1904.
 39. PARKINSON, H. Über eine neue Culmfauna von Königsberg unweit Giessen, und ihre Bedeutung für die Gliederung des rheinischen Culm. Zeitschr. Deutsch. geol. Ges. lv, pp. 331-374, pls. xv & xvi.
 40. PHILIPP, H. Paläontologisch-geologische Untersuchungen aus dem Gebiet von Predazzo. Zeitschr. Deutsch. geol. Ges. lvi, pp. 1-98, pls. i-vi, figg.
 41. RAYMOND, P. E. The Developmental Changes in some common Devonian Brachiopods. Amer. J. Sci. xvii, pp. 279-300, pls. xii-xviii.
 - 41A. —. The *Tropidoleptus* Fauna at Canandaigua Lake, New York, with the Ontogeny of twenty species. Part I.—On the developmental changes of some of the common Devonian Brachiopods. Part II.—A study of a Hamilton Faunule from Canandaigua Lake. Ann. Carnegie Mus. iii, pp. 79-177, 8 pls., figg.
 42. REBOUL, P. Catalogue des types paléontologiques contenus dans les collections de Grenoble. Trav. Lab. geol. Grenoble vii, pp. 127-149.
 43. REED, F. R. C. Brachiopoda from the Bokkeveld Beds. Ann. S. African Mus. iv, pp. 165-200, pls. xx-xxiii.
 44. RICHARDSON, L. A Handbook to the Geology of Cheltenham and neighbourhood. Cheltenham, 8vo, 1904, 303 pp., figg., map.
- ROGERS, A. F. [See BEEDE & ROGERS (2).]

45. ROWE, A. W. The Zones of the White Chalk of the English Coast. Part IV.—Yorkshire. P. Geol. Ass. xviii, pp. 193–296, pls.
46. ROWLEY, R. R. The Echinodermata of the Missouri Silurian, and a new Brachiopod. Amer. Geol. xxxiv, pp. 269–282, pl. xvi.
47. RZEHAŁ, A. *Rhynchonella polymorpha* Mass. im Karpathischen Eocän Mährens. Verh. geol. Reichsanst. 1904, pp. 182–184.
48. SCHELLWIEN, E. Palaeozoische und triadische Fossilien aus Ostasien. In 'Durch Asien' by K. Fütterer, iii, pp. 125–174, 5 pls. [1903].
49. SCHEPOTIEFF, A. Ueber abnorme Berippung der dorsalen Schalen von *Crania anomala* O. F. M. Centrbl. Mineral. 1904, pp. 12 & 13, fig.
50. SIEMIRADZKI, J. Geologia ziem Polskich. 1. Formacye Starsze du Jurajskief Wlacznie, 1903, 8vo, 472 pp.
51. —. Fauna Kopalna warstw Oxfordzkich i Kimeridzkich w okregu Krakowskim i Przyleglych Czesciach Krolestwa Polskiego. [Fossil fauna of the Oxfordian and Kimeridgian beds in the neighbourhood of Cracow and the adjacent parts of the kingdom of Poland.] Pam. Ak. Krakow. xviii, 92 + 50 pp., 5 pls. [1891, 1892].
52. SIMIONESCU, J. Studii Geologice si Paleontologice din Carpatii Sudici. II. Fauna neocomiana din basenul dimboviciorei. Publ. Adamachi Ac. Romana ii, pp. 101–167, 8 pls. [1898].
53. —. Studii Geologice si Paleontologice din Carpatii Sudici. III. Fauna Calloviana din Valea Lupului (Rucar). Op. cit. iii, 42 pp., 3 pls. [1899].
54. —. Descrierea Cător-Va Fosile Tertiare din Nordul Moldovie. Op. cit. vi, 25 pp., 2 pls. [1901].
55. SOBOLEW, D. Zur Stratigraphie des oberen Mitteldevons im polnischen Mittelgebirge. Zeitschr. Deutsch. geol. Ges. lvi, Mt. pp. 63–72.
56. TSCHERNYSCHIEW, T. The Upper Palaeozoic formations of Eurasia. Rec. Geol. Surv. India xxxi, pp. 111–141. [From Mem. Com. geol. St. Petersb. xvi.]
57. VAUGHAN, A. Notes on the Corals and Brachiopods obtained from the Avon section and preserved in the Stoddart collection. P. Bristol Soc. x, pp. 90–134, 2 pls.
58. WAAGEN, L. Brachiopoden aus den Pachycardientuffen der Seiser Alpe. Jahrb. geol. Reichsanst. liii, pp. 443–452, figg.
59. YABE, H. The Upper Carboniferous Marine Sediments in the Environs of Vladivostock. J. geol. Soc. Tokyo xi, pp. 184–187.
60. —. Devonian fossils from Honan, China. T. c. pp. 435–445.

II. BIOLOGY.

A. ANATOMY, &c.

Morphology :—Development changes in some Devonian species ; RAYMOND (40, 41A).

Bibliography :—Canadian Palaeontology for 1902 ; AMI (1).

Museums :—List of species in Elbeuf Museum ; COULON (12).—List of fossil types in Grenoble collection ; REBOUL (42).

B. DISTRIBUTION.

GEOGRAPHICAL.

Greenland :—Three species quoted ; HÄGG (27).

Portugal :—Fauna of North Portugal ; NOBRE, Ann. Sci. nat. Porto viii, p. 87.

West America :—Popular account of fauna, with systematic list ; KEEP (34).

South America :—Fauna ; IHERING (30).

New South Wales :—*Terebratulina radula*, n. sp. ; HEDLEY (29).

GEOLOGICAL.

Types of several species figured with notes ; PALAEONTOLOGIA UNIVERSALIS (38).—Distribution and synonymy of *Ptychospira sexplicata* ; GREGER (23).—Note on *Spirifer mosquensis* ; LIMANOWSKI (37).—Lists of fossils from Belfast ; LAMPLUGH, &c., Geology.....Belfast. Mem. geol. Surv. Ireland.—Few fossils from Calabria ; STEFANO, Mem. Carta geol. Ital. ix, App.—Occurrence of *Terebratula renierii* in Secondary of Portugal ; CHOFFAT (9).—List of fossils from French Pyrenees ; ROUSSEL, Bull. Carte geol. France xv, p. 23.—Lists of fossils from various formations of Lot, Aveyron, Tarn, and Tarn-et-Garonne ; THEVENIN, op. cit. xiv, p. 353.—Fauna of 'Seine-inférieure' ; COULON (12).—Primary and Secondary Fauna near Sarajevo, with n. spp. ; KITTL (35).—Secondary fossils from near Rokycan ; ISERLE (31).—Lists of Primary fossils from Spiti ; HAYDEN, Mem. geol. Surv. India xxxvi, pt. 1.—Few Mesozoic fossils from Victoria ; ETHERIDGE, Rec. geol. Surv. Victoria i, p. 10.

Tertiary :—

Europe :—Few Miocene shells from Haguineau ; COUFFON, Bull. Soc. Angers xxxiii, p. 54.—Two Miocene species from Rennes ; DOLLFUS, C.R. Ass. Franc. 1903, pt. ii, p. 659.—Fossils from North Moldavia ; SIMIONESCU (54).—*Rhynchonella polymorpha* in Moravia ; RZEHAK (47).

America :—Eocene Brachiopods of Maryland ; CLARK & MARTIN, Maryland geol. Surv., Eocene, p. 203.—*Disciniscia lugubris* in Miocene of Maryland ; MARTIN, op. cit., Miocene, p. 402.—Few fossils from Patagonia ; TOURNOUER, Bull. Soc. geol. France iii, p. 463.—Fauna of Patagonia, with n. spp. ; IHERING (30).

Australasia :—Fauna of Victoria, S. Australia, and Tasmania ; DENNANT & KITSON, Rec. geol. Surv. Victoria i, p. 89.—Four species from the Barwon Valley, Victoria ; HALL & PRITCHARD, P. Soc. Victoria xvi, p. 304.

Cretaceous :—

British Isles :—Lists of English fauna ; JUKES-BROWNE (33).—Few species from Upper Gault of Barnwell ; FEARNSIDES, Quart. J. Geol. Soc. lx, p. 360.—Lists of fossils from Yorkshire Coast ; ROWE (45).—Few species from North Lincolnshire ; BURNET, Geol. Mag. i, p. 172.—Few fossils from near Croydon ; HINDE, t. c. p. 482.—Fossils from near Merstham and Croydon ; HOLMES, P. Croydon Club 1904, p. 45.—Fossils from Scarborough ; FOX-STRANGWAYS (20).

Europe :—Some Spanish forms mentioned ; MALLADA, Mem. Com. geol. Espana v.—Few Lower Cretaceous fossils from Western Swiss Jura ; BAUMBERGER, Abh. Schweiz. pal. Ges. x.—Neocomian Fauna from the South Carpathians, with n. sp. of *Waldheimia* ; SIMIONESCU (52).—*Terebratula* in Senonian near Königslutter ; WOLLEMAN, Jahresber. Ver. Braunschweig xiii, p. 42.—Few Cenomanian fossils from near Saint-Jouin ;

NIBELLE, Bull. Soc. Rouen xxxix, p. 177.—Few fossils from the Iser region ; ZAHÁLKA, SB. Bohmisch. Ges. 1903, No. xxxii.

Jurassic :—Notes on nomenclature of some Jurassic species, with new names ; BUCKMAN (6).

British Isles :—Oolite fossils near Scarborough ; FOX-STRANGWAYS (20).—Oolite fossils from Cheltenham ; RICHARDSON (44).—Lower Oolite forms near Bristol ; TUTCHER, P. Bristol Soc. x, p. 150.

Europe :—Fossils from East Greenland ; MADSEN, Medd. Gronland xxix, p. 173.—Few species from zone of *Lioceras concavum* of Mont d'Or ; RICHE, Ann. Univ. Lyon i, fasc. 14.—Upper Jura fossils from Bassano ; CAMPANA, Boll. Soc. geol. Ital. xxiii, p. 239.—Oxfordian and Kimeridgian fossils from Poland, with n. spp. ; SIEMIRADZKI (51).—Jurassic fossils from Poland ; SIEMIRADZKI (50).—Callovian fauna of Lupului (Rucar), South Carpathians, with n. spp. ; SIMIONESCU (53).

Lias :—

British Isles :—Fossils from Cheltenham ; RICHARDSON (44).—Fossils near Keynsham ; VAUGHAN & TUTCHER, P. Bristol Soc. x, p. 3.

Europe :—Occurrence of *Terebratula punctata* in La Vendée ; DOUVILLÉ (17).

Trias :—

British Isles :—Lists of Rhaetic fossils from near Bristol ; SHORT, Quart. J. Geol. Soc. lx, p. 170.

Europe :—Fauna of the *Pachycardium*-strata of the Seiser Alp ; BROILI (4).—Brachiopods, with n. spp., from 'Pachycardientuffen' of the Seiser Alp ; WAAGEN (58).—Notes on German fossils ; LANGENHAM (36).—Lists of fossils from near Predazzo, with n. spp. ; PHILIPP (40).

Asia :—Fossils from Eastern Asia ; SCHELLWIEN (48).—Fauna of the Bären Is., with n. spp. ; BÖHM (3).

Palæozoic :—

Europe :—Few species from near Komorau ; JAHN, Verh. geol. Reichsanst. 1904, p. 209 : also JAHN (32).

Asia :—The Fauna of Asia ; TSCHERNYSCHEW (56).—Fossils from Eastern Asia ; SCHELLWIEN (48).

Australasia :—New species of Brachiopods from New South Wales ; DUN (19).

Permian :

Asia :—Fauna of the Himalayas, with n. spp. ; DIENER (16).—Note on *Spirifer curzoni*, near Muth ; HAYDEN (28).

Carboniferous :—

British Isles :—Fossils from Lancashire Coal Measures ; BOLTON, Tr. Manchester Geol. Soc. xxviii, pp. 378, 578, 668.—Few species from Ayrshire ; SMITH, Geol. Mag. i, p. 283.—Lower Culm fossils of North Devon ; HIND, t. c. p. 392.—Some Lower Culm fossils from North Devon ; VAUGHAN, t. c. p. 530 : also HIND, t. c. p. 584.—Fossils from near Bristol, with *Seminula ficoidea*, n. sp. ; VAUGHAN (57).

Europe :—A Culm fauna near Giessen ; PARKINSON (39).—Fossils from the Oural ; KONIOUSCHEVSKY, Mem. Com. geol. St. Petersb. xxii, p. 417.—Fossils from near Budua, S. Dalmatia ; RENZ, Zeitschr. Deutsch. geol. Ges. lv, Mt. p. 16.—Few fossils from Galicia ; RENIER, Ann. Soc. geol. Belgique xxxi, Bull. p. 73.—Fossils from Condroz ; DESTINEZ (14).—List of fossils from South Germany ; PARKINSON, Geol. Mag. i, p. 272.

America :—Fossils from Kansas ; BEEDE & ROGERS (2).—Notes on *Rhynchopora*, with n. sp. from Missouri ; GREGER (24).—Fossils from

Arizona ; GIRTY in RANSOME, Pap. U. S. Geol. Surv. xxi, p. 46.—Fauna of Colorado ; GIRTY (21).

Asia :—Upper Carboniferous fossils from near Vladivostock ; YABE (59).

Australasia :—Carbo-Permian fossils from Western Australia ; CHAPMAN (8).

Devonian :—

Europe :—List of fossils from near Remscheid ; SPRIESTERSBACH, Centrbl. Mineral. 1904, p. 599.—Fauna from near Dierdorf ; DREVERMANN (18).—List of fossils from district of Tomsk ; PEETZ, Trav. geol. St. Petersb. vi, Livr. 1.—Middle Devonian forms from Poland ; SOBOLEW (55).—Fauna from near Krakau, with n. spp. ; GURICH (26).—Few fossils from Celechovic ; SMYCKA, Vestnik. Klub. Prostejove vii, p. 61.—*Spirifer mosquensis* from Krakau ; GURICH (25).—Famennian fossils from Condroz ; DESTINEZ (14).—Fossils from Moravia ; SPITZNER, Vestnik. Klub. Prostejove v, p. 88.

Asia :—Fossils from Honan, China ; YABE (60).

Africa :—Brachiopods from the Bokkeveld Beds, S. Africa ; REED (43).

America :—On fossils from Brazil ; CLARKE (11).—List of fossils from Arizona ; RANSOME, Pap. U. S. Geol. Surv. xxi, p. 37.—On some Hamilton fossils from New York State ; RAYMOND (41A).

Silurian :—

British Isles :—Brachiopods of the Ludlow Series ; BUCKMAN (5).

America :—New species from Brazil, with *Anabaia*, n. subgen. ; CLARKE (10).—Ordovician and Silurian fossils from Indiana ; FOERSTE, Amer. J. Sci. xviii, p. 321.—*Skenidium* (?) *nodocostatum*, n. sp., Missouri ; ROWLEY (46).—Ordovician fossils from Pennsylvania ; COLLIE, Bull. Geol. Soc. Amer. xiv, p. 407.—Lists of fossils from junction beds of Ordovician and Silurian in Indiana ; FOERSTE, Amer. J. Sci. xviii, p. 321.

Cambrian :—

Europe :—Fauna of Haut-Alemtejo (Portugal), with n. spp. ; DELGADO (13).

Australasia :—New species of Brachiopods from Victoria ; CHAPMAN (7).

III. SYSTEMATIC.

Developmental changes in some Devonian species ; RAYMOND (41, 41A).

+*Anabaia*, n. subgen. of *Anoplothea*, type *A. paraia*, n. sp., Silurian, Brazil ; CLARKE, Arch. Mus. Rio Janeiro x, p. 24.

Crania anomala, abnormal sculpture ; SCHEPOTIEFF (49).

+*Schuchertella*, n. gen., type *Streptorhynchus lens*, White ; GIRTY, P. U. S. Mus. xxvii, p. 734.

Terebratulina radula, N. S. Wales ; HEDLEY, P. Linn. Soc. N. S. Wales xxix, p. 209, fig. : n. sp.



IX. BRYOZOA.

BY

ALICE L. EMBLETON, B.Sc., F.L.S.

CONTENTS.

| | Page |
|---------------------------|------|
| I. TITLES | 2 |
| II. SUBJECT INDEX | |
| (a) General Biology . . . | 8 |
| (b) Geographical . . . | 9 |
| III. SYSTEMATIC INDEX | |
| 1. Entoprocta | 11 |
| 2. Ectoprocta | |
| Gymnolæma | |
| Cyclostoma . . . | 11 |
| Cheilostoma . . . | 13 |
| Ctenostoma . . . | 16 |
| Phylactolæma . . . | 17 |

INTRODUCTION.

Bryozoa literature this year is distinguished by a monograph by CALVET (11) in which he gives descriptions of many species; in another paper (10) he gives diagnoses of numerous sub-antarctic forms from the Atlantic, several of which are new to science. MICHAELSEN (82) discusses the affinities of *Bryozoa*, and NEVIANI (84) continues his bibliography of living and fossil forms. He has also written on a collection from the Mediterranean. WATERS (116) reports on the species from Franz-Josef Land collected in 1896 & 1897 by the Jackson Harmsworth Expedition, DAVENPORT (22) on the fresh-water forms of the United States, and GARRARD (40) writes on English fresh-water representatives.

STIASNY (106) has worked on the excretory apparatus of the *Entoprocta*.

Fossil *Bryozoa* have this year been the subject of five papers by CANU. In one (13) he deals with Egyptian forms; another he devotes to describing *Pustulopora semiclausa* (14); in a third and important memoir he writes

on Tertiary *Bryozoa* from the region South of Tunis (15); his fourth work is also on Tertiary representatives, but in this case from Patagonia, with many new species (16). His last paper is a small contribution on general points in the study of fossil *Bryozoa*.

MAPLESTONE (76, 77) again adds much valuable information to the subject of fossil forms. This year he has published a tabulated list of fossil Cheilostomatous Polyzoa from the Victorian Tertiary deposits. He also describes a collection from Lord Howe Island. ULRICH & BASSLER (108) have made a revision of Paleozoic *Bryozoa* of the genera and species of *Ctenostomata* and of *Trepustomata*, of which many are new. In another paper these authors deal with Miocene forms (109).

JUKES-BROWNE (55) gives lists of species found in the upper chalk of England, and CUMINGS (21) writes on the development of some Paleozoic *Bryozoa*.

I. TITLES.*

1. ALLEN, E. J., TODD, R. A., PACE, S. & others. Marine Biological Association. Plymouth marine invertebrate fauna, being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. J. Mar. Biol. Ass. vii, 2, pp. 155-298, 1 chart. [*Bryozoa*, pp. 259-267.]
2. [ANON.] *Polyzoa* as food of fishes. Pennsylvania State Department of Agriculture; Monthly Bull. ii, 8, 1904, p. 243.
3. —. Classification. Natural. Canad. xxxi, pp. 210-218. [*Bryozoa*, p. 212, 2 figg.]
4. —. An expanded polypide of *Alcyonella stagnorum*. Rep. Hastings Nat. Hist. Soc. xi, pl. opp. p. 51.
BASSLER, R. S. [See ULRICH & BASSLER (107-109).]
5. BEEDE, J. W. & ROGERS, A. J. Coal measure faunal studies, iii. Lower Coal measures. Kansas Univ. Bull. ii, 15, pp. 459-473. [Lists of spp. found.]
6. BOGOJAWLENSKI, N. W. Zur Frage über die Vermehrung von *Zoobotryon pellucidus* Ehrbg. Mt. Ges. Nat. Moskau xvi. Review by ADELUNG, Zool. Zentrbl. xi, pp. 250 & 251.
7. BOLTON, H. The palæontology of the Lancashire coal measures. Tr. Manchester Geol. Soc. xxviii. I. pp. 378-420. II. pp. 578-650. III. pp. 668-689.
8. BONARELLI, G. Appunti sulla costituzione geologica dell' isola di Creta. Atti Acc. Lincei (5) iii, pp. 518-548, 1 pl., 4 figg. [*Bryozoa*, pp. 536 & 537 by NEVIANI.]
9. *BOVERI, T. Ergebnisse über die Konstitution der chromatischen Substanz des Zellkerns. Jena, 1904, 130 pp., 75 figg.
Review by FICK, Zool. Zentrbl. xi, pp. 97-99.
10. CALVET, L. Diagnoses de quelques espèces de Bryozoaires nouvelles ou incomplètement décrites de la région sub-Antarctique de l'océan Atlantique. Bull. Soc. zool. France xxix, 3, pp. 50-59.

* An asterisk prefixed to a Title indicates that the Recorder has not seen the Journal or Work referred to.

11. [CALVET, L.] Bryozoen. Ergebn. Hamburg. Maghalaen. Reise 1904, 45 pp., 3 pls.
12. —. La distribution géographique des Bryozoaires marins et la théorie de la bipolarité. C.R. Ac. Sci. cxxxviii, pp. 384–387.
13. CANU, F. Bryozoaires fossiles d'Égypte. Bull. Inst. Egypt iv, 4, pp. 223–229, pls. i & ii.
14. —. *Bryozoa*. Pal. Univ. 1904. *Pustulopora semiclausula*, 6 figg. with diagnosis.
15. —. Étude des Bryozoaires tertiaires recueillis en 1885 et 1886 par M. Ph. Thomas dans la région sud de la Tunisie. Explor. Sci. Tunis 1904, 37 pp., pls. xxxii–xxxv.
16. —. Les Bryozoaires du Patagonien échelle des Bryozoaires pour les terrains tertiaires. Mem. Soc. geol. France, Pal. xii (3), pp. 1–30, 8 pls.
17. CHIRICA, C. Notes sur les Bryozoaires de Roumanie. Ann. Univ. Jassy iii, pp. 4–14.
18. CLARKE, J. M. Limestones of Central and Western New York interbedded with bituminous shales of the Marcellus stage, with notes on the nature and origin of their faunas. Rep. N. York Mus. lv, pp. 115–138.
List of fossils, p. 133.
19. CLAUS & GROBBEN. Lehrbuch der Zoologie, begründet von C. Claus, neu bearbeitet von Karl Grobben. Marburg, 1904, 480 pp., 507 figg.
Review by SCHUBERG, Zool. Zentrbl. xi, pp. 233–238.
20. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35–85.
Cyclostomata, p. 44, *Cheilostomata*, p. 48, list of 36 spp.
21. CUMINGS, E. R. Development of some Paleozoic *Bryozoa*. Amer. J. Sci. xvii, pp. 49–78, 83 figg.
22. DAVENPORT, C. B. Report on the fresh-water *Bryozoa* of the United States. P. U. S. Mus. xxvii, pp. 211–221, pl. vi.
23. DENNANT, J. Catalogue of the described species of fossils (except *Bryozoa* and *Foraminifera*) in the Cainozoic fauna of Victoria, South Australia and Tasmania. Rec. Geol. Surv. Victoria i, 2, pp. 89–147.
Refers to *Bryozoa*.
24. —. Report on fossiliferous ironstone conglomerate from Cape Patton. Op. cit. 1, p. 36.
List of spp.
25. DESTINEZ, P. Deuxième note sur les fossiles du calcaire noir (v 1 a) de Petit-Modave. Ann. Soc. geol. Belgique xxvi, pp. lix & lx, 1899.
26. —. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. Op. cit. xxxi, 1, pp. 143–151.
List of spp. found.
27. —. Fossiles viséens de Seille et de Comblain-au-Pont. Op. cit. xxvi, 1899, pp. cix–cxiii.
28. —. Faune et flore des psammites du Condroz (Famennien). Op. cit. xxxi, 3, pp. 247–257. [*Bryozoa*, p. 257.]
29. —. Quelques fossiles de Pair (Clavier). Op. cit. xxiv, 1897–99, pp. xxxviii & xxxix.

30. [DESTINEZ, P.] Troisième note sur les fossiles du marbre noir de Pair. Op. cit. xxv, pp. xxxiv-xxxvi.
31. —. Quatrième note sur les fossiles du calcaire noir de Pair. Op. cit. xxvi, pp. lviii & lix.
32. DEWALQUE, G. Les fossiles du Bolderberg et les fossiles boldériens. Ann. Soc. geol. Belgique xxv, 1899, pp. 117-122.
33. DIENER, C. Himalayan Fossils. I. 5. Permian fossils of the Central Himalayas. Pal. Ind. xv, 204 pp., pls. i-x. [*Bryozoa*, p. 199.]
34. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). Palæontogr. I, 6, pp. 229-282.
35. ENTZ, G. Az édesvizek élete. Termes. Kozl. Magyar Tars. 1904, pp. 616-636, 9 text-figg.
36. ETHERIDGE, R. Determinations of palæozoic and mesozoic fossils. Rec. Geol. Surv. Victoria i, 1, pp. 10-12.
37. FOERSTE, A. F. Silurian and Devonian Limestones of Tennessee and Kentucky. Bull. Geol. Soc. Amer. xi, pp. 395-445, 8 figg.
38. —. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4) xviii, pp. 321-342, 1 pl.
39. FOX-STRANGWAYS, C. The geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales 54 & 55, pp. 1-112, xi pls., 12 text-figg.
Lists of spp. found.
40. GARRARD, G. E. Freshwater *Polyzoa*. J. Northampt. Soc. xii, 97, pp. 158-164.
41. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Belgique i, 81 pp.
42. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. Tr. Lab. Arcachon vii, 1903, pp. 87-161.
43. Girty, G. H. The Carboniferous formations and faunas of Colorado. Prof. Papers U. S. Geol. Surv. No. 16, 1903, 546 pp.
44. GRABAU, A. W. Paleozoic Coral reefs. Bull. Geol. Soc. Amer. xiv, pp. 337-352, pls. xlvii & xlviii.
Bryozoan reefs, p. 348.
45. GRÄNTZ, —. Pflanzengeographisches und Floristisches von Chemnitz. Ber. Ges. Chemnitz xv, p. 1. (See Abhandlungen.) [*Alcyonella fungosa*.]
GROBBEN. [See CLAUS & GROBBEN (19).]
46. HALL, T. S. Remarks on the deposits. Appendix to Maplestone's tabulated list [182-218]. P. Soc. Victoria xvii, i, pp. 218 & 219.
47. HAYDEN, H. H. Memoirs of the Geological survey of India. Mem. Geol. Surv. India xxxvi, i, pp. 1-129.
48. HICKSON, S. J. [President's address to the Zoological Section.] Rep. Brit. Ass. 1903. [Manchester mains choked by fresh-water *Polyzoa* sp.]
49. HIND, W. On the homotaxial equivalents of the Lower Culm of North Devonshire. Geol. Mag. i, 8, pp. 397-403.
50. HINDE, G. J. On the zones of Marsupites in the chalk at Beddington, near Croydon, Surrey. Geol. Mag. i, 10, pp. 482-487.
Lists of spp.

51. HOLMES, W. MURTON. List of fossils collected. [Surrey.] P. Croydon Club 1903 & 1904, pp. 45 & 46.
52. HOLM, G. Palæontologiska notiser. Sveriges geol. Unders. Afh. No. 179, 104 pp., 14 pls.
53. HUDLESTON, W. H. On the origin of the marine (halolimnic) fauna of Lake Tanganyika. Geol. Mag. i, 7, pp. 337-382, 2 pls.
54. HURRELL, H. E. *Polyzoa*. Tr. Norfolk Soc. vii, 5, p. 755.
55. JUKES-BROWNE, A. J. The Cretaceous rocks of Britain. The upper chalk of England. Mem. geol. Surv. U. K. iii, 1904, 566 pp.
Important list of Bryozoan spp. pp. 484-493.
56. KARASKASCH, N. I. Note sur la faune contenue dans les galets de Bolschезemelskaïa toundra. Protok. St. Peterb. Obsheh. xxxv, 1904, 3, pp. 130-146. [French résumé, p. 162.]
57. KISHINOUE, K. Notes on the natural history of Corals. J. Imp. Fisheries Bureau Tokyo xiv, i, 32 pp., pls. i-ix. [Refers to *Bryozoa*.]
58. KITSON, A. E. Report on the Bryozoan limestone at Flinders. Rec. Geol. Surv. Victoria i, 1, pp. 44-51.
List of spp. found.
59. KITTL, E. Geologie der Umgebung von Sarajevo. Jahrb. geol. Reichsanst. Wien liii, pp. 515-748, 3 pls., 47 figg.
60. KNIPOWITSCH, N. Explorations zoologiques sur le bateau casse-glace "Ermak" en été de 1901. Ann. Mus. Zool. Acad. St. Petersb. vi, pp. i-xx, 1 pl.
61. KOFORD, C. A. Biological survey of the waters of Southern California at San Diego. Science xix, pp. 505-508.
62. LAMPLUGH, S. W., KILROE, J. R., M'HENRY, A., SEYMOUR, H. J., WRIGHT, W. B. & MUFF, H. B. The geology of the county of Belfast. Mem. geol. Surv. Ireland 1904, 166 pp.
63. LANG, W. D. The Jurassic forms of the "genera" *Stomatopora* and *Proboscina*. Geol. Mag. i, 7, pp. 315-322, 11 figg.
64. LAUTERBORN, R. Beiträge zur Fauna und Flora des Oberrheins und seiner Umgebung. Mt. Pollichia Jahrb. lx, No. 19, pp. 42-130.
65. LHOMME. Coquilles fossiles trouvées en 1903 dans les sables de Saint-Gobain (Yprésien). Feuille Natural. (4) xxxiv, pp. 103-106.
List of spp. collected.
66. LINDER, C. Étude de la faune pélagique du Lac de Bret. Rev. Suisse Zool. xii, pp. 144-158, pl. iv.
67. LINDINGER, L. Verzeichnis der in und um Erlangen beobachteten Mollusken. Anhang: Ein neue Fundort von *Cristatella mucedo* Cuv. Abh. Ges. Nurnberg xv, pp. 65-84.
68. LOHMANN, H. Eier und sogenannte Cysten der Plankton-Expedition. Anhang: *Cyphonautes*. Ergebn. Plankton-Exped. iv, pp. 1-61, pls. i-vii.
69. LOMAS, J. On *Polyzoa* as rock-cementing organisms. Rep. Brit. Ass. 1903, pp. 663 & 664.
70. LONGCHAMPS, M. DE SELYS. Développement postembryonnaire et affinités des *Phoronis*. Mem. Ac. Belgique i, 1904, 150 pp., 7 pls.
Affinities with *Bryozoa*, pp. 129 & 130.

71. LOPPENS, K. Sur une variété de *Membranipora membranacea* L. et sur quelques animaux marins vivant dans l'eau saumâtre. Ann. Soc. Zool. Belgique xxxviii, Bull. pp. cxlii & cxliii.
72. —. Bryozoaires et Cnidozoaires nouveaux pour la faune Belge trouvés par la plupart pendant l'année 1903. Bull. Soc. zool. Belg. xxxix, pp. xlv–xlvi.
73. LUTHER, A. Planktologiska och hydrofaunistiska studier i Lojo sjö under sommaren 1901. Medd. Soc. Faun. Fenn. xxviii, A, pp. 52–55.
74. MAEHRENTHAL, F. C. v. Entwurf von Regeln der zoologischen nomenclatur. Als Grundlage für eine Neubearbeitung der internationalen Regeln der internationalen nomenclatur. Zool. Ann. i, 2, pp. 89–138.
75. MALAISE, C. Découverte d'une porphyroïde fossilifère, à Grand-Manil. Ann. Soc. geol. Belgique xxix, pp. B145–B148, 1 fig.
76. MAPLESTONE, C. M. Tabulated list of the fossil Cheilostomatous *Polyzoa* in the Victorian Tertiary deposits. P. Soc. Victoria xvii, 1, pp. 182–218.
77. —. Lord Howe Island *Polyzoa*. P. R. Soc. Victoria xvii, pp. 386–390, pl. xviii & xix.
78. MARCHAL, P. Recherches sur la biologie et le développement des Hyménoptères parasites. I. La polyembryonie spécifique ou germinogonie. Arch. Zool. exp. xxxii, No. 3, 1904, pp. 257–335, pls. ix–xiii. Relations of germinogony to ontogeny of *Bryozoa*, pp. 322–324.
79. MATZDORFF, C. Jahresbericht über die Bryozoen für 1899–1902. Arch. Naturg. 1897, ii, 3, published in 1904, pp. 97–146.
80. MEISENHEIMER, J. Review of ROMER & SCHAUDINN'S Fauna Arctica i, 1. Einleitung, Plan des Werkes und Reisebericht. Jena, 1900, pp. 1–84, 2 pls. Zool. Zentrbl. xi, pp. 179–183.
81. MEYER, E. [Affinities of *Bryozoa*.] Zool. Jahrb. Anat. xxi, 2, 1904, pp. 21–34.
82. MICHAELSEN, W. Revision der composition Styeliden oder Polyzoinen. Mt. Mus. Hamburg xxi, pp. 1–124, 2 pls. Affinities of *Bryozoa* discussed.
83. MUNTHER, H. Stratigrafiska studier öfver Gotlands Silurlager. Sveriges geol. Unders. Afh. No. 192, 55 pp.
84. NEVIANI, A. Materiali per una Bibliografia italiana degli studi sui Briozoi viventi e fossili dal 1800 al 1900. [Continuazione.] Boll. Naturalista xxiv, pp. 1, 4, 5, 6, 7, 10.
85. —. *Schizotheca serratimargo* Hincks sp. (rettificazione di nomenclatura). Boll. Soc. geol. Ital. xxiii, pp. 270–276, pl. x.
86. —. Appunti sui Briozoi del Mediterraneo. II. Boll. Soc. zool. Ital. xiii, pp. 1–3.
87. —. Novità Bibliografiche. Op. cit. xii, 1904, pp. 1 & 2.
88. NOBRE, A. Subsídios para o estudo da fauna marinha do norte de Portugal. Ann. Sci. nat. Porto viii, pp. 37–94. [*Bryozoa*, pp. 78–86.]
89. —. Subsídios para o estudo da fauna marinha do sul de Portugal. T. c. pp. 153–160. [*Bryozoa*, p. 159, 18 spp.]
90. OSTROUMOFF, A. Comptes-rendus des dragages et du plancton de l'expédition du "Selianik." Bull. Ac. St. Petersb. (5) v, 1896, pp. 33–92.

91. PARKINSON, J. H. The zoning of the culm in South Germany. Geol. Mag. (5), i, pp. 272-276.
92. POLÉNOFF, B. Description géologique de partie nord-ouest de la 15-me feuille du viii zone et de la partie sud-ouest de la 15-me feuille du vii zone de la carte générale du gouvernement Tomsk. Trav. geol. St. Petersb. iii, pp. 133-339.
93. PROCHÁZKA, V. J. Das ostböhmisches Miocaen. Arch. nat. Böhmen x, 2, 173 pp., 72 figg.
94. RANGE, P. Das Diluvialgebiet von Lübeck und seine Dryastone nebst einer vergleichenden Besprechung der Glazialpflanzen führenden Ablagerungen überhaupt. Zeitschr. Naturw. lxxvi, pp. 161-273, 1 pl. [*Bryozoa*, p. 238.]
95. RANSOME, F. L. The geology and ore deposits of the Bisbee Quadrangle, Arizona. Prof. Papers U. S. Geol. Surv. 21, 1904, 112 pp. Lists of spp. pp. 36-38.
96. RETZIUS, G. Zur Kenntniss der Spermien der Evertebraten. Biol. Untersuch. xi, pp. 1-32, pls. i-xiii.
97. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon, fasc. xiv, 252 pp., viii pls. [*Bryozoa*, p. 207, note of occurrence.]
ROGERS, A. J. [See BEEDE & ROGERS (5).]
98. ROSENFELD, G. Studien über das Fett der Meeresorganismen. Wiss. Meeresuntersuch. v, 2, pp. 57-85.
99. ROUSSEL, M. Tableau stratigraphique des Pyrénées. Bull. Carte geol. France xv, No. 97, pp. 1-116, 3 pls., 66 figg.
100. ROUSSELET, C. F. On a new fresh-water Polyzoon from Rhodesia, *Lophopodella thomasi* gen. et sp. nov. J. Quekett Club (2) ix, pp. 45-56, 1 pl.
101. RUEDEMANN, R. Paleontologic Papers. II. Trenton conglomerate of Rysedorph Hill Rensselaer Co. N. Y. and its fauna. Rep. N. York Mus. lv, pp. 3-114. [*Bryozoa*, pp. 12-14.]
102. SCHEPOTIEFF, A. Zur organisation von *Rhabdopleura*. Bergens Mus. Aarbog 1904, No. 2, 21 pp., 3 pls. [Faunistic.]
103. SCHULTZ, E. Aus dem Gebiete der Regeneration. III. Ueber Regenerationserscheinungen bei *Phoronis mülleri* Sel. Long. Zeitschr. wiss. Zool. lxxv, pp. 391-420. IV. Ueber Regenerationserscheinungen bei *Actinotrocha branchiata* Müller, pp. 473-494, pl. xxxiii. [Contains references to *Bryozoa*.]
104. SMYČKA, F. Novější nálezy v čelechovském devonu. Vestník. Klub. Prostejove 1905, vii, pp. 53-72. [*Bryozoa*, p. 61.]
105. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoo-géographique indépendante. Zapiski Kiev. Obshch. xviii, pp. i-xiii; 1-487; 1-216, xiv pls. [In Russian.]
106. STIASNY, G. Beitrag zur Kenntniss des exkretionsapparates der *Entoprocta*. Arb. Inst. Wien xv, 2, pp. 183-197, 1 pl.
107. ULRICH, E. O. & BASSLER, R. S. A revision of the Paleozoic *Bryozoa*. Smithson. Collect. xlv, pp. 256-294, pls. xlv-xlvi.
108. — & —. On genera and species of *Trepotomata*, op. cit. xlvii, pp. 15-55, pls. vi-xiv. On genera and species of *Ctenostomata*, t. c. pp. 256-294.

109. [ULRICH, E. O. & BASSLER, R. S.] *Bryozoa*. Miocene. Maryland geol. Surv. 1904, pp. 404-429, pls.
110. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, 2, pp. 1-359, 3 pls.
111. VAN BENEDEN, E. On demande de nouvelles recherches sur l'organisation et le développement d'un *Phoronis*, en vue d'élucider les rapports existant entre les animaux de ce genre, les genres *Rhabdopleura* et *Cephalodiscus*, et le groupe des Enteropneustes. Bull. Ac. Belgique 1903, pp. 1216-1232.
112. VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeit. Ges. Erd. Berlin 1904, pp. 362-370, 11 figg.
113. VERRILL, A. E. The Bermuda Islands. Tr. Connect. Ac. xi (2), pp. 413-913.
114. —. Additions to the fauna of the Bermudas from the Yale Expedition of 1901, with notes on other species. Op. cit. (1), pp. 15-62, pls. i-xi. [*Bryozoa*, p. 54, list of spp. only.]
115. —. Additions to the *Tunicata* and *Molluscoidea* of the Bermudas. Tr. Connect. Ac. x (2), pp. 588-594, 4 figg.
116. WATERS, A. W. *Bryozoa* from Franz-Josef Land, collected by the Jackson-Harmsworth Expedition, 1896-1897. II. *Cyclostomata*, *Ctenostomata*, and *Endoprocta*. J. Linn. Soc. London xxix, pp. 161-185, pls. xix-xxi.
117. —. *Bryozoa*. Exp. Antaretique Belge, 4to, 1904, 100 pp., 9 pls. [See Zool. Rec. 1903, XL (96).]
118. WEIGELT, C. L'assainissement et le repeuplement des rivières. Mem. Cour. Ac. Belgique lxiv. [*Bryozoa*, p. 516, fig. 83.]
119. *WESENBERG-LUND, C. Studier over de Danske Soers Plankton. Specielle Del. [English résumé.] 223 pp., Copenhagen, 1904. [Review by ZSCHOKKE, Zool. Zentrbl. xi, pp. 680-687.]
120. WOLLEMAN, A. Ein Aufschluss im Mukronatensenon bei Rotenkamp, nordwestlich von Königsutter. XIII. Jahresber. Ver. Braunschweig, pp. 40-42.
121. WOLTERSTORFF, W. Beiträge zur Fauna der Tucheler Heide. Bericht über eine Zoologische Bereisung der Kreise Tuchel und Schwetz im Jahre 1900. Schr. Ges. Danzig xi, 1 & 2, pp. 140-234, 1 pl., 1904.
122. WOOD, ELVIRA. Marcellus (Stafford) limestones of Lancaster, Erie Co., N.Y. Rep. N. York Mus. lv, pp. 139-181. [*Bryozoa*, p. 156. List of spp. found.]

II. SUBJECT INDEX.

(a) GENERAL BIOLOGY.

BRYOZOA collectively or of more than one division.

Text book of zoology, CLAUS & GROBBEN (19).

Classification, NEVIANI (84).

Affinities of *Bryozoa* discussed, MICHAELSEN (82).

Affinities of *Bryozoa*, MEYER (81), LONGCHAMPS (70).

Affinities with *Phoronis*, SCHULTZ (103).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (42).

Constitution of chromatin in the nucleus, BOVERI (9).

Bryozoa as food fishes, [ANON] (2).

Rock-cementing organisms, LOMAS (69).

Plancton collections by the "Selianik," OSTROUMOFF (90).

Faunal studies, WOLTERSTORFF (121).

+Paleozoic Bryozoan reefs, GRABAU (44).

ENTOPROCTA.

Excretory organs, STIASNY (106).

CYCLOSTOMA.

+Jurassic forms of *Stomatopora* and *Proboscina*, LANG (63).

Budding in *Lichenopora*, MARCHAL (78).

+Development of some paleozoic forms, CUMINGS (21).

CHEILOSTOMA.

Anatomy of new forms from the subantarctic region of the Atlantic, CALVET (10).

+Anatomy of some fossil forms, COUFFON (20).

Anatomy of *Membranipora membranacea*, LOPPENS (71).

Rock-cementing forms, LOMAS (69).

On the constitution of the chromatic substance in the nucleus, BOVERI (9).

+Collections of species from Lower Coal Measures, Kansas, BEEDE & ROGERS (5).

Affinities, MICHAELSEN (82).

CTENOSTOMA.

Anatomy of some fresh-water species, DAVENPORT (22).

Anatomy of numerous species, WATERS (116).

+Anatomy of Paleozoic forms, ULRICH & BASSLER (107).

Male reproductive organs, RETZIUS (96).

PHYLACTOLÆMA.

Anatomy of fresh-water forms, DAVENPORT (22).

Anatomy of *Cristatella*, HURRELL (54).

Anatomy and biology of *Lophopus crystallinus*, GARRARD (40).

Budding in *Lophopus* and *Cristatella*, MARCHAL (78).

United States, fresh-water forms, DAVENPORT (22).

(b) GEOGRAPHICAL.

GENERAL.

Bryozoa, distribution and the bipolarity theory, CALVET (12).

Finland, plankton collections, LUTHER (73).

+Surrey, collections, HOLMES (51).

Upper Rhine, collections, LAUTERBORN (64).
Roumania, CHIRICA, Ann. Univ. Jassy iii, pp. 4-14.
Portugal, north, and south marine fauna, NOBRE (88, 89).
Mediterranean, collections, NEVIANI (86).
†Crete, collections, BONARELLI (8).
†India, lists of spp. collected, HAYDEN (47).
South California, collections, KOFORD (61).
Bermudas, n. spp., VERRILL (113, 114, 115).

ENTOPROCTA.

Antarctic regions, collections, WATERS (117).
Sub-Antarctic regions, Atlantic Ocean, CALVET (10), n. spp.
Belgium, Collections, GILSON (41).
United States, fresh-water forms, DAVENPORT (22).
Bermudas, n. sp., VERRILL (113, 114, 115).

ECTOPROCTA.

CYCLOSTOMA.

Antarctic regions, n. spp., WATERS (117).
†England, Upper Chalk, Cretaceous forms, JUKES-BROWNE (55).
†Belfast, collections, LAMPLUGH etc. (62).
†Denmark, collections, USSING (110).
†Tunis, Tertiary forms, CANU (15).
†Egypt, fossil spp. described, CANU (13).
Franz-Josef Land, collections, WATERS (116).
†New York, Trenton conglomerate, fauna, RUEDEMANN (101).
†Maryland, Miocene, n. spp., ULRICH & BASSLER (109).
†Colorado, Carboniferous collections, GIRTY (43).
†American Paleozoic forms, including new genera and species, ULRICH & BASSLER (107).
†Patagonia, tertiaries, n. spp., CANU (16).
Lord Howe Island, n. spp., MAPLESTONE (77).

CHEILOSTOMA.

Antarctic regions, n. spp., WATERS (117).
Sub-Antarctic regions, Atlantic Ocean, n. spp., CALVET (10).
North Sea, n. spp., LOHMANN (68).
†Tomsk, collections, POLÉNOFF (92).
†England, upper chalk, Cretaceous forms, JUKES-BROWNE (55).
Belgium, collections, LOPPENS (72).
†Bohemia, Miocene forms, PROCHÁZKA (93).
†Sarajevo, collections, KITTL (59).
†Tunis, Tertiary forms, CANU (13).
†Egypt, fossil spp. described, CANU (13).
†Tennessee and Kentucky, forms from the Silurian and Devonian Limestones, FOERSTE (37).
†Southern Indiana, collections, FOERSTE (38).
†Maryland, Miocene, ULRICH & BASSLER (109).
†Patagonia, tertiaries, n. spp., CANU (16).
Lord Howe Island, n. spp., MAPLESTONE (77).
†Victorian Tertiaries, remarks on deposits, MAPLESTONE (76).

CTENOSTOMA.

†American Paleozoic forms, including many new species, ULRICH & BASSLER (107).

United States, freshwater forms, DAVENPORT (22).

Franz-Josef Land, collections, WATERS (116).

III. SYSTEMATIC INDEX.

1. ENTOPROCTA.

- Barentsia variabilis*, p. 40, pl. iii, fig. 1, *B. capitata*, p. 41, fig. 2, CALVET, Ergebn. Hamburg. Magalhaen. Reise 1904; *B. discreta*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 99, pl. vii, fig. 6, pl. viii, fig. 17. *B. timida*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 594, pl. lxx, fig. 4, **n. sp.**; *B. variabilis*, *B. capitata*, sub-antarctic region, Atlantic Ocean, CALVET, Bull. Soc. zool. France xxix, 3, pp. 58 & 59 : **n. spp.**
- Loxosoma crassicauda*, excretory organs, STIASNY, Arb. Inst. Wien xv, 2, pp. 183–197, 1 pl.
- Pedicellina echinata*, excretory organs, STIASNY, t. c. pp. 183–197, 1 pl.; *P. belgica*, Belgium, GILSON, Mem. Mus. Belgique i, p. 34.
- Urnatella gracilis*, Philadelphia, DAVENPORT, P. U. S. Mus. xxvii, p. 214, pl. vi, fig. 1.

2. ECTOPROCTA.

GYMNOLÆMA.

CYCLOSTOMA.

- †*Amalgamata*, I, **new division** for *Monticuliporidae*, *Heterotrypidæ*, *Constellariidae*, *Batostomellidae*; *Integrata*, II, **new division** for *Amplexoporidae*, *Calloporidae*, *Trematoporidae*; ULRICH & BASSLER, Smithson. Collect. xlvii, pp. 15–55.
- †*Amplexopora columbiana*, p. 41, pl. xiii, figg. 1–4, *A. ampla*, p. 42, pl. xiii, figg. 7 & 8, pl. xiv, fig. 3, *A. cylindracea*, p. 43, pl. xiii, figg. 5 & 6, pl. xiv, figg. 4 & 5, American Paleozoic, ULRICH & BASSLER, t. c., **n. spp.**
- †*Anaphragma* **n. gen.** for *A. mirabile* **n. sp.**, American Paleozoic, ULRICH & BASSLER, t. c. p. 49, pl. xiii, figg. 9–11.
- †*Apsendesia patagonica*, Patagonia, Tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 21, pl. v, fig. 58, **n. sp.**
- †*Atactopora angularis*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 32, pl. viii, figg. 10–12, **n. sp.**
- †*Calloporina* **n. gen.** for *C. parva* **n. sp.**, American Paleozoic, ULRICH & BASSLER, t. c. p. 48, pl. xiv, figg. 13–16.
- †*Cellopora mamillata*, *C. globularis*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 18, pl. iv, figg. 48 & 49.
- †*Ceriopora phlyctænodes*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 30, pl. xxxv, figg. 48–50.
- †*Constellaria teres* **n. sp.** *C. florida* **n. var. emaciata**, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 37.
- Crisia howensis*, *C. cuneata*, Lord Howe Island, MAPLESTONE, P. R. Soc. Victoria xvii, pp. 389 & 390, pl. xxix, figg. 10–12, **n. spp.**
- †*Crisina striatopora*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 406, pl. cxvii, figg. 1–4, **n. sp.**

- +*Cyphotrypa acervulosa*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 30, pl. viii, figg. 1-3.
- +*C. n. gen.* for *C. frankfortensis*, p. 30, pl. viii, figg. 7-9, *C. wilming-tonensis*, p. 31, figg. 4-6, American Paleozoic, ULRICH & BASSLER, t. c., **n. spp.**
- +*Cyrtopora clavata n. sp.*, p. 21, pl. v, figg. 64 & 65, *C. watersi n. n.* for *Tubulipora campicheana* Waters, p. 21, pl. v, fig. 61, CANU, Mem. Soc. geol. France, Pal. xii (3).
- +*Dekajella foliacea*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 28, pl. vii, figg. 10-12, **n. sp.**
- +*Diastopora suborbicularis*, Patagonia, tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 19, pl. v, p. 57; *D. obelia* var. *arctica n. n.* *D. intricaria*, Franz-Josef Land, WATERS, J. Linn. Soc. London xxix, pp. 171, pl. xxi, fig. 1, pp. 173, pl. xix, figg. 1-13; +*D. suborbicularis*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 29, pl. xxxv, fig. 44.
- Entalophora proboscidea*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 91, pl. ix, fig. 4.
- +*Fenestella*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, figg. 44-62; +*F. spp.* Colorado, GIRTY, Prof. Papers U. S. Geol. Survey xvi, 1903, pp. 339 & 340; +*F. Belfast*, LAMPLUGH, etc., Mem. Geol. Surv. Ireland 1904.
- +*Heteropora clavata*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 29, pl. xxxv, figg. 45-47; +*H. dollfusi*, *H. pachundakii*, p. 224, figg. 2 & 3, CANU, Bull. Inst. Egypt iv, 1.
- +*Heterotrypa parvulipora*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, pl. 26, pl. xi, figg. 4-6, **n. sp.**
- +*Homotrypella nodosa*, American Paleozoic, ULRICH & BASSLER, t. c. p. 21, pl. vii, figg. 1-3, **n. sp.**
- Hornera lichenoides*, Franz-Josef Land, characters, WATERS, J. Linn. Soc. London xxix, p. 168, figg. 1-6.
- Idmonea atlantica*, p. 166, pl. xxi, figg. 2 & 3, *I. tumida*, p. 168, fig. 45, WATERS, t. c.
- +*I? expansa*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 404, pl. cix, figg. 6, 7, 8; *I. atlantica*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 90, pl. ix, fig. 5 : **n. spp.**
- Lichenopora fimbriata*, Antarctic, WATERS, t. c. p. 96, pl. viii, fig. 20; *L.*, budding, MARCHAL, Arch. Zool. exp. xxxii, pp. 321 & 322; +*L. hispida?* Patagonia, Tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 20, pl. v, fig. 60.
- +*Lioclema monroei*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 39, pl. xi, figg. 10-12, **n. sp.**
- +*Mesenteripora*, USSING, Danmarks geol. Unders. ii, 2, p. 98, fig. 31.
- +*Mesotrypa echinata*, p. 22, pl. vii, figg. 4-6, *M. angularis*, p. 23, figg. 7-9, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, **n. spp.**
- +*Monticulipora cleavelandi*, Ohio, Paleozoic, ULRICH & BASSLER, t. c. p. 16, pl. vi, figg. 4-6.
- +*M. epidermata*, American Paleozoic, ULRICH & BASSLER, t. c. p. 17, **n. sp.**
- +*Orbignyella n. gen.* for *O. sublamellosa n. sp.*, Tennessee, Paleozoic, ULRICH & BASSLER, t. c. p. 19, pl. vi, figg. 7-9.
- +*Petigopora offula*, American Paleozoic, ULRICH & BASSLER, t. c. p. 32, **n. sp.**
- +*Phalangella*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, pp. 52-55, figg. 16-30.
- +*Polypora*, Paleozoic, development, CUMINGS, t. c. figg. 71-77.
- +*P. n. sp.* (unnamed), Colorado, GIRTY, Prof. Papers U. S. Geol. Survey xvi, 1903, p. 338.

- +*Prasopora patera*, American Paleozoic, ULRICH & BASSLER, Smithson. Collect. xlvii, p. 20, pl. vi, figg. 11-14, **n. sp.**
- +*Prismopora triangulata*, Colorado, GIRTY, Prof. Papers U. S. Geol. Survey xvi, 1903, p. 340, pl. 1, fig. 5.
- +*Proboscina laevigata*, *P. microstoma*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 19, pl. v, figg. 55 & 56, **n. spp.**
- +*Reticulipora patagonica*, Patagonia, Tertiary, CANU, t. c. p. 20, pl. v, figg. 62, 63, 66.
- +*Rhombotrypa* **n. gen.**, characters and composition, American Paleozoic ULRICH & BASSLER, Smithson. Collect. xlvii, p. 44. [No spp. named.]
- +*Stigmatella* **n. gen.** for *S. crenulata*, p. 34, pl. ix, figg. 1-4, pl. xiv, figg. 1 & 2, *S. spinosa*, p. 34, pl. ix, figg. 5-8, *S. personata*, p. 35, pl. xii, figg. 1-3, *S. interporosa*, p. 35, pl. xii, figg. 4 & 5, *S. nana*, p. 36, pl. x, figg. 7-10, pl. xiv, figg. 11 & 12, *S. nicklesi*, p. 36, pl. x, fig. 1-3, pl. xiv, figg. 9 & 10, American Paleozoic, ULRICH & BASSLER, t. c., **n. spp.**
- Stomatopora major*, *S. eburnea*, *S. ? incrassata*, p. 88, pl. viii, fig. 16, pl. ix, figg. 7 & 8, Antarctic regions, WATERS, Exp. Antarct. Belge 1904; +*S.*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, figg. 81-83; +*S.*, Jurassic forms of "genus," LANG, Geol. Mag. i, 7, pp. 315-322, 11 figg.; +*S. inflata*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 12, pl. i, figg. 2 & 3.
- +*Theonoe glomerata*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 406, pl. cix, fig. 4, **n. sp.**
- +*Tubulipora anhaltina*? Patagonia, Tertiary, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 19, pl. v, fig. 59.
- +*Unitrypa*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, figg. 63-70.

CHEILOSTOMA.

- +*Cheilostomata*; tabulated list of fossil Victorian Tertiary forms; 466 spp.; comparison of fossil and recent forms, MAPLESTONE, P. Soc. Victoria xvii, i, pp. 182-218.
- +*Adéona fourtauli*, Egypt, CANU, Bull. Inst. Egypt iv, p. 226, pl. 1, figg. 1-5.
- Adeonellopsis umbilicata*, Maryland, ULRICH & BASSLER, Maryland geol. Survey 1904, p. 417, pl. cxiii, figg. 4 & 5, pl. cxiv, fig. 5.
- +*Amphiblestrum constrictum*, p. 413, pl. cxv, figg. 6 & 7; *A. agellus*, p. 414, pl. cxii, fig. 7, Maryland, ULRICH & BASSLER, t. c., **n. spp.**
- +*Aspidostoma hexagonalis*, *A. porifera* **n. spp.**, *A. ortmanni* **n. n.** for *A. giganteum* Örtmann, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 13, pl. iii, figg. 28-33.
- +*Aulopocella* **n. n.** for *Solenopora*; *A. tubulifera* (sole species), MAPLESTONE, Victorian Natural. xx, 8, p. 99.
- Beania magellanica*, p. 28, pl. viii, fig. 7, *B. hydesia*, p. 30, pl. i, fig. 7, Antarctic, WATERS, Exp. Antarct. Belge 1904.
- Bicellaria grandis*, Antarctic, WATERS, t. c. p. 26, pl. i, fig. 6, **n. sp.**
- Bifaxaria denticulata*, *B. rustica*, pp. 59 & 60, pl. viii, figg. 14-19, Antarctic, WATERS, t. c.
- +*Bimicroporella* **n. gen.** for *B. ventricosa* **n. sp.**, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 12, pl. ii, fig. 26.
- Brettia longa*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 26, pl. i, fig. 2^b, **n. sp.**
- Bugula bicornis*, *B. reticulata*, **n. var. spinosa**, pp. 21 & 22, figg. 2 & 3, WATERS, t. c.; *B. (or Acamarchis) neritina*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 593, fig. 6.
- Cellaria dennanti*, p. 36, pl. ii, fig. 9, pl. viii, fig. 4, *C. dubia*, p. 37, pl. ii, fig. 12, *C. malvinensis*, p. 37, pl. ii, fig. 10, pl. viii, fig. 5, Antarctic,

- WATERS, Exp. Antarct. Belge 1904; +*C. contigua*, *C. angustiloba*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 9, pl. ii, figg. 17, 19 & 20.
- +*C. subsetigera*, Patagonia, CANU, t. c. p. 9, pl. ii, figg. 16-18, **n. sp.**
- +*Cellarina patagonica*, Patagonia, CANU, t. c. p. 8, pl. i, figg. 12-14, **n. sp.**
- +*Cellepora plana*, Egypt, CANU, Bull. Inst. Egypt iv, p. 228, pl. ii, figg. 9; +*C. castrocarensis*, *C. retusa*, Tunis, CANU, Explor. Sci. Tunis 1904, pp. 23 & 27, pls. xxxiv & xxxv, figg. 30, 39-42.
- +*C. massalis*, *C. cribrosa*, pp. 428 & 429, pl. cxvii, figg. 3-6, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- Chaperia spinosissima*, CALVET, Ergebn. Hamburg. Magalhaen. Reise 1904, p. 12, pl. i, fig. 2.
- C. spinosissima*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 51, **n. sp.**
- +*Cribricella* **n. gen.** for *C. crassicolis* **n. sp.**, Tunis, CANU, Explor. Sci. Tunis 1904, p. 20, pl. xxxiv, fig. 24.
- +*Cribrilina radiata*, Tunis, CANU, t. c. p. 19, pl. xxxiv, fig. 23.
- +*Cupularia denticulata*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 414, pl. cxii, fig. 6.
- +*C. bioculata*, *C. punctata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 10, pl. ii, figg. 21-23, **n. spp.**
- Cyphonautes compressus*, North Sea, LOHMANN, Ergebn. Plankton Exped. iv, p. 54, pl. vii, fig. 21.
- C. sargassi*, *C. equatorialis*, *C. gibbus*, *C. oblongus*, *C. parvus*, North Sea, LOHMANN, t. c. pp. 53-57, pl. vii, figg. 22-26, **n. spp.**
- +*Ditaxia lerichei*, *D. orbiculata*, Egypt, CANU, Bull. Inst. Egypt iv, p. 225, figg. 4 & 5.
- +*Electra sinuosa*, Patagonia, CANU, Mem. Soc. geol. France xii (3), p. 5, pl. i, figg. 1 & 2, **n. sp.**
- +*Eschara* sp., USSING, Danmarks geol. Unders. ii, 2, p. 98, fig. 30.
- Flustra renilla*, CALVET, Ergebn. Hamburg. Magalhaen. Reise 1904, p. 10, pl. i, fig. 3.
- +*Hiantopora patagonica*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 18, pl. iv, figg. 49 & 50, **n. sp.**
- +*Hippoporina hypsostoma*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 22, pl. xxxiv, figg. 28 & 29, +*H. varians*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 14, pl. iii, fig. 38.
- +*H. radicifera*, Patagonia, CANU, t. c. p. 14, pl. iii, figg. 34-37, **n. sp.**
- Hippothoa divaricata*, *H. distans*, pp. 53 & 54, pl. vii, fig. 3, pl. iii, fig. 8, Antarctic, WATERS, Exp. Antarct. Belge 1904.
- Lepralia galeata*, Antarctic, WATERS, t. c. p. 48, pl. viii, fig. 11.
- L. gemelliporoides*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. France xxix (3), p. 55; +*L. maculata*, p. 423, pl. cxv, figg. 8 & 9, pl. cxviii, fig. 7, *L. montifera*, p. 424, pl. cxvi, fig. 5, *L. marylandica*, p. 425, pl. cxvii, fig. 2, *L. reversa*, p. 226, pl. cxiii, figg. 1 & 2, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- +*Lunulites parvula*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 8, pl. i, figg. 10 & 11, **n. sp.**
- +*Mastigophora hyndmanni*, Tunis, CANU, Explor. Sci. Tunis 1904, p. 26, pl. xxxv, fig. 36.
- Membranipora membranacea*, characters, LOPPENS, Ann. Soc. zool. Belgique xxxviii, Bull. pp. cxlii & cxliii; *M. membranacea*, natural history in Roumania, CHIRICA, pp. 13 & 14, Ann. Univ. Jassy iii; *M. incrustans*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 31, pl. ii, fig. 15; *M. longispina*, CALVET, Ergebn. Hamburg. Magalhaen. p. 14, pl. i, fig. 1; +*M. artini*, Egypt, CANU, Bull. Inst. Egypt iv, p. 228, pl. ii, figg. 6 & 7; +*M. elliptica*, p. 13, pl. xxxiii, fig. 1, *M. lacroixii*, p. 14, fig. 2, *M. eocena*, p. 15, fig. 5-11, *M. laxa*, p. 17, pl. xxxiv, fig. 18, Tunis, CANU, Explor.

- Sci. Tunis 1904; +*M. concatenata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 6, pl. i, figg. 5, 6, 7.
- +*M. oblongula*, p. 407, pl. cx, figg. 2-5, *M. fossulifera*, p. 408, fig. 1, *M. caminosa*, p. 409, pl. cxi, figg. 3 & 4, *M. germana*, p. 410, figg. 8 & 9, *M. parvula*, figg. 1 & 2, *M. bifoliata*, p. 411, pl. cxii, figg. 2-4, *M. nitidula*, p. 412, fig. 1, *M. fistula*, p. 413, fig. 5, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904; +*M. varians*, p. 14, pl. xxxiii, fig. 3, *M. excavata*, p. 15, fig. 4, *M. quadrata*, p. 16, fig. 12, *M. Hicki*, p. 16, figg. 13-15, *M. bioculata*, p. 17, pl. xxxiv, figg. 16 & 17, *M. rotundicella*, p. 18, fig. 19, Tunis, CANU, Explor. Sci. Tunis 1904; +*M. laevigata*, *M. flabellata*, Patagonia, CANU, Mem. Soc. geol. France xii, pp. 6 & 7, pl. i, figg. 3, 4 & 8; *M. longispina*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 52, **n. spp.**
- Membraniporella magellanica*, CALVET, Ergebn. Hamburg. Magalhaen. p. 15, pl. i, fig. 4.
- +*M. magellanica*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 53, **n. sp.**
- +*Micropora crassopora*, Egypt, CANU, Bull. Inst. Egypt iv, p. 227, pl. ii, fig. 8; +*M. coriacea*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 10, pl. i, fig. 15.
- +*Microporella malusi*, Patagonia, CANU, t. c. p. 11, pl. iii, fig. 27; *M. malusii*, *M. divaricata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 42, pl. iii, fig. 4, p. 46, pl. iii, fig. 1; +*M. violacea*, *M. ciliata*, pp. 21 & 22, pl. xxxiv, figg. 25, 26 & 27, Tunis, CANU, Explor. Sci. Tunis 1904.
- +*M. fallax*, *M. divaricata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 11, pl. ii, figg. 24 & 25; +*M. praeclata*, p. 415, pl. cx, fig. 6, pl. cxiii, fig. 3, *M. inflata*, p. 416, pl. cx, fig. 7, *M. ? bifoliata*, p. 417, pl. cxiii, figg. 6-8, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- Mucronella centrota*, Lord Howe Island, MAPLESTONE, P. R. Soc. Victoria xvii, p. 389, pl. xxix, fig. 9, **n. sp.**
- +*Onychocella angulosa*, *O. magniaperta*, pp. 18 & 19, pl. xxxiv, figg. 20-22, Tunis, CANU, Explor. Sci. Tunis 1904; +*O. boulei*, Egypt, CANU, Bull. Inst. Egypt iv, 4, p. 223, fig. 1.
- Osthimosia signata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 73, pl. vii, fig. 4.
- +*Palmicellaria convoluta*, p. 427, pl. cxvi, figg. 2-4, *P. punctata*, p. 428, pl. cxvi, fig. 1, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, **n. spp.**
- +*Phylactella ? orbiculata*, *P. ventricosa*, Tunis, CANU, Explor. Sci. Tunis 1904, pp. 26 & 27, pl. xxxv, figg. 37 & 38, **n. spp.**
- Porella rouzaudi*, CALVET, Ergebn. Hamburg. Magalhaen. p. 30, pl. ii, fig. 6; +*P. escharella*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 17, pl. iv, fig. 53.
- P. rouzaudi*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 57, **n. sp.**
- +*Poricella* **n. gen.** for *P. maçonnicu* **n. sp.**, Tunis, CANU, Explor. Sci. Tunis 1904, p. 28, pl. xxxv, fig. 43.
- +*Retepora prisca*, SMYČKA, Vestnik. Klub. Prostejove vii, p. 61.
- +*R. quadripunctata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 15, pl. iv, fig. 54; +*R. doverensis*, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904, p. 422, pl. cxi, figg. 5-7, pl. cxv, figg. 1-5 : **n. spp.**
- +*Rhamphostomella perforata*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 15, pl. iii, fig. 39, **n. sp.**
- Schizoporella simplex*, *S. hosteensis*, *S. eatoni*, pp. 51 & 52, pl. iii, figg. 6, 11 & 10, Antarctic, WATERS, Exp. Antarct. Belge 1904; *S. isabelliana ?* Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 593, fig. 5; +*S. unicornis*,

- S. linearis*, *S. auriculata*, Tunis, CANU, Explor. Sci. Tunis 1904, pp. 24-26, pl. xxxiv, figg. 31-35; *S. ornata*, p. 26, pl. ii, fig. 4, *S. pellucidula*, p. 27, pl. ii, fig. 3, CALVET, Ergebn. Hamburg. Magalhaen.; †*S. informata*, p. 419, pl. cxiv, figg. 6-10, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904.
- S. gibberula*, *S. heteromorpha*, pp. 387 & 388, figg. 3-6, Lord Howe Island, MAPLESTONE, P. Soc. Victoria xvii; *S. ornata*, *S. pellucidula*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 56; †*S. subquadrata*, p. 420, pl. cxiv, fig. 1, pl. cxviii, figg. 5 & 6, *S. latisinuata*, p. 421, pl. cxiv, figg. 2-4, *S. doverensis*, p. 421, pl. cxvii, fig. 1, *S. cumulata*, p. 422, pl. cxvii, fig. 7, Maryland, ULRICH & BASSLER, Maryland geol. Surv. 1904: **n. spp.**
- †*Schizotheca serratimargo*, nomenclature, NEVIANI, Boll. Soc. geol. Ital. xxiii, pp. 270-276, pl. x.
- Scrupocellaria funiculata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 23, pl. viii, fig. 1.
- Smittia marsupium*, *S. marionensis*, pp. 61 & 62, pl. iv, 4, pl. viii, 8, Antarctic, WATERS, t. c.; †*S. (Reussia) seguenzai*, p. 16, pl. iv, fig. 42, *S. (Mucronella) grotriani*, fig. 46, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3).
- †*S. incisa*, p. 15, pl. iv, figg. 39 & 40, *S. subtorquata*, fig. 44, *S. patagonica*, p. 16, fig. 45, *S. expectans*, fig. 43, *S. coronata*, figg. 51 & 52, Patagonia, CANU, t. c. **n. spp.**
- Thalamoporella michaelsoni*, CALVET, Ergebn. Hamburg. Magalhaen. p. 18, pl. ii, fig. 1.
- T. hovensii*, Lord Howe Island, MAPLESTONE, P. Soc. Victoria xvii, p. 387, fig. 2; *T. michaelsoni*, Atlantic Ocean, sub-antarctic region, CALVET, Bull. Soc. zool. France xxix, 3, p. 54: **n. spp.**
- †*Tremopora radicifera*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 7, pl. i, fig. 9.
- Turritigera stellata*, Antarctic, WATERS, Exp. Antarct. Belge 1904, p. 76, pl. v, fig. 3, pl. viii, fig. 13.
- †*Umbonula ceratomorpha*, Patagonia, CANU, Mem. Soc. geol. France, Pal. xii (3), p. 18, pl. iv, fig. 47.

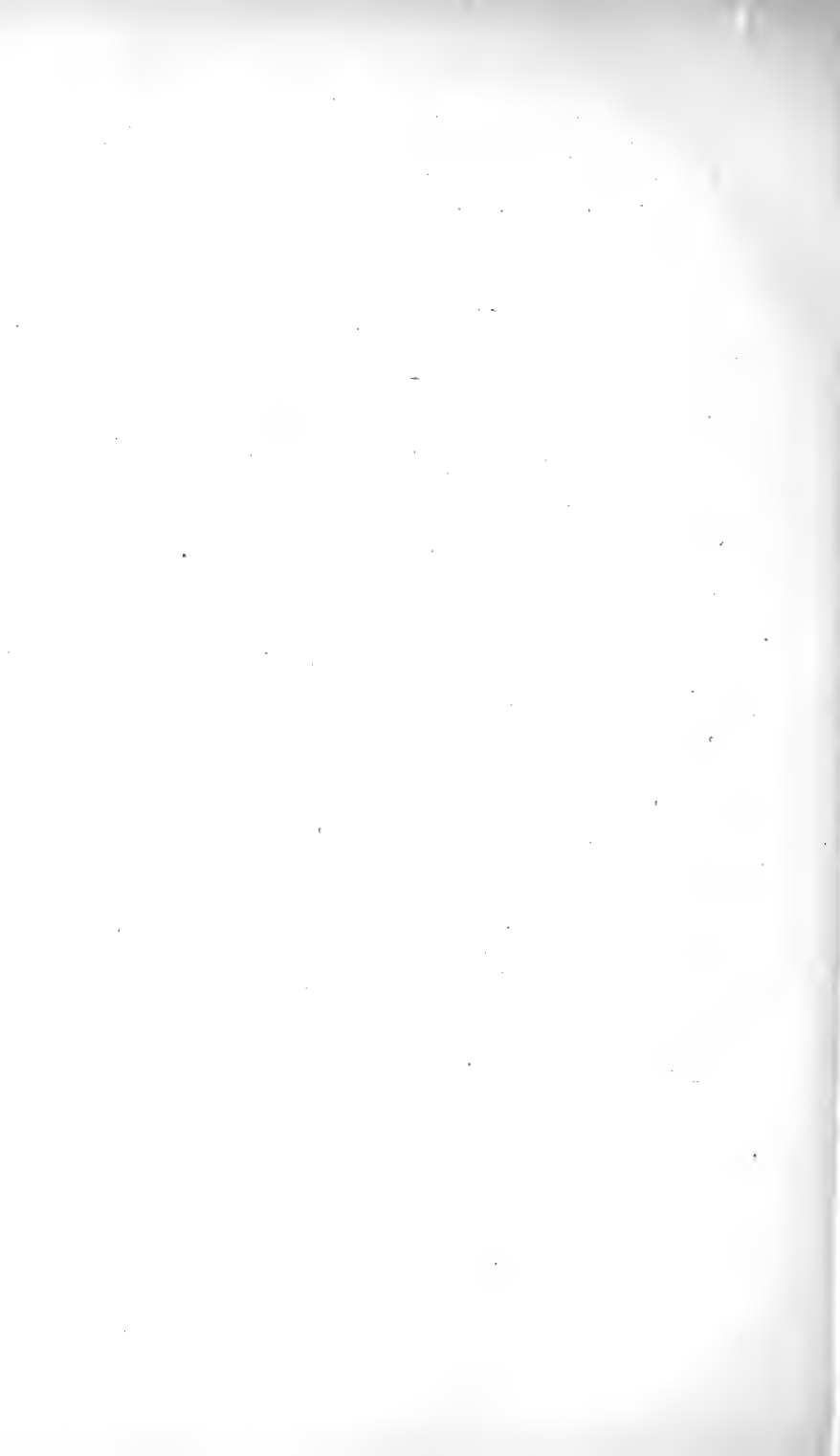
CTENOSTOMA.

- †*Alcyonidium*, Paleozoic, development, CUMINGS, Amer. J. Sci. xvii, p. 55, fig. 31; *A. gelatinosum*, Franz-Josef Land; characters, WATERS, Tr. Linn. Soc. London xxix, p. 179, pl. xx, fig. 7, pl. xxi, figg. 6 & 7; *A. gelatinosum*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 13, pl. v, figg. 1-13.
- †*Allonema botellus*, p. 281, pl. lxvii, fig. 1, *A. moniliforme* **n. var. aggregatum**, p. 282, p. lxv, fig. 14, pl. lxvii, fig. 9, *A. fusiforme*, p. 284, pl. lxvii, fig. 8, occurrence and characters, ULRICH & BASSLER, Smithsonian. Collect. xlv.
- †*A. n. gen.* for *A. botelloides*, p. 281, pl. lxvii, figg. 2-4, *A. waldronense*, p. 283, fig. 5, *A. subfusiforme*, p. 283, figg. 6 & 7, *A. ? minimum*, p. 284, figg. 10-12, American Paleozoic, ULRICH & BASSLER, t. c. **n. spp.**
- †*Ascodictyon siluriense*, p. 286, pl. lxviii, figg. 11 & 12, *A. stellatum*, p. 287, figg. 9 & 10, synonymy and characters, ULRICH & BASSLER, t. c.
- †*A. floreale*, p. 288, pl. lxviii, fig. 13, *A. parvulum*, p. 288, fig. 14, *A. sparsum*, p. 289, fig. 15, American Paleozoic, ULRICH & BASSLER, t. c. **n. spp.**
- †*Heteronema n. gen.* for *H. capillare*, p. 278, pl. lxv, fig. 11, *H. ? contextum*, p. 279, fig. 12, *H. carbonarium*, p. 279, fig. 13, American Paleozoic, ULRICH & BASSLER, t. c. **n. spp.**

- Paludicella articulata*, ENTZ, Termes. Kozl. Magyar Tars. 1904, p. 619, 2 figg.; *P. ehrenbergi*, natural history, regeneration, CHIRICA, pp. 10-13, Ann. Univ. Jassy iii; *P. ehrenbergii*, Massachusetts, DAVENPORT, P. U. S. Mus. xxvii, p. 215, pl. vi, fig. 3.
- Pottsiella erecta*, Pennsylvania, DAVENPORT, t. c. p. 215, pl. vi, fig. 2.
- +*Ptychocladia* **n. gen.** for *P. agellus* **n. sp.**, American Paleozoic, ULRICH & BASSLER, Smithsonian. Collect. xlv, p. 290, pl. lxvii, fig. 10.
- +*Rhopalonaria venosa*, p. 268, pl. lxvi, figg. 2 & 3, Indiana, *R. capillaris* (**n. n.** for *Terebripora* Dollfus), p. 271, fig. 32, *R. ? vetusta* (**n. n.** for *Terebripora* Oehlert), p. 271, fig. 33, France, Devonian, ULRICH & BASSLER, t. c.
- +*R. attenuata*, p. 268, pl. lxvi, figg. 4 & 5, *R. robusta*, p. 269, fig. 6, *R. tenuis*, p. 270, figg. 7-9, *R. medialis*, p. 270, fig. 10, *R. keokukensis*, p. 272, fig. 11, American Paleozoic, ULRICH & BASSLER, t. c. **n. spp.**
- +*Vinellidæ* **n. fam.**, characters and composition, ULRICH & BASSLER, t. c. p. 273.
- +*Vinella repens*, p. 274, pl. lxviii, figg. 1-3, *V. radialis*, p. 274, fig. 4, *V. radicipennis*, fig. 7, *V. radicipennis conferta*, p. 275, figg. 5 & 6, *V. ? radians*, p. 276, pl. lxv, figg. 9 & 10, synonymy, characters, ULRICH & BASSLER, t. c.
- +*Vinella ? multiradiata*, New York, Paleozoic, ULRICH & BASSLER, t. c. p. 276, pl. lxviii, fig. 8, **n. sp.**

PHYLACTOLÆMA.

- Alcyonella stagnorum*, Rep. Hastings Nat. Hist. Soc. xi, pl. opp. p. 51.
- Cristatella* in ponds in Norfolk, HURRELL, Tr. Norfolk Soc. vii, 5, p. 755; *C.*, budding, MARCHAL, Arch. Zool. exp. xxxii, 3, pp. 321 & 322; *C. mucedo*, occurrence in a new locality, LINDINGER, Abh. Ges. Nurnberg xv, pp. 65-84; *C. mucedo*, DAVENPORT, P. U. S. Mus. xxvii, p. 220, pl. vi, fig. 9.
- Fredericella sultana*, natural history, CHIRICA, Ann. Univ. Jassy iii, pp. 5 & 6; *F. sultana* (= *regina* Leidy), United States, DAVENPORT, P. U. S. Mus. xxvii, p. 216, pl. vi, fig. 4.
- Lophopus*, budding, MARCHAL, Arch. Zool. exp. xxxii, 3, pp. 321 & 322; *Lophopus*, in ponds in Norfolk, HURRELL, Tr. Norfolk Soc. vii, 5, p. 755; *L. crystallinus*, WEIGELT, Mem. Cour. Belgique lxiv, p. 516, fig. 83; *L. crystallinus*, anatomy and biology, GARRARD, J. Northampton Soc. xii, 97, pp. 158-164.
- Pectinatella magnifica*, DAVENPORT, P. U. S. Mus. xxvii, p. 219, pl. vi, fig. 8.
- Plumatella*, natural history notes on Roumanian, CHIRICA, pp. 6-10, Ann. Univ. Jassy iii; *P. princeps*, p. 217, pl. vi, fig. 5, *P. polymorpha*, p. 217, fig. 6, *P. punctata*, p. 218, fig. 7, DAVENPORT, P. U. S. Mus. xxvii.



X. CRUSTACEA.

(Including
GIGANTOSTRACA AND PYCNOGONIDA.)

BY

W. T. CALMAN, D.Sc.

CONTENTS.

| | Page | | Page |
|--|------|--|------|
| Introduction | 2 | b. Indo-Pacific | 25 |
| Crustacea | | c. Arctic and Ant- arctic | 26 |
| I. TITLES | 3 | 2. Geological | 26 |
| II. SUBJECT-INDEX | | IV. SYSTEMATIC | |
| 1. Morphology | 19 | A. Malacostraca | |
| 2. Physiology | 19 | 1. Decapoda | 27 |
| 3. Reproduction & Develop- ment | 20 | a. Brachyura | 27 |
| 4. Autotomy & Regeneration | 20 | Oxyrhynga | 28 |
| 5. Bionomics | 21 | Cyclometopa | 28 |
| a. General | 21 | Catometopa | 30 |
| b. Habitats | 21 | Oxystomata | 31 |
| c. Symbiosis & Parasi- tism | 21 | Dromiacea | 31 |
| 6. Variation & Abnormalities | 22 | b. Anomura | 32 |
| 7. Phylogeny & Classification | 22 | Galatheidea | 32 |
| 8. Miscellaneous | 22 | Paguridea | 32 |
| III. DISTRIBUTION | | Hippidea | 33 |
| 1. Geographical | 22 | c. Macrura | 33 |
| A. Land & Fresh-water | 22 | Nephropsidea | 33 |
| a. Palæarctic Region | 23 | Eryonidea | 34 |
| b. Oriental | 23 | Loricata | 34 |
| c. Ethiopian | 24 | Thalassinidea | 34 |
| d. Nearctic | 24 | Caridea | 34 |
| e. Neotropical | 24 | Stenopidea | 37 |
| f. Australian | 24 | Penæidea | 37 |
| B. Marine | 24 | Incertæ Sedis | 37 |
| a. Atlantic | 25 | 2. Schizopoda | 38 |
| | | 3. Stomatopoda | 38 |
| | | 4. Cumacea | 39 |

| | Page | | Page |
|-----------------------|------|----------------------------|------|
| 5. Tanaidacea . . . | 39 | 2. Copepoda . . . | 49 |
| 6. Isopoda . . . | 39 | 3. Branchiura . . . | 52 |
| Asellota . . . | 39 | 4. Ostracoda . . . | 53 |
| Phreatoicoidea . . | 40 | 5. Cirripedia . . . | 55 |
| Flabellifera . . . | 40 | | |
| Valvifera . . . | 41 | Gigantostraca | |
| Epicaridea . . . | 41 | I. TITLES | 56 |
| Oniscoidea . . . | 42 | II. SUBJECT-INDEX . . . | 57 |
| 7. Amphipoda . . . | 43 | III. DISTRIBUTION. . . . | 57 |
| Gammarina . . . | 43 | IV. SYSTEMATIC | |
| Hyperina . . . | 46 | Xiphosura. | 58 |
| Caprellina . . . | 46 | Trilobita | 58 |
| 8. Phyllocarida . . . | 47 | Eurypterida | 59 |
| B. Entomostraca | | Pycnogonida. Titles etc. . | 60 |
| 1. Branchiopoda. . . | 47 | | |
| a. Phyllopoda. . . | 47 | | |
| b. Cladocera . . . | 47 | | |

INTRODUCTION.

THE number of titles recorded under Crustacea is less than last year (258 as against 280) but this is accounted for by the fact that the list has been closed at a much earlier date, before some of the foreign periodicals had reached the London libraries.

One of the most notable works published during 1904 is DOFLEIN'S (53) Report on the *Brachyura* of the "Valdivia" Expedition. Besides descriptions of some important new genera and species this memoir contains the results of an elaborate investigation into the structure of the eyes in deep-sea crabs. GRUVEL'S (71) Monograph of the Cirripedes is a very useful compendium of the group of which the author has done much to extend our knowledge during recent years. It is nothing short of an absurdity however that a book which was certainly published not later than November, 1904, should bear on its title page the date 1905.

THIELE'S memoirs on *Phyllocarida* (219) and *Branchiura* (218) contain many new observations on the morphology as well as on the classification of these interesting groups. ZOGRAF'S (252) investigation of the median eye and certain associated structures in the *Branchiopoda* is of great morphological interest. SMITH (198) has elucidated some points hitherto obscure in the remarkable metamorphosis of the Isopod *Gnathia*. BONNIER'S (17) important account of a remarkable parasitic Copepod was published in 1898 but appears to have escaped notice in other bibliographies as well as in our own. Miss MOSELEY (138) has discovered an additional gill hitherto overlooked by the innumerable students of the common Crayfish.

The chief physiological paper of the year is KEEBLE & GAMBLE'S (101) work on the colouration of Decapods, a subject to which they have previously made important contributions. Experiments on the "psychology" of Crustacea are recorded and discussed by BOHN (15), SPAULDING (200 & 201) and YERKES & HUGGINS (248). Regeneration is treated of by REED (170), MORGAN (137) and ARIOLA (11).

Plankton research as usual forms the subject of a large number of papers among which those of EKMAN (56) and WESENBERG-LUND (234) may be specially mentioned.

BOUVIER'S (19) preliminary account of "Mutations" in certain freshwater prawns is of great interest in connection with current discussions on variation and heredity.

Among the many purely systematic works there may be mentioned the series of papers by various authors on collections from the Maldives (18 & 207), from Ceylon (34, 127 & 229) and from North Western America (87, 165 & 172).

Important papers on *Pycnogonida* are published by CARPENTER (1), COLE (2) and LOMAN (5 & 6). The most interesting discovery however is HODGSON'S (3) *Pentanymphe*, which will necessitate a considerable modification of our views on the morphology of the group.

It may be mentioned that a second instalment of BUDDE-LUND'S "Revision of Crustacea Isopoda Terrestria" has appeared but is not included in the present Record since it seems probable that, like the first part (Zool. Rec. 1901, Crustacea, No. 25), it may have been published in some periodical not yet seen.

Though this is not the place for an expression of opinion on matters of nomenclature, the Recorder may draw attention to the grave danger of confusion arising out of the practice, now unhappily becoming common, of using old and well-known generic names in a new sense. It would greatly facilitate the work of the Recorder, at any rate, if authors who did so were careful to indicate in some way the particular genus with which they are dealing. To give an example, Miss RATHBUN (167) describes a new crab under the name of *Uca ærstedii*. Without a knowledge of the particular views which Miss Rathbun held on the subject of nomenclature at the date when the paper was published it would be difficult to discover to which of two well-known genera the new crab is supposed to belong.

CRUSTACEA.

I. TITLES*.

1. ABRIC, PAUL. Les premiers stades du développement de la Sacculine (*Sacculina carcini*, Rathke). C.R. Ac. Sci. cxxxix, pp. 430-432.
2. ALCOCK, A. Description of and reflections upon a new species of Apodous Amphibian from India. [Distrib. compared with that of *Pagurida*, p. 268.] Ann. Nat. Hist. (7) xiv, pp. 267-273, pl. vii.
3. — & MCARDLE, A. F. Illustrations of the Zoology of the... Investigator. Crustacea. Part ix, pls. xlix-lv, Calcutta, 1901. Part x, pls. lvi-lxvii, 1902.
4. ALZONA, CARLO. Brevi notizie sulle raccolte zoologiche nelle caverne (continuazione). Boll. Naturalista xxiv, pp. 119-123.
5. ANDREWS, E. A. Breeding habits of Crayfish. Amer. Natural. xxxviii, pp. 165-206, 10 text-figg.
6. — Crayfish spermatozoa. Anat. Anz. xxv, pp. 456-463, 7 text-figg.
7. —. An aberrant limb in a Crayfish. Biol. Bull. vi, pp. 75-83, 5 text-figg.
8. ANGLAS, J. Les animaux de laboratoire. L'Écrevisse (Anatomie et dissection). 8vo, Paris, n.d., 27 pp., 3 col. pls., 5 text-figg.

* An asterisk prefixed to a title indicates that the Recorder has not seen the Journal or Work referred to.

ANNANDALE, NELSON. [See SCHARFF (187).]

9. ANON. Bull. internat. expl. Mer, Année 1903-1904, No. 3, Partie D, Plankton. pp. 115-146. [Tables.]
10. —. The giant spider crab. Amer. Mus. J. iv, pp. 25 & 60.
11. ARIOLA, V. Rigenerazione naturale eteromorfa dell' oftalmopodite in *Palinurus vulgaris*. Arch. Entwickelmech. xviii, pp. 248-252, pl. xiv.
Abstract with remarks by F. v. WAGNER, Zool. Zentrbl. xi, pp. 830-832.
12. BAKER, W. H. Notes on South Australian Decapod Crustacea. Part i. Tr. R. Soc. S. Austral. xxviii, pp. 146-161, pls. xxvii-xxxi.
BASSLER, R. S. [See ULRICH & BASSLER (225).]
13. BAUDOUIN, MARCEL. Le *Lernæenicus Sprattæ* parasite de la Sardine en Vendée. C.R. Ac. Sci. cxxxix, pp. 998-1000.
14. BENEDICT, JAMES E. A new genus and two new species of Crustaceans of the family *Albuneidae* from the Pacific Ocean; with remarks on the probable use of the antennulæ in *Albunea* and *Lepidopa*. P. U. S. Mus. xxvii, pp. 621-625, 5 text-figg.
15. BOHN, GEORGES. Coopération, hiérarchisation, intégration des sensations chez les Artiozoaires. C.R. Ac. Sci. cxxxviii, pp. 112-114.
16. BOLTON, H. The Palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii, pp. 378-415 and 578-650.
17. BONNIER, JULES. Note sur le *Pionodesmotes phormosomæ*, Copépode parasite du *Phormosoma uranus*. [Appendix to KÖHLER's "Echinides et Ophiures.....Hirondelle".] Res. Camp. scient.....Monaco, Fasc. xii (1898), pp. 61-66, pl. x.
18. BORRADAILE, L. A. Marine Crustaceans. xiii. The Hippidea, Thalassinidea and Scyllaridea. In "The Fauna and Geography of the Maldive and Laccadive Archipelagoes," edited by J. Stanley Gardiner, Cambridge, 4to, vol. ii, pt. 3, pp. 750-754, pl. lviii.
19. BOUVIER, E. L. Sur le genre *Ortmannia* Rathb. et les mutations de certains Atyidés. C.R. Ac. Sci. cxxxviii, pp. 446-449.
[Translated as] On the genus *Ortmannia* Rathb. and the Mutations of certain Atyids. Ann. Nat. Hist. (7) xiii, pp. 377-381.
20. —. Crevettes de la famille des Atyidés; espèces qui font partie des collections du Muséum d'Histoire naturelle. Bull. Mus. Paris x, pp. 129-138.
21. —. Sur un exemplaire remarquable d'*Astacus fluviatilis* var. *torrentium* Schrank. Bull. Soc. ent. France 1904, pp. 254 & 255.
— [See GRUVEL (71).]
22. BRADY, G. STEWARDSON. On Entomostraca collected in Natal by Mr James Gibson. P. Zool. Soc. London 1904, ii, pp. 121-128, pls. vi-viii.
23. —. Notes on Entomostraca found at the Roots of Laminariæ. Tr. Soc. Northumb. i (1), pp. 3-8, pls. i & ii.
— [See NORMAN & BRADY (149).]
24. BRAZHNÍKOV, V. Zamyetka o novom rodye i vidye iz sem. *Hippolytidae*. (Sur un nouveau genre et une nouvelle espèce de Décapodes, famille *Hippolytidae*.) Annuaire Mus. St. Petersb. viii, Nouvelles pp. xlv-xlvi (1903).

25. BREHM, V. & ZEDERBAUER, E. Beiträge zur Planktonuntersuchung alpiner Seen. ii. Verh. Ges. Wien liv (10), pp. 635-643, 5 text-figg.
26. BROWNE, E. T. & VALLENTIN, RUPERT. On the marine fauna of the Isles of Scilly. J. Inst. Cornwall xvi, pp. 120-132.
27. BROŽEK, ARTHUR. Variačně statistická zkoumání na *Atyaephyra desmarestii* (Joly) z jezera Skadarského. (Variations-statistische Untersuchungen an *Atyaephyra desmarestii* Joly, aus dem Scutarisee.) SB. Bohmisch Ges. 1904, xi, 71 pp., 1 pl. & text-figg. [German Resumé, pp. 68-70.]
Abstract by K. THON, Zool. Zentrbl. xii, p. 25.
28. BRUES, CHARLES T. The internal factors of regeneration in *Alpheus*. Biol. Bull. vi, pp. 319 & 320.
29. BRUNTZ, L. Sur l'existence de trois sortes de cellules phagocytaires chez les Amphipodes normaux. C.R. Ac. Sci. cxxxix, pp. 368-370.
30. —. Sur l'existence de trois sortes de cellules phagocytaires chez les Amphipodes normaux. C.R. Soc. Biol. lvii, pp. 145-147.
31. BULLOT, G. On the toxicity of distilled water for the fresh-water *Gammarus*. Suppression of this toxicity by the addition of small quantities of Sodium Chloride. Univ. Calif. Publ. Physiol. i (22), pp. 199-217.
32. CALMAN, W. T. On the classification of the Crustacea Malacostraca. Ann. Nat. Hist. (7) xiii, pp. 144-158, 2 text-figg.
33. —. On *Munidopsis polymorpha* Koelbel, a cave-dwelling marine Crustacean from the Canary Islands. Ann. Nat. Hist. (7) xiv, pp. 213-218, 1 text-fig.
See also P. Zool. Soc. London 1904, ii, p. 82.
34. —. Report on the Cumacea collected by Professor Herdman at Ceylon in 1902. In "Report to the Government of Ceylon on the Pearl Oyster Fisheries of the Gulf of Manaar," by W. A. HERDMAN, 4to, Royal Society, London. Part ii, Supplementary Report xii, pp. 159-180, 5 plates, 1904.
Quoted hereafter as "Rep. Ceylon Pearl Fisheries ii."
35. CARL, J. Materialien zur Höhlenfauna der Krim. I. Aufsatz. Neue Höhlen-Crustaceen. Zool. Anz. xxviii, pp. 322-329, 11 text-figg.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xii, p. 78.
36. CHAPMAN, FREDERICK. Foraminifera and Ostracoda from the Cretaceous of East Pondoland, South Africa. Ann. S. African Mus. iv (5), pp. 221-237, pl. xxix.
37. —. On some Foraminifera and Ostracoda from Jurassic (Lower Oolite) Strata near Geraldton, Western Australia. P. Soc. Victoria xvi (2), pp. 185-206, pls. xxii & xxiii.
38. —. New or little-known Victorian Fossils in the National Museum, Melbourne. Part iv. Some Silurian Ostracoda and Phyllocarida. Op. cit. xvii (1), pp. 298-319, pls. xiii-xvii.
39. CHECCHIA-RISPOLI, GIUSEPPE. L'*Harpactocarcinus punctulatus* Desmarest, dell' Eocene di Peschici. Boll. Soc. zool. Ital. (2) v, pp. 49-57, 1 pl.
40. CHEVREUX, ED. Mission de Créqui-Montfort et Sénéchal de la Grange. Note préliminaire sur les Amphipodes recueillis par M. le Dr Neveu-Lemaire dans le lac Titicaca (Juillet, 1903). Bull. Soc. zool. France xxix, pp. 131-134, 2 text-figg.

41. CHOBOUT, A. Exploration zoologique de la grotte de Tharaux (Gard). Bull. Soc. Nîmes xxxi, pp. 84-90.
- 41A. CHUN, CARL. Aus den Tiefen des Weltmeeres. Schilderungen von der Deutschen Tiefsee-Expedition. pp. vi + 549, illustr., Jena, 1900. *Scyramathia hertwigi*, n. sp. figured on p. 497 attributed to DOFLEIN.
- 41B. *——. The same. Zweite Auflage 1903. According to DOFLEIN (53) two n. spp. of Brachyura, *Trichopeltarium alcocki* and *Geryon paulensis*, are figured on p. 531 of this edition.
42. CLARKE, JOHN M. Notes on Paleozoic crustaceans. Rep. N. York Mus. liv (1), pp. 83-119, pls. i-iv (1902).
- CLAUS, C. [See GROBBEN (68).]
43. CLEVE, P. T. Report on Plankton collected by Mr Thorild Wulff during a voyage to and from Bombay. Arkiv Zool. i, pp. 329-381, pls. xvi-xix, 2 text-figg.
44. COLLET, PIERRE. Notices géologiques et paléontologiques pour servir à la géologie de l'arrondissement de Sainte-Ménéhould. Bull. Soc. Reims xii, pp. 18-87, 3 pls. [Crustacea, p. 32.]
45. COUFFON, OLIVIER. Étude critique sur les Faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35-85, 1 pl.
46. COUTIÈRE, H. Note sur le commensalisme de l'*Arete dorsalis* var. *Pacificus* H. Coutière, d'après les notes de M. L. Seurat, naturaliste, à Rikitea (Iles Gambier). Bull. Mus. Paris x, pp. 58-60.
47. ———. Sur un type nouveau d'amphipode, *Grandidierella maha-falensis*, provenant de Madagascar. Bull. Soc. Philom. (9) vi, pp. 166-174, 19 text-figg.
48. CUNNINGTON, W. A. The Crustacea of Cambridgeshire. [In] "Handbook to the Natural History of Cambridgeshire," edited by J. E. MARR and A. E. SHIPLEY. 8vo, Cambridge, 1904, pp. 204-208.
49. CUSHMAN, JOSEPH A. Miocene Barnacles from Gay Head, Mass., with notes on *Balanus proteus* Conrad. Amer. Geol. xxxiv, pp. 293-296, 3 text-figg.
50. CUSSANS, MARGARET. L. M. B. C. Memoirs, No. xii. Gammarus. P. Liverp. biol. Soc. xviii, pp. 327-373, pls. i-iv, 6 text-figg. Also published separately.
51. DADAY, E. VON. Mikroskopische Süsswasserthiere aus Turkestan. Zool. Jahrb. Syst. xix, pp. 469-553, pls. xxvii-xxx, 5 text-figg.
- DALL, W. H. [See HOLMES (87), RATHBUN (165) & RICHARDSON (172).]
- DE MAN, J. G. [See MAN, J. G. DE (122-124).]
52. DENNANT, JOHN & KITSON, A. E. Catalogue of the described species of fossils (except *Bryozoa* and *Foraminifera*) in the Cainozoic fauna of Victoria, South Australia and Tasmania. Rec. Geol. Survey Victoria i (2), pp. 89-147, 1 map.
53. DOFLEIN, FRANZ. Brachyura. Wiss. Ergeb. deutschen Tiefsee-Exp. "Valdivia" vi, pp. xiv + 314, 58 pls., 1 pl. & 68 figg. in text. Quoted hereafter as Brachyura "Valdivia."
- . [See CHUN (41A & 41B) & SCHNEE (189).]
54. DOLLFUS, A. Sur un nouveau genre et une nouvelle espèce de Crustacé Isopode fossile découvert à Bouzigues (Hérault). Feuille Natural. (4) xxxiv, pp. 145 & 146, 3 text-figg.

55. DYDUCH, T. Materialien zu einer Isopodenfauna Galiziens. Bull. Ac. Cracovie 1903, pp. 61-64, 6 text-figg.
56. EKMAN, SVEN. Die Phyllopoden, Cladoceren und freilebenden Copepoden der nordschwedischen Hochgebirge. Ein Beitrag zur Tiergeographie, Biologie und Systematik der arktischen, nord- und mittel-europäischen Arten. Zool. Jahrb. Syst. xxi, pp. 1-170, pls. i & ii, 12 text-figg.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xi, pp. 720-729.
57. ENTZ, GÉZA. A sósvizek faunája. Potfuz. Termes. Kozl. lv (1900), pp. 99-119, 5 text-figg.
[Translated as] Die Fauna der kontinentalen Kochsalzwässer. Math. naturw. Ber. Ungarn xix, pp. 89-124, 5 text-figg. (1904).
58. FLORENTIN, R. La faune des grottes de Sainte-Reine. Feuille Natural. (4) xxxiv, pp. 176-179.
FOWLER, G. HERBERT. [See STEBBING & FOWLER (209).]
59. FOX-STRANGWAYS, C. The Geology of the Oolitic and Cretaceous Rocks south of Scarborough. Second Edition. Mem. Geol. Surv. England & Wales 1904, pp. viii+119, 11 pls. & figg. in text.
60. GADD, PEHR. Parasit-Copepoder i Finland. Acta Soc. Faun. Fenn. xxvi, No. 8, 60 pp., 2 pls.
61. GĄDZIKIEWICZ, WITOLD. Ueber den feinern Bau des Herzens bei Malakostraken. Jena. Zeitschr. xxxix, pp. 203-234, pls. v-viii, 6 text-figg.
62. —. Ueber den histologischen Bau des Herzens bei den dekapoden Crustaceen. Bull. Ac. Cracovie 1904, pp. 424-434, 7 text-figg.
63. GAL, JULES. *Niphargus* et *Cæcospheroma*. Observations physiologiques. Bull. Soc. Nîmes xxxi, pp. 48-51.
GAMBLE, F. W. [See KEEBLE & GAMBLE (101 & 102).]
64. GARDINER, J. STANLEY. Notes and observations on the Distribution of the larvæ of marine animals. Ann. Nat. Hist. (7) xiv, pp. 403-410.
65. GENTHE, KARL WILHELM. Some notes on *Alcippe lampas* (Hanc.) and its occurrence on the American Atlantic shore. Zool. Jahrb. Syst. xxi, pp. 181-200, pls. xi & xii.
66. GIARD, A. À propos des travaux de Miss Harriet Richardson sur les Bopyriens. C.R. Soc. Biol. lvi, pp. 591-593.
67. GRABAU, AMADEUS W. Guide to the Geology and Paleontology of Niagara Falls and vicinity. Rep. N. York Mus. liv (4), pp. 1-284, 18 pls., 190 text-figg.
68. GROBBEN, KARL. Lehrbuch der Zoologie begründet von C. CLAUS, neubearbeitet von Dr Karl Grobben. 1^{ste} Hälfte, 480 pp., 507 text-figg. Marburg in Hessen, 1904.
69. GROCHOWSKI MIECZYŚŁAW. O rodzaju Studniczka (*Niphargus*). (Recherches sur les crustacés du genre *Niphargus*.) Część i, ii, iii [with different sub-titles]. Kosmos polski xxix, pp. 31-50, 81-100, 266-301, 1 pl.
As this paper is entirely in the Polish language it cannot be fully recorded, but it appears to deal at length with the classification of the *Amphipoda* in general and of the *Gammaridæ* in particular as well as with the genus *Niphargus*.

70. GRÜNBERG, —, LUCAS, — & THIELE, —. Bericht über die Leistungen in der Carcinologie während der Jahre 1895, 96 und 97. Arch. Naturg. lxxiii (1897). II, 3 Heft. (December 1904), pp. 341–506.
71. GRUVEL, A. Monographie des Cirrhipèdes ou Thécostracés. Préface de M. le Professeur BOUVIER. pp. xii+472, 427 figg. in text and table of autographs, 8vo, Paris, 1905. [Received in London, 18th November 1904.]
72. —. Sur quelques points de l'anatomie des Cirrhipèdes. C.R. Ac. Sci. cxxxix, pp. 73–75.
73. —. De quelques phénomènes d'ovogenèse chez les Cirrhipèdes. T. c. pp. 148–150.
74. —. Sur quelques points de l'anatomie des Cirrhipèdes. T. c. pp. 216–218.
75. —. Études anatomiques sur quelques Cirrhipèdes Operculés du Chili. Zool. Jahrb. Suppl. vi (Fauna chilensis.....L. PLATE) Bd. iii, pp. 307–352, pls. xx–xxii.
— [Numerous preliminary notes dealing with *Cirrhipedia*.] Pr.-verb. Soc. Sci. Bordeaux since 1897–8.
76. GUCCINI, LUIGI. Sul contenuto gastro-enterico dei pesci del Ticino. Rend. Ist. Lombardo (2) xxxvii, pp. 194–201.
77. GUIEYSSE, A. Étude du système digestif de la Langouste. Bull. Soc. Philom. (9) vi, pp. 117–128, 3 text-figg.
78. GURNEY, ROBERT. The fresh- and brackish-water Crustacea of East Norfolk. Tr. Norfolk Soc. vii, pp. 637–660, with table.
79. HANSEN, H. J. Two new forms of *Choniostomatidæ*: Copepoda parasitic on Crustacea Malacostraca and Ostracoda. Quart. J. Micr. Sci. (n. s.) xlviii, pp. 347–358, pl. xxii.
80. HARRIS, J. ARTHUR. An ecological catalogue of the Crayfishes belonging to the genus *Cambarus*. Kansas Univ. Sci. Bull. ii (3), pp. 51–187, pls. i–v (Kansas Univ. Bull. iv (6)) 1903.
81. HAY, W. P. On the habits of *Cambarus uhleri* Faxon. P. Soc. Washington xvii, p. 167.
82. HEIDECKE, PAUL. Untersuchungen über die ersten Embryonalstadien von *Gammarus locusta*. Jena. Zeitschr. xxxviii, pp. 505–552, pls. xiii–xvi.
83. HERDMAN, W. A. An outline of the Shrimp question. P. Liverp. biol. Soc. xviii, pp. 157–167.
84. —. Lobster Hatching. Nature lxx, p. 296.
HILL, WILLIAM. [See JUKES-BROWNE (96).]
85. HOEK, P. P. C. An interesting case of reversion. P. Ak. Amsterdam vii, pp. 90–94, 1 pl. [*Cirrhipedia*.]
86. HOFFENDAHL, KURT. Beitrag zur Entwicklungsgeschichte und Anatomie von *Pacilasma aurantium* Darwin. Zool. Jahrb. Anat. xx, pp. 363–398, pls. xxiii–xxvi.
87. HOLMES, SAMUEL J. Amphipod Crustaceans of the Expedition. Harriman Alaska Exped. x, pp. 233–246, text-figg. 118–128.
Review by W. H. DALL, Science (n. s.) xx, pp. 462–464.
88. —. Remarks on the Sexes of Sphaeromids, with a description of a new species of *Dynamene*. P. Calif. Ac. (3) Zool. iii, pp. 295–306, pl. xxxiv.

89. [HOLMES, SAMUEL J.]. On some new or imperfectly known species of West American Crustacea. T. c. pp. 307-328, pls. xxxv-xxxvii.
90. HOLMES, W. MURTON. List of fossils collected. P. Croydon Club 1904, pp. 45 & 46. [Chalk.]
HUGGINS, G. E. [See YERKES & HUGGINS (248).]
91. HUTTON, F. W. (edited by). Index Faunæ Novæ Zealandiæ. 8vo, London, 1904, pp. viii+372.
IAKHONTOFF, G. [See YAKHONTOV (246).]
92. JENSEN, SØREN. Biologiske og systematiske Undersøgelser over Ferskvands-Ostracoder. Udgivne efter hans Død af Dr FR. MEINERT og Dr C. WESENBERG-LUND. Vid. Medd. 1904, pp. 1-78, pls. i-iii.
93. JONES, T. RUPERT. Note on a palaeozoic *Cypridina* from Canada. Geol. Mag. (5) i, pp. 438 & 439, 1 text-fig.
94. JORDAN, H. Zur physiologischen Morphologie der Verdauung bei zwei Evertebraten. Biol. Centrbl. xxiv, pp. 321-332, 4 text-figg.
95. —. Beiträge zur vergleichenden Physiologie der Verdauung. iv. Die Verdauung und der Verdauungsapparat des Flusskrebse (*Astacus fluviatilis*). Arch. ges. Physiol. ci, pp. 263-310, pl. vii, 6 text-figg.
96. JUKES-BROWNE, A. J. The Cretaceous Rocks of Britain. III. The Upper Chalk of England. With contributions by WILLIAM HILL. Mem. geol. Surv. U. K. 1904, pp. x+566, 1 pl. & text-figg. [Crustacea, esp. pp. 493-496.]
97. JURICH, BRUNO. Die Stomatopoden der deutschen Tiefsee-Expedition. Wiss. Ergeb. deutschen Tiefsee-Exp. "Valdivia" vii, pp. 361-408, pls. xxv-xxx.
Quoted hereafter as Stomatopoden "Valdivia."
98. KANE, W. F. DE VISMES. *Niphargus kochianus* Bate, in an Irish Lake, and *N. subterraneus* Leach, in Kent. Ann. Nat. Hist. (7) xiv, pp. 274-283, pl. viii.
99. —. Further captures of *Mysis relicta* in Ireland. Irish Natural. xiii, pp. 107-109, 2 text-figg.
100. —. Entomostraca [from Sligo]. T. c. p. 203.
101. KEEBLE, FREDERICK, & GAMBLE, F. W. The Colour-physiology of Higher Crustacea. Phil. Trans., Ser. B. cxcvi, pp. 295-388, pls. xviii-xxiii, 1 text-fig.
102. — & —. On the presence of mobile fat in the Chromatophores of the Crustacea (*Hippolyte varians*). Zool. Anz. xxvii, pp. 262-264.
103. KEILHACK, LUDWIG. *Bosmina coregoni gibbera* Schoedler, ♂. T. c. p. 564, 1 text-fig.
KITSON, A. E. [See DENNANT & KITSON (52).]
104. KOBERT, —. Ueber Hämocyanin. Arch. Ver. Mecklenb. lvii (2), SB. Ges. Rostock, pp. xxi-xxxiv (1903).
105. KOCH, L. Die Isopoden Süddeutschlands und Tirols. Festschr. Ges. Nürnberg 1901, pp. 17-72.
Abstract by K. W. v. DALLA TORRE, Zool. Zentrbl. xi, p. 70.
106. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au lac Baikal pendant l'été de 1902. Arch. Zool. exp. (4) ii, pp. 1-26, 1 map, 12 text-figg.

107. LABBÉ, ALPHONSE. Sur la formation des tétrades et les divisions maturatives dans le testicule du Homard. C.R. Ac. Sci. cxxxviii, pp. 96-99.
108. —. Sur la polyspermie normale et la culture des spermatozoïdes. Op. cit. cxxxix, pp. 75-77.
109. —. La maturation des spermatides et la constitution des spermatozoïdes chez les crustacés décapodes. (Note préliminaire.) Arch. zool. exp. Notes (4) ii, pp. i-xiv, 27 text-figg.
110. LAMPLUGH, G. W. & others. The Geology of the country around Belfast. Mem. Geol. Survey Ireland 1904, pp. vii+166, 4 pls. & figg. in text.
111. LANKESTER, E. RAY. The structure and classification of the Arthropoda. Quart. J. Micr. Sci. (n. s.) xlvii, pp. 523-582, pl. xlii, 11 text-figg.
Reprint with additions, of article "Arthropoda" from Encycl. Brit. xxv (Zool. Rec. 1902, Crust. 147). The additions relating to Crustacea are unimportant.
112. —. An undescribed rudimentary gill-plume in the Crayfish. Nature lxix, p. 270.
See also MOSELEY (138).
LARSEN, E. [See WESENBERG-LUND (234).]
113. LATTER, OSWALD H. The Natural History of some Common animals. 8vo, Cambridge, 1904, pp. vi+331, text-figg. [The Crayfish, pp. 48-70.]
114. LINDER, CHARLES. Étude de la faune pélagique du lac de Bret. Rev. Suisse Zool. xii, pp. 149-258, pl. iv.
115. LINDSAY, JOHN. Millport Marine Biological Station. Tr. Edinb. Field Soc. v (2), pp. 66-75. [Notes on Crustacea by T. SCOTT, pp. 73 & 74.]
116. LO BIANCO, SALVATORE. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. Beiträge zur Kenntnis des Meeres und seiner Bewohner. I. Jena, 1904, pp. vi+91, 42 col. pls. & 1 map.
This is a translation of No. 159, Zool. Rec. 1902, with the addition of the plates. The figures are not all original.
117. LOEB, JACQUES. On the relative toxicity of distilled water, sugar solutions, and solutions of the various constituents of the sea-water for marine animals. Univ. Calif. Publ. Physiol. i (7), pp. 55-69 (1903).
Translation of No. 136, Zool. Rec. 1903.
118. LOŠKO, JAROSLAV. Morfologie exkrečních orgánů Crustacei. SB. Bohmisch. Ges. 1903, xxvi, 29 pp., 1 pl., 2 text-figg.
Abstract by K. THON, Zool. Zentrbl. xi, pp. 101-103, 1 text-fig.
LUCAS, —. [See GRÜNBERG, LUCAS & THIELE (70).]
MCARDLE, A. F. [See ALCOCK & MCARDLE (3).]
119. MCINTOSH, D. C. On variation in the number and arrangement of the male genital apertures and on the proportion of the sexes in the Norway Lobster (*Nephrops norvegicus*). P. Cambridge Soc. xii, pp. 441-444.
120. MCINTOSH [W. C.]. On the distribution of Marine animals. Ann. Nat. Hist. (7) xiii, pp. 117-130.

121. MAGRI, FRANCESCO. Primo contributo alla conoscenza dei Crostacei decapodi abissali del Compartimento marittimo di Catania. Atti Acc. Gioen. (4) xvii, Mem. xiv, 15 pp.
122. MAN, J. G. DE. Crustacés Decapodes terrestres et d'eau douce de l'Indo-Chine. Mission Pavie, Indo-Chine, 1879-1895. Études diverses, III, Recherches sur l'Histoire Naturelle de l'Indo-Chine orientale, par AUGUSTE PAVIE. Paris, 4to, 1904, pp. 311-331, pls. xvii & xviii.
123. —. On some species of the genus *Palæmon* Fabr., from Tahiti, Shanghai, New Guinea, and West Africa. Tr. Linn. Soc. London (2) Zool. ix (8), pp. 291-327, pls. xviii-xx.
124. —. Beschreibung einiger Brachyurer Krebse aus post-tertiären Schichten der Minahassa, Celebes. Samm. geol. Mus. Leiden (1) vii, pp. 254-278, pls. ix & x.
125. MARINE BIOLOGICAL ASSOCIATION. Plymouth Marine Invertebrate Fauna. Being Notes of the local distribution of species occurring in the neighbourhood. J. Mar. Biol. Ass. vii, pp. 155-298, 1 chart. [Crustacea, pp. 233-258.]
126. MARTIN, G. C. *Malacostraca* and *Cirripedia*. Maryland Geol. Surv. Miocene 1904, pp. 94-97, pls. xxxiii & xxxiv.
127. MAYER, P. Report on the Caprellidæ collected by Professor Herdman at Ceylon in 1902. In "Report to the Government of Ceylon on the Pearl Oyster Fisheries in the Gulf of Manaar," by W. A. Herdman. 4to, Royal Society, London, Part II, Supplementary Report xvi, pp. 223-227, 9 text-figg.
Quoted hereafter as "Rep. Ceylon Pearl Fisheries ii."
128. MAZIARSKI, STANISLAS. Contribution à l'étude de la relation du noyau avec le protoplasme cellulaire. Bull. Ac. Cracovie 1904, pp. 345-366, pls. vii & viii.
129. MEEK, ALEX. Animal Types. The Norway Lobster, *Nephrops norvegicus*. Newcastle upon Tyne, 1903, 8vo, 22 pp., 3 pls.
130. —. The Crab and Lobster Fisheries of Northumberland. Rep. Northumberland Sea Fisheries Committee for 1904, pp. 21-67, with 12 tables and charts.
MEINERT, FR. [See JENSEN (92).]
131. MEISSNER, WALERIAN. Notiz über das Plankton des Flusses Murgab (Merw, Turkestan). Zool. Anz. xxvii, pp. 648-650, 3 text-figg.
132. MICULICICH, MIROSLAV. Ein neuer Lernæopodide. Zool. Anz. xxviii, pp. 47-52, 3 text-figg.
133. MIKHAILOVSKY, G. Die Mediterran-Ablagerungen von Tomakowka (Gouvernement Jekaterinoslaw). [Russian, with German resumé.] Trudui geol. Kom. xiii, pp. 311, 4 pls. (1903).
134. *MOENKHAUS, W. J. An extra pair of appendages modified for copulatory purposes in *Cambarus viridis*. Indiana Univ. Bull. i, pp. 17 & 18, 2 figg.
135. MONACO, PRINCE ALBERT I^{er} DE. Sur la 5^e campagne scientifique de la Princesse Alice II. C.R. Ac. Sci. cxxxviii, pp. 1398-1400.
Reprinted, Bull. Mus. Monaco xiii, 4 pp.
136. MONTI, RINA. Limnologische Untersuchungen über einige italienische Alpenseen. Forschber. Plon xi, pp. 252-275, figg. in text.

137. MORGAN, T. H. Germ-Layers and Regeneration. Arch. Entwick-mech. xviii, pp. 261-264.
Remarks on REED (170).
138. MOSELEY, MARGERY. On the existence of an anterior rudimentary gill in *Astacus fluviatilis* Fabr. Quart. J. Mic. Sci. xlviii (3), pp. 359-366, pls. xxiii & xxiv.
See also LANKESTER (112).
139. MUNTHE, HENR. Om faunan i Vestgötaslättens yoldialera mellan Skara-Herrljunga och Venern. Geol. Foren. Stockholm Forh. xxiii, pp. 95-138, 1 map, 2 text-figg. (1901).
Reprinted as Sveriges geol. Unders. Afh., Ser. C., No. 187.
140. —. Stratigrafiska studier öfver Gotlands silurlager. Geol. Foren. Stockholm Forh. xxiv, pp. 221-273, text-figg. (1902).
Reprinted as Sveriges geol. Unders. Afh., Ser. C., No. 192.
141. MURIE, JAMES. Report on the Sea Fisheries and Fishing Industries of the Thames Estuary. Kent and Essex Sea Fisheries Committee, 8vo, London, 1903. [Crustacea, pp. 224-250, text-figg. and map.]
142. NAPOLI, FERDINANDO. Sopra alcuni caratteri e sulle abitudini del *Birgus latro* Fabr. Boll. Soc. zool. Ital. xiii, pp. 193-197.
143. NOBILI, G. Description d'une nouvelle espèce de *Pseudothelphusa* recueillie par M. F. Geay dans la Guyane française. Bull. Mus. Paris x, pp. 127-129, 1 text-fig.
144. —. Diagnoses préliminaires de vingt-huit espèces nouvelles de Stomatopodes et Décapodes Macroures de la mer Rouge. T. c. pp. 228-237.
145. NOBRE, AUGUSTO. Subsídios para o estudo da fauna marinha do norte de Portugal. Ann. Sci. nat. Porto viii, pp. 37-94, pl. i.
146. —. Subsídios para o estudo da fauna marinha do sul de Portugal. T. c. pp. 153-160.
147. NORMAN, A. M. British Isopoda of the families *Ægidæ*, *Cirolanidæ*, *Idoteidæ* and *Arcturidæ*. Ann. Nat. Hist. (7) xiv, pp. 430-448, pls. xii & xiii.
Includes also some Mediterranean and N. Atlantic spp. Some descriptions by T. R. R. STEBBING.
148. —. *Euthemisto compressa* at Redcar. Naturalist 1904, p. 159.
149. — & BRADY, G. S. British Land Isopoda. Second Supplement. Ann. Nat. Hist. (7) xiv, pp. 449 & 450.
150. NUSBAUM, JÓZEF. Nouveaux recherches sur l'embryologie des Isopodes (*Cymothoa*). [Polish.] Kosmos polski. xxviii, pp. 154-177, 2 pls. [Zool. Rec. 1903, No. 168.]
Abstract by H. HOYER, Zool. Zentrbl. xii, pp. 130-133.
151. OSTWALD, WOLFGANG. Experimentelle Untersuchungen über den Saisonpolymorphismus bei Daphniden. Arch. Entwickmech. xviii, pp. 415-451, 7 text-figg.
152. PATIENCE, ALEXANDER. Report on the Crustacea collected during the dredging cruise of the Millport Marine Biological Association's Steamer 'Mermiad' since May 1902. Rep. Brit. Ass. lxxiii, 1903 (1904), pp. 308-310.
153. PATTERSON, ROBERT. Amphipoda and Isopoda [from Sligo]. Irish Natural. xiii, p. 202.

154. PAULMIER, F. C. The Edible Crab. A preliminary study of its life history and economic relationships. [*Callinectes hastatus*.] Rep. N. York Mus. lv, pp. r 129-r 138 (1903).
155. PAVESI, P. Esquisse d'une faune Valdôtaine. Atti Mus. Milano xliii, pp. 191-260.
PAVIE, AUGUSTE. [See DE MAN (122).]
156. PEARSE, A. S. A new species of *Diaptomus* from Mexico. Amer. Natural. xxxviii, pp. 889-891, 4 text-figg.
157. PEARSON, JOSEPH. [Records of Copepoda.] Irish Natural. xiii, pp. 43 & 93.
158. PÉREZ, CH. Sur un Isopode parasite d'une Sacculine. Pr.-verb. Soc. Sci. Bordeaux 1902-1903, pp. 109 & 110.
159. —. Sur un Microsporidie parasite du *Carcinus mænas*. C.R. Soc. Biol. lvii, pp. 214 & 215.
160. PETCH, T. Shore collecting at Withernsea, &c. Naturalist 1904, pp. 19-22, also notes on pp. 158 & 285.
161. PORTER, CARLOS E. Materiales para la fauna carcinológica de Chile. III. Algunos datos sobre dos Parastácidos. Revist. chilena viii, pp. 254-261, pl. ix, text-figg. 24 & 25.
162. PUNNETT, R. C. Note on the proportion of the sexes in *Carcinus mænas*. P. Cambridge Soc. xii (4), pp. 293-296.
163. RANGE, PAUL. Das Diluvialgebiet von Lübeck und seine Dryastone, nebst einer vergleichenden Besprechung der Glazialpflanzen fuhrenden Ablagerungen überhaupt. Zeitschr. Naturw. lxxvi, pp. 161-272.
164. RANKIN, W. Decapoda [from Sligo]. Irish Natural. xiii, p. 202.
165. RATHBUN, MARY J. Decapod Crustaceans of the Northwest Coast of North America. Harriman Alaska Exped. x, pp. 1-210, pls. i-x, text-figg. 1-95.
Review by W. H. DALL, Science (n. s.) xx, pp. 462-464.
166. —. A preoccupied crab name. P. Soc. Washington xvii, p. 102.
167. —. Descriptions of three new species of American crabs. T. c. pp. 161 & 162.
168. —. Some changes in Crustacean nomenclature. T. c. pp. 169-172.
169. RAVN, J. P. J. The Tertiary Fauna at Kap Dalton in East-Greenland. Medd. Gronland xxix (1), pp. 93-140, pls. iii-v.
170. REED, MARGARET A. The regeneration of the first leg of the Crayfish. [Gen. & sp. not stated.] Arch. Entwickmech. xviii, pp. 307-316, pls. xvii & xviii, 3 text-figg.
171. RICHARD, JULES. Campagne scientifique du yacht "Princesse-Alice" en 1903. Observations sur la Sardine, sur le Plankton, sur les Cétacés, sur des filets nouveaux &c. &c. Avec résumé esperanto. Bull. Mus. Monaco xi, 29 pp.
172. RICHARDSON, HARRIET. Isopod Crustaceans of the Northwest Coast of North America. Harriman Alaska Exped. x, pp. 213-230, text-figg. 96-117.
Reprinted, see (174).
Review by W. H. DALL, Science (n. s.) xx, pp. 462-464.

173. [RICHARDSON, HARRIET]. Contributions to the Natural History of the Isopoda. P. U. S. Mus. xxvii, pp. 1-89, 92 text-figg.
Preface, pp. 1 & 2, Introduction, pp. 2-31. I. Isopoda collected in Japan in the year 1900 by the U. S. Fish Commission Steamer Albatross, and in the year 1881 by the U. S. S. Palos, pp. 32-45. II. Isopoda collected in Japan by Jordan and Snyder, pp. 46-51. III. Two new Cymothoids from the West Coast of Central America, pp. 51-53. IV. American Epicaridea, pp. 54-89.
174. —. Contributions to the Natural History of the Isopoda. (Second Part.) T.c. pp. 657-681, 39 text-figg.
v. Isopod Crustaceans of the Northwest Coast of North America, [Reprint of (172) above] pp. 657-671. VI. Isopods collected at the Hawaiian Islands by the U. S. Fish Commission Steamer Albatross, [Although it is not so stated, this part appears to be a reprint of No. 191 Zool. Rec. Crust. for 1903. The "new" genera and species are described without any reference to previous publication] pp. 671-681.
175. —. A reply to certain criticisms of Prof. Alfred Giard respecting the Bopyrids. C.R. Soc. Biol. lvi, pp. 856-858.
Reprinted, Science (n. s.) xx, pp. 51-53.
176. RICHET, CHARLES. De la thalassine pruritogène chez les crevettes (*Crangon*). C.R. Soc. Biol. lvi, pp. 777 & 778.
177. RIGGIO, G. Contributo alla Carcinologia del Mediterraneo. I. Nota sopra alquanti crostacei nel mare di Messina. Natural. Sicil. xvii, pp. 93-96, 117-120, 134-140, pl. ii [continued in 1905].
178. ROUX, JEAN. Décapodes d'eau douce de Célèbes (Genres *Caridina* et *Potamon*). Rev. Suisse Zool. xii, pp. 539-572, pl. ix, 2 text-figg.
179. RUEDEMANN, RUDOLF. Hudson river beds near Albany and their taxonomic equivalents. Rep. N. York Mus. liv (3), pp. 485-596, 2 pls. & text-figg. (1901).
180. SAMTER, M. & WELTNER, W. Biologische Eigentümlichkeiten der *Mysis relicta*, *Pallasiella quadrispinosa* und *Pontoporeia affinis*, erklärt aus ihrer eiszzeitlichen Entstehung. Zool. Anz. xxvii, pp. 676-694.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xi, pp. 688-691.
181. SARS, G. O. An account of the Crustacea of Norway. v. *Copepoda Harpacticoida*, Pts. iii & iv, pp. 29-56, pls. xvii-xxxii, and Pts. v & vi, pp. 57-80, pls. xxxiii-xlvi.
Quoted hereafter as Crust. Norway v.
182. —. On a remarkable new Chydorid *Saycia orbicularis* G. O. Sars, from Victoria, South Australia. Arch. Naturv. Christian. xxvi, No. 8, pp. 1-15, 1 pl.
183. —. Description of *Paracartia Grani* G. O. Sars, a peculiar Calanoid occurring in some of the Oyster-beds of Western Norway. Bergens Mus. Aarbog 1904, No. 4, pp. 1-16, pls. i-iv.
184. —. On a new (planktonic) species of the genus *Apherusa* [*Amphipoda*]. Publ. internat. expl. Mer, No. 10, 4 pp., 1 pl.
185. —. Pacifische Plankton-Crustaceen. (Ergebnisse einer Reise nach dem Pacific. SCHAUMSLAND, 1896-97.) I. Plankton aus Salzseen und Süßwasserteichen. Zool. Jahrb. Syst. xix, pp. 629-646, pls. xxxiii-xxxviii.
186. SAYCE, O. A. Pond-Life [from Mt. Buffalo]. Victorian Natural. xx, p. 151.

187. SCHARFF, R. F. Isopoda. In "Contributions to the Terrestrial Zoology of the Faroes" by NELSON ANNANDALE. P. Phys. Soc. Edinb. xv (2), pp. 154 & 155.
188. SCHERREN, HENRY. [Meristic variations in *Cancer pagurus* and *Astacus gammarus*.] P. Zool. Soc. London 1903, ii, pp. 195 & 196.
189. SCHNEE, PAUL. Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur Fauna der Insel Nauru. Zool. Jahrb. Syst. xx, pp. 387-412.
Krebse, det. Dr DOFLEIN, p. 406.
190. SCOTT, ANDREW. Some parasites found on fishes in the Irish Sea. P. Liverp. biol. Soc. xviii, pp. 113-125.
191. SCOTT, THOMAS. Notes on some rare and interesting marine Crustacea. Rep. Fish. Board Scotland xxii (3), pp. 242-261, pls. xiii-xv.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xii, p. 81.
192. —. On some parasites of fishes new to the Scottish Marine Fauna. T. c. pp. 275-280, pl. xvii.
— [See LINDSAY (115).]
193. SELIER, J. Sur le pouvoir amylolytique du sang des poissons et des crustacés. Trav. Lab. Arcachon vii, pp. 29-31.
194. —. Sur le pouvoir amylolytique du sang des poissons et des crustacés. C.R. Soc. Biol. lvi, pp. 261-263.
195. SENNA, A. *Thaumonectes*, un nuovo genere di Anfipodo Iperide del Mare Caraibico. Comunicazione preliminare. Bull. Soc. ent. Ital. xxxv, pp. 93-95, 1 fig. in text.
196. SKORIKOW, A. S. Contribution à l'histoire de la faune du lac Abraon (près de Novorossiisk) [Russian text]. Annuaire Mus. St. Petersb. ix, Nouvelles, pp. xix-xxii.
197. —. Ueber das Sommer-Plankton der Newa und aus einem Teile des Ladoga-Sees. Biol. Centrbl. xxiv, pp. 353-366 & 385-391, 1 text-fig.
198. SMITH, GEOFFREY. Metamorphosis and Life-history of *Gnathia maxillaris* [Isopoda]. Mt. Stat. Neapel xvi, pp. 469-479, pl. xviii.
199. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante [Russian text]. Zapiski Kiev. Obshch. xviii, pp. i-xiii, 1-487, 1-216, i-iv, 4 pls.
200. SPAULDING, E. G. The establishment of "Association by contiguity" in Hermit Crabs, *Eupagurus longicarpus*. Biol. Bull. vi, p. 325.
201. —. An establishment of association in hermit crabs, *Eupagurus longicarpus*. Journ. Compar. Neurology and Psychology xiv, pp. 49-61.
202. SPRAGUE, Miss. Note on the occurrence of certain Cladocera in the Edinburgh district. P. Phys. Soc. Edinb. xv (2), p. 111.
203. STAHL, ERNST. Die Schutzmittel der Flechten gegen Tierfrass. [Isopoda.] Denk. Ges. Jena xi (Festschr. Ernst Haeckel), pp. 355-376.
204. STAMM, R. H. Om musklernes befastelse til det ydre skelet hos Leddylene. Danske Selsk. Skr. (7) i (2), pp. 127-164, 2 pls. Résumé en Français.

205. STEAD, —. [Parasites of a whale.] P. Linn. Soc. N. S. Wales xxviii, pp. 944 & 945.
206. STEBBING, T. R. R. The Amphipoda collected during the voyages of the Willem Barents in the Arctic Seas in the years 1880-1884. Bijdr. Dierk. 17^e en 18^e Aflevering, pp. 1-48, pls. i-vii, 2 text-figg. The cover of this part bears the date "1893-1904" and was received in London in January 1905. Copies of Mr. Stebbing's paper were distributed many years ago. The title only is recorded in Zool. Rec. for 1895. Includes also description of a parasitic Isopod.
207. —. Marine Crustaceans. xii. Isopoda, with description of a new genus. In "The Fauna and Geography of the Maldive and Laccadive Archipelagoes," edited by J. Stanley Gardiner, Cambridge, 4to, vol. ii, pt. 3, pp. 699-721, pls. xlix-liii.
208. —. Gregarious Crustacea from Ceylon. Spolia Zeylan. ii, pp. 1-29, pls. i-vi & one unnumbered plate.
209. — & FOWLER, G. HERBERT. Biscayan Plankton collected during a cruise of H.M.S. "Research," 1900. Part. II. The Amphipoda and Cladocera, with notes on a larval Thyrostracan, by T. R. R. STEBBING, and an Appendix on their distribution by G. HERBERT FOWLER. Tr. Linn. Soc. London (2) Zool. x, pt. 2, pp. 13-54, pls. ii & iii, 7 text-figg.
— [See also NORMAN (147).]
210. STENTA, M. *Thynnicola ziegleri* Miculicich = *Brachiella thynni* Cuv. Zool. Anz. xxviii, pp. 345-347.
211. STEUER, ADOLF. Copepoden der Valdivia-Expedition. Zool. Anz. xxvii, pp. 593-598, 4 text-figg.
212. —. Mitteilungen aus der k. k. zoologischen Station in Triest. No. 9. Ueber zwei interessante Larvenformen aus dem Plankton des Triester Golfes. Op. cit. xxviii, pp. 228-230.
213. STINGELIN, THEODOR. Die familie der *Holopedidae*. Rev. Suisse Zool. xii, pp. 53-64, pl. 1.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xi, pp. 448 & 449.
214. —. Entomostraken gesammelt von Dr G. Hagmann im Mündungsgebiet des Amazonas. Zool. Jahrb. Syst. xx, pp. 575-590, pl. xx, 1 text-fig.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xii, p. 82.
215. —. Untersuchungen über die Cladocerenfauna von Hinterindien, Sumatra und Java, nebst einem Beitrage zur Cladoceren-Kenntnis der Hawaii-Inseln. (Reise von Dr Walter Volz.) Op. cit. xxi, pp. 327-370, pls. xi-xiii.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xii, pp. 245 & 246.
216. —. Ueber Entomostraken aus dem Mündungsgebiet des Amazonas. (Vorläufige Mitteilung.) Zool. Anz. xxviii, pp. 153 & 154.
217. STOLLER, JAMES H. Two new land Isopods. Rep. N. York Mus. liv (1), pp. 208-213, 2 text-figg. (1902).
218. THIELE, JOH. Beiträge zur Morphologie der Arguliden. Mt. Mus. Berlin ii, 4 Heft, pp. 1-51, pls. vi-ix.
219. —. Die Leptostraken. Wiss. Ergebn. deutschen Tiefsee-Exp. "Valdivia" viii, pp. 1-26, pls. i-iv.
220. —. Ueber eine von Herrn O. Neumann gefundene Phyllopoden-Art. Zool. Jahrb. Syst. xx, pp. 371-374, pl. xiii.
— [See GRÜNBERG, LUCAS & THIELE (70).]

221. THOMSON, GEORGE M. A new family of Crustacea Isopoda. Ann. Nat. Hist. (7) xiv, pp. 66-69, pl. i.
222. TOULA, FRANZ. Ueber eine neue Krabbe (*Cancer Bittneri* n. sp.) aus dem miocänen Sandsteine von Kalksburg bei Wien. Jahrb. geol. Reichsanst. liv, pp. 161-168, 5 figg. in text.
223. TRYBOM, FILIP. Two new species of the genus *Euconaxius*. Arkiv Zool. i, pp. 383-393, pls. xx & xxi.
224. ULMER, GEORG. Zur Fauna des Eppendorfer Moores bei Hamburg. Verh. Ver. Hamburg naturw. (3) xi, pp. 1-25, 1 map.
225. ULRICH, E. O. & BASSLER, R. S. *Ostracoda*. Maryland Geol. Surv., Miocene, 1904, pp. 98-130, pls. xxxv-xxxviii.
226. VALLENTIN, RUPERT. Notes on the Falkland Islands. Mem. Manchester Soc. xlviii (3), pp. 23-48, 3 pls.
 —. [See BROWNE & VALLENTIN (26).]
227. VIRÉ, ARMAND. Sur quelques expériences effectuées au laboratoire des Catacombes du Muséum d'Histoire naturelle. C.R. Ac. Sci. cxxxviii, pp. 706-708.
228. —. La faune souterraine du Puits de Padirac (Lot). T. c. pp. 826-828.
229. WALKER, ALFRED O. Report on the Amphipoda collected by Prof. Herdman at Ceylon in 1902. In "Report to the Government of Ceylon on the Pearl Oyster Fisheries in the Gulf of Manaar," by W. A. HERDMAN. 4to, Royal Society, London, Part II, Supplementary Report xvii, pp. 229 & 300, 8 plates.
 Quoted hereafter as "Rep. Ceylon Pearl Fisheries ii."
230. WALTHER, JOHANNES. Die fauna der Solnhofener Plattenkalke bionomisch betrachtet. Denk. Ges. Jena xi (Festschr. Ernst Haeckel), pp. 133-214, pl. viii, 21 text-figg.
231. WEIGELT, C. L'assainissement et le repeuplement des rivières. Mem. Cour. Ac. Belgique (8vo) lxiv, pp. 668, figg. in text.
232. WELCH, R. Rare Woodlice from Co. Dublin and Co. Down. Irish Natural. xiii, pp. 260 & 261.
 WELTNER, W. [See SAMTER & WELTNER (180).]
233. WENIG, JAROMIR. Ueber neue Sinnesorgane der Isopoden. SB. Bohmisch. Ges. 1903, xxxix, 12 pp., 1 pl.
234. WESENBERG-LUND, C. Studier over de Danske Sjøers Plankton..... med bistand af E. LARSEN. Dansk Ferskvands-Biologisk Laboratorium. Op. 5, pp. 223 + 44 (English resumé), and atlas of 8 maps, 10 plates & 9 plankton tables. 4to, Copenhagen, 1904.
 Abstract by F. ZSCHOKKE, Zool. Zentrbl. xi, pp. 680-687.
 —. [See JENSEN (92).]
235. WHEELER, WILLIAM MORTON. A Crustacean-eating Ant (*Leptogenys elongata* Buckley). Biol. Bull. vi, pp. 251-259, 1 text-fig.
236. WHITELEGGE, THOMAS. Scientific results of the trawling expedition of H.M.C.S. "Thetis" off the coast of New South Wales in February and March 1898. Part 7. Crustacea, Part iv. Isopoda, Part iii. Mem. Austral. Mus. iv, pp. 405-416, 16 figg. in text.

237. WILLIAMSON, H. CHAS. Contributions to the life-histories of the edible crab (*Cancer pagurus*) and of other decapod Crustacea:— Impregnation; Spawning; Casting; Distribution; Rate of Growth. Rep. Fish. Board Scotland xxii, pt. iii, pp. 100–140, pls. i–v. Abstract, Amer. Natural. xxxviii, pp. 897 & 898.
238. WILSON, CHARLES BRANCH. A new species of *Argulus*, with a more complete account of two species already described. P. U. S. Mus. xxvii, pp. 627–655, 38 text-figg.
239. *WITTEN, E. P. On the structural changes accompanying the Ecdysis of the Crab *Cancer pagurus*. Rep. Coll. Physic. Edinburgh ix, No. 19, 7 pp., 9 text-figg.
See Zool. Rec. 1903 (259).
240. WOLF, EUGEN. Beiträge zur Biologie der Süßwasser-Copepoden. Verh. Deutsch. zool. Ges. 1904, pp. 224–235.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xi, pp. 793–795.
241. WOLFENDEN, R. NORRIS. Notes on the Copepoda of the North Atlantic Sea and the Farøe Channel. J. Mar. Biol. Ass. vii, pp. 110–146, pl. ix, 1 text-fig.
242. WOLFF, MAX. Studien über Kutikulargenese und -Struktur und ihre Beziehungen zur Physiologie der Matrix. I. Das Ehippium von *Daphnia pulex*. Biol. Centrbl. xxiv, pp. 644–650, 697–722, & 761–767, 11 text-figg.
243. WOLTERECK, R. Zweite Mitteilung über die Hyperiden der Deutschen Tiefsee-Expedition. "*Physosoma*," ein neuer pelagischer Larventypus; nebst Bemerkungen zur Biologie von *Thaumatops* und *Phronima*. Zool. Anz. xxvii, pp. 553–563, 7 text-figg.
244. ——. Dritte Mitteilung über die Hyperiden der Deutschen Tiefsee-Expedition: *Sphæromimonectes Valdiviæ*, nov. gen., nov. spec. Mit ergänzenden Bemerkungen zur Biologie von *Phronima* und *Mimonectes*. T. c. pp. 621–627, 4 text-figg.
245. ——. Erste Notiz über die Amphipoden der Deutschen Südpolar-Expedition; *Sphæromimonectes Gaussi*, nov. spec. (Mit einer tabellarischen Übersicht der Familie). T. c. pp. 627–629.
246. YAKHONTOV, GH. Communication de l'excursion sur le lac Baical, faite en été de l'année 1902. [Russian text.] Protok. Kazan. Univ. 1902–3, No. 212, 11 pp.
247. YERKES, ROBERT MEARNES. Reactions of *Daphnia pulex* to light and heat. Mark Anniversary Volume (4to, New York, 1903), pp. 359–377, 2 figg. in text.
248. *—— & HUGGINS, GURRY. E. Habit formation in the Crawfish *Cambarus affinis*. Harvard Psychological Studies i, pp. 565–577, 4 figg., 1902.
Abstract by A. PÜTTER, Zool. Zentrbl. xi, pp. 198–200.
249. ZACHARIAS, OTTO. Ueber die Komposition des planktons in thüringischen, sächsischen und schlesischen Teichgewässern. Forschber. Plon xi, pp. 181–251, 7 text-figg.
- ZEDERBAUER, E. [See BREHM & ZEDERBAUER (25).]
250. ZIMMER, CARL. Die arktischen Schizopoden. In RÖMER & SCHAUDINN'S Fauna Arctica iii (3), pp. 415–492, 172 text-figg.
251. ——. *Amphionides valdiviæ*, n. g., n. sp. Zool. Anz. xxviii, pp. 225–228.

252. ZOGRAF, NICOLAUS VON. Das unpaare Auge, die Frontalorgane und das Nackenorgan einiger Branchiopoden. 4to, Berlin, 1904, 44 pp., 3 pls. & 3 text-figg.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xi, pp. 729-734.
253. ZYKOFF, W. Ueber das Plankton des Flusses Seim. Zool. Anz. xxvii, pp. 214 & 215.
254. —. Das Plankton des Seliger Sees. T. c. pp. 388-394.
255. —. Bemerkung über *Laophonte mohammed* Rich. Op. cit. xxviii, pp. 246-249.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xii, pp. 82 & 83.
256. —. Zur Crustaceenfauna der Insel Kolgujev. T. c. pp. 337-345, 2 figg.
Abstract by F. ZSCHOKKE, Zool. Zentrbl. xii, p. 83.

II. SUBJECT-INDEX.

1. MORPHOLOGY.

Morphology of Crustacea; LANKESTER (111): of *Malacostraca*; CALMAN (32): of *Isopoda*; RICHARDSON (173): of *Phyllocarida*; THIELE (219): of *Branchiura*; THIELE (218): of freshwater *Ostracoda*; JENSEN (92): of *Cirripedia*; GRUVEL (71).

External and internal anatomy of *Nephrops*; MEEK (129): of Stomatopod larvæ; JURICH (97): of *Gammarus*; CUSSANS (50): of *Saycia* (*Cladocera*); SARS (182): of *Argulus*; WILSON (238): of *Cirripedia*; GRUVEL (72, 74 & 75): of *Pæcilasma* (*Cirripedia*); HOFFENDAHL (86): of *Alcippe* (*Cirripedia*); GENTHE (65).

Segmentation of body in *Decapoda*, *Euphausiacea* and *Anaspides*; CALMAN (32).

Structure of copulatory appendages of *Cancer pagurus*; WILLIAMSON (237).

Rudimentary gill in *Astacus fluviatilis*; MOSELEY (138), LANKESTER (112).

Structure of digestive apparatus in *Astacus*; JORDAN (95).

Morphology of excretory organs in *Decapoda*, *Cumacea*, *Isopoda*, *Amphipoda*, *Cladocera*; LOŠKO (118): Maxillary- ("shell-") gland of *Stomatopoda*; CALMAN (32).

Structure of eyes and other sense-organs in deep-sea *Brachyura*; DOFLEIN (53): Unpaired eye, frontal organs and "Nackenorgan" in *Branchiopoda*; ZOGRAF (252): Supposed statocysts in Terrestrial *Isopoda*; WENIG (233).

Structure and arrangement of chromatophores in *Decapoda* and *Schizopoda*; KEEBLE & GAMBLE (101).

Attachment of muscles to exoskeleton in Crustacea; STAMM (204).

Histology of alimentary system in *Palinurus*; GUIEYSSE (77): of digestive glands of *Cymothoa* (*Isopoda*); MAZIARSKI (128).

Histology of heart in *Leptostraca*, *Isopoda*, *Amphipoda*, *Cumacea*, *Schizopoda*, *Stomatopoda*; GADZIKIEWICZ (61): in *Decapoda*; GADZIKIEWICZ (62).

2. PHYSIOLOGY.

Physiology of Crayfish; LATTER (113).

Physiology of digestion in *Astacus*; JORDAN (94 & 95).

Presence of "thalassine" (a toxic substance) in shrimps (*Crangon*); RICHET (176): Hæmocyanin in blood of *Decapoda*; ROBERT (104): Amyolytic ferment in blood of Crustacea; SELIER (193 & 194).

Phagocytic cells in *Amphipoda*; BRUNTZ (29 & 30).

Physiology of vision in deep-sea *Brachyura*; DOFLEIN (53).

Colour-Physiology of *Decapoda* and *Schizopoda*; KEEBLE & GAMBLE (101): Presence of mobile fat in chromatophores of *Hippolyte*; KEEBLE & GAMBLE (102).

Toxic property of distilled water for fresh-water *Gammarus*; BULLOT (31).

Reactions of *Daphnia* to light and heat; YERKES (247).

Effects of light and darkness on *Amphipoda* and *Isopoda*; VIRÉ (227).

Habit formation in *Cambarus*; YERKES & HUGGINS (248): Correlation of sensations in *Eupagurus*; BOHN (15): Experiments on "association" and memory in *Eupagurus*; SPAULDING (200) & (201).

Structural changes accompanying ecdysis in *Cancer*; WITTEN (239).

3. REPRODUCTION and DEVELOPMENT.

Reproduction and development of *Gammarus*; CUSSANS (50): of *Isopoda*; RICHARDSON (173): of *Cirripedia*; GRUVEL (71).

Reproductive cycle of *Callinectes hastatus*; PAULMIER (154): of *Cladocera* and *Copepoda*; EKMAN (56): of freshwater *Copepoda*; WOLF (240).

Breeding habits of *Cancer pagurus* and other *Decapoda*, impregnation, spawning, attachment of eggs; WILLIAMSON (237): Breeding habits of *Cambarus*; HARRIS (80): Breeding habits, young stages &c. of *Cambarus affinis*; ANDREWS (5): Copulatory appendages in *Cambarus*; MOENKHAUS (134).

Breeding habits of freshwater *Ostracoda*; JENSEN (92).

Proportion of sexes in *Carcinus mænas*; PUNNETT (162): in *Nephrops*; MCINTOSH (119).

Maturation divisions in testis of lobster; LABBÉ (107): Spermatogenesis in *Decapoda*; LABBÉ (109): Spermatozoa of *Cambarus* and *Astacus*; ANDREWS (6).

Oogenesis in *Cirripedia*; GRUVEL (73).

Fertilisation in Crustacea; LABBÉ (108).

Eggs and larval stages of *Argulus*; WILSON (238).

Formation and histology of the ephippium in *Daphnia*; WOLFF (242).

Embryology of *Cymothoa (Isopoda)*; NUSBAUM, abstract by HOYER (150).

Early stages of *Gammarus*, segmentation, formation of germ-layers; HEIDECHE (82): Segmentation of egg and origin of germinal layers in *Sacculina*; ABRIC (1).

Metamorphosis and life-history of *Gnathia maxillaris (Isopoda)*; SMITH (198).

Larvæ of *Stomatopoda*; JURICH (97): of *Thaumatops (Amphipoda, Hyperiidea)*; WOLTERECK (243): of some parasitic *Copepoda*; GADD (60): of *Pacilasma (Cirripedia)*; HOFFENDAHL (86): of *Cirripedia, Apoda*; STEUER (212).

Post-larval development of *Cancer pagurus* and *Carcinus mænas*; WILLIAMSON (237): Young (post-larval) stages of *Platymaia* and other deep-sea crabs; DOFLEIN (53).

Development and inheritance of chromatophore-system in *Decapoda* and *Schizopoda*; KEEBLE & GAMBLE (101).

4. AUTOTOMY and REGENERATION.

Regeneration in *Alpheus*; BRUES (28).

Regeneration of first leg of Crayfish [genus and species not stated], origin of muscles from ectoderm, production of double legs &c.; REED (170), MORGAN (137).

Eye replaced by antenna-like organ (natural heteromorphic regeneration) in *Palinurus*; ARIOLA (11).

5. BIONOMICS.

a. General.

Bionomics, habits &c.: of deep-sea *Brachyura*; DOFLEIN (53): of *Birgus latro*; NAPOLI (142): of *Cambarus uhleri*; HAY (81): of *Astacus*; LATTER (113): of *Isopoda*; RICHARDSON (173): of *Niphargus* and *Cæcosphæroma*; GAL (63): Alpine and Arctic *Phyllopoda*, *Cladocera* and *Copepoda*, conditions of life &c.; EKMAN (56): Habits of *Mysis relicta*, *Pallasiella quadrispinosa* and *Pontoporeia affinis* referred to their supposed origin in the Glacial Period; SAMTER & WELTNER (180): of *Gammarus pulex*; CUSSANS (50): of deep-sea Hyperid *Amphipoda*; WOLTERECK (243): of *Saycia* (*Cladocera*); SARS (182): of freshwater *Copepoda*; WOLF (240): of freshwater *Ostracoda*; JENSEN (92): of *Cirripedia*; GRUVEL (71): of *Alcipe*; GENTHE (65).

General notes on *Gammaridae* of Lake Baikal; KOROTNEFF (106).

Ecdysis, rate of growth, habitats, migrations, of *Cancer pagurus*; WILLIAMSON (237).

Seasonal cycle of freshwater *Cladocera* and *Copepoda*; WESENBERG-LUND (234): Seasonal distribution of *Cladocera* in Norfolk; GURNEY (78).

Gregarious Crustacea from Ceylon; STEBBING (208).

Function of antennules in *Albunea* and *Lepidopa*; BENEDICT (14).

Oniscus feeding on lichens; STAHL (203).

Podon (*Cladocera*) attacking post-larval fish; SCOTT (192).

Ant (*Leptogenys*) preying upon terrestrial *Isopoda*; WHEELER (235).

b. Habitats.

Habitats of *Cambarus*; HARRIS (80).

Amphibious habits of *Canthocamptus subterraneus* (*Copepoda*); CARL (35).

Munidopsis polymorpha in a cave on the Island of Lanzarote; CALMAN (33).

Occurrence of *Paracartia* under peculiar physical conditions in oyster beds of W. Norway; SARS (183).

Salt lakes, *Phyllopoda*, *Cladocera*, *Ostracoda*, *Copepoda*; ENTZ (57): Salt lake, Madagascar, Amphipod; COUTIÈRE (47).

Brackish water Crustacea; GURNEY (78).

Subterranean Crustacea; ALZONA (4), CARL (35), CHOBOUT (41), FLORENTIN (58), GAL (63), GROCHOWSKI (69), VIRÉ (227 & 228): *Niphargus* in deep water of lakes; KANE (98): *Cambarus*; HARRIS (80).

Plankton, Marine; ANON (9), BROWNE & VALLENTIN (26), CLEVE (43), SARS (184), STEBBING & FOWLER (209), WOLFENDEN (241).

Plankton, Freshwater; BREHM & ZEDERBAUER (25), LINDER (114), MONTI (136), SKORIKOW (197), WESENBERG-LUND (234), ZACHARIAS (249).

c. Symbiosis and Parasitism.

Commensalism of *Arete* (*Caridea*) with *Heterocentrotus* (*Echinoidea*); COUTIÈRE (46).

Parasitic Crustacea: on a Whale, *Cirripedia* and *Cyamidae*, STEAD (205); on Fish, *Isopoda*, RICHARDSON (173), *Copepoda*, BAUDOUIN (13), MICULICICH (132), SCOTT (192), *Copepoda* and *Branchiura*, A. SCOTT (190), GADD (60), *Branchiura*, THIELE (218), WILSON (238); on Crustacea, *Epicaridea*, RICHARDSON (173), STEBBING (206) & (207), PATIENCE (152), *Copepoda*, HANSEN (79), SCOTT (191); On Echinoderma, Gall-forming Copepod on an Echinoid, BONNIER (17).

Tertiary parasitism of *Eumetor* (*Epicaridea*) on *Sacculina*—*Pinnotheres*—*Spondylus*; PÉREZ (158).

Parasites of Crustacea: *Epicaridea* and other Crustacea, see above; Microsporidian parasite in *Carcinus maenas*; PÉREZ (159).

6. VARIATION and ABNORMALITIES. [See also 4, above.]

Statistical investigation of variation in *Atyaephyra*; BROŽEK (27).

Mutations in *Atyidae*; BOUVIER (19).

Variation in *Cladocera*; EKMAN (56), LINDER (114): Local variations of *Holopedium*; STINGELIN (213).

Colour-variety of *Astacus*; BOUVIER (21).

Case of "reversion" in *Scalpellum*; HOEK (85).

Variation in number of ♂ genital apertures in *Nephrops*; MCINTOSH (119).

Dimorphism in *Gnathia maxillaris* (*Isopoda*); SMITH (198).

Experimental evidence as to direct influence of temperature on variation of *Cladocera*; OSTWALD (151).

Abnormality in leg of *Cambarus*; ANDREWS (7): Abnormal chelæ of *Cancer* and *Homarus*; SCHERREN (188).

7. PHYLOGENY and CLASSIFICATION.

Systematic relationships of Crustacea; LANKESTER (111): of *Phyllocarida*; THIELE (219): of *Branchiura*; THIELE (218).

Classification of *Malacostraca*; CALMAN (32), GROBBEN (68): of *Cirripedia*; GRUVEL (71).

Relationship of *Pollicipes* and *Scalpellum*; HOEK (85).

Generic and sexual characters in *Sphæromida* (*Isopoda*); HOLMES (88).

Systematic importance of chromatophore-system in *Decapoda* and *Schizopoda* (incl. *Anaspides*); KEEBLE & GAMBLE (101).

8. MISCELLANEOUS.

Bibliography for 1895–1897; GRÜNBERG, LUCAS & THIELE (70).

General account of Crustacea; GROBBEN (68).

Guide to dissection of Crayfish; ANGLAS (8).

Size of *Macrocheira*; ANON (10).

Nomenclature: GIARD (66), RATHBUN (166 & 168), RICHARDSON (175).

Economic:—Crustacea as food of freshwater fish; GUCCINI (76): Problems connected with shrimp (*Crangon vulgaris*) fishery; HERDMAN (83): Artificial hatching of lobsters; HERDMAN (84): Crab and Lobster fisheries of Northumberland; MEEK (130): Edible Crustacea of Thames Estuary; MURIE (141): Crab fishery of New York; PAULMIER (154): Crustacea in relation to purification and restocking of rivers; WEIGELT (231): Plankton investigations in relation to fish culture; ZACHARIAS (249).

III. DISTRIBUTION.

1. GEOGRAPHICAL.

Distribution of *Isopoda*; RICHARDSON (173): of *Argulidae*; THIELE (218).

A. LAND and FRESH-WATER (including SALT LAKES).

Distribution of *Uridina* and *Potamon* (*Decapoda*); ROUX (178): of *Laophonte* (*Copepoda*); ZYKOFF (255).

New localities for some Land and Freshwater *Brachyura*; DOFLEIN (53): for *Atyidae* (*Caridea*); BOUVIER (20).

a. *Palearctic Region.*

Alpine *Phyllopoda*, *Cladocera*, *Copepoda*, distribution, relation to Glacial Period &c.; EKMAN (56).

Faroe Is., terrestrial *Isopoda*; SCHARFF (187).

British Islands: terrestrial *Isopoda*; NORMAN & BRADY (149): *Ostracoda*; BRADY (22).

Scotland: Edinburgh, *Cladocera*; SPRAGUE (202).

England: East Norfolk, fresh- and brackish-water *Cladocera*, *Copepoda*, *Cirripedia*, *Isopoda*, *Amphipoda*, *Schizopoda*, *Decapoda*; GURNEY (78): Cambridgeshire, *Cladocera* and *Ostracoda*; CUNNINGTON (48): Kent, *Niphargus* (*Amphipoda*); KANE (98).

Ireland: Co. Dublin and Co. Down, *Isopoda*; WELCH (232): Sligo, *Amphipoda* and *Isopoda*; PATTERSON (153): Sligo, *Copepoda* and *Cladocera*; KANE (100): Lough Mask, *Niphargus* (*Amphipoda*); KANE (98): Lough Corrib, *Mysis relicta*; KANE (99).

France: Sainte-Reine, Moselle, *Isopoda*; FLORENTIN (58): Caves of Padirac, Lot, *Copepoda*, *Amphipoda*, *Isopoda*; VIRÉ (228): Tharaut, Gard, cave *Isopoda*; CHOBOUT (41).

Germany: Thuringia, Saxony and Schleswig, *Copepoda*, *Cladocera*, *Ostracoda*; ZACHARIAS (249): Eppendorf moor, near Hamburg, *Isopoda*, *Amphipoda*, *Ostracoda*, *Copepoda*; ULMER (224): Havelsee, *Cladocera*; KEILHACK (103): S. Germany and Tyrol, *Isopoda*, n. spp.; KOCH (105).

Switzerland: Lac de Bret, *Cladocera*, *Copepoda*; LINDER (114).

Italy: subterranean *Amphipoda* and *Isopoda*; ALZONA (4): North Italy, Alpine lakes, *Copepoda*, *Ostracoda*, *Cladocera*; MONTI (136): Vallée d'Aoste, *Copepoda*, *Ostracoda*, *Cladocera*; PAVESI (155).

Austria: Galicia, *Isopoda*; DYDUCH (55): S. Tyrol, *Copepoda*, *Cladocera*, n. sp.; BREHM & ZEDERBAUER (25).

Scutari Lake, Albania, *Caridea*; BROŽEK (27).

Denmark: *Ostracoda*; JENSEN (92): *Cladocera*, *Copepoda*; WESENBERG-LUND (234).

Mountains of North Sweden, *Phyllopoda*, *Cladocera*, *Copepoda*; EKMAN (56).

Russia: Finland, parasitic *Copepoda* n. spp. and *Branchiura*; GADD (60): R. Neva and Lake Ladoga, *Copepoda* and *Cladocera*; SKORIKOW (197): Kolgujev I., *Schizopoda*, *Amphipoda*, *Phyllopoda*, *Cladocera*, *Copepoda*; ZYKOFF (256): Seim River, *Cladocera*, *Copepoda*; ZYKOFF (253): Seliger See, *Cladocera*, *Copepoda*; ZYKOFF (254): Crimea, *Copepoda* n. sp., *Isopoda* n. sp.; CARL (35): Lake Abraou, Caucasus, Crustacea; SKORIKOW (196): Ponto-Aralo-Caspian region, Crustacea, *Amphipoda* n. spp.; SOWINSKY (199).

Siberia: Lake Baikal, Crustacea; KOROTNEFF (106), YAKHONTOV (246).

Turkestan: *Copepoda* n. spp., *Cladocera* n. spp., *Phyllopoda*, *Ostracoda* n. spp.; DADAY (51): Murgali River, *Cladocera*, *Copepoda*; MEISSNER (131).

China: *Caridea* n. sp.; BOUVIER (20): South Hu-peh, *Palaemon*; DE MAN (123).

Syria, *Caridea* n. sp.; BOUVIER (20).

b. *Oriental Region.*

Ceylon, *Caridea* n. sp.; BOUVIER (20).

Minikoi, terrestrial *Isopoda*; STEBBING (207).

Sumatra, Java, Singapore, Bangkok, Saigon, *Cladocera* n. spp.; STINGELIN (215).

Cochin China, *Decapoda*, *Brachyura* n. spp.; DE MAN (122).
Celebes, *Caridina* n. spp., *Potamon* n. varr.; ROUX (178).

c. *Ethiopian Region.*

W. Africa: *Caridea* n. spp.; BOUVIER (20): Liberia, Ashantee, Camaroons, Congo, Benguella, *Palæmon*; DE MAN (123).

Galla country, *Phyllopoda* n. sp.; THIELE (220).

Natal, *Ostracoda* n. spp., *Copepoda* n. spp., *Cladocera* n. sp.; BRADY (22).

Madagascar, *Caridea* n. spp.; BOUVIER (20): Salt lake Tsimanampetsoa, Mahafaly region, *Amphipoda* n. sp.; COUTIÈRE (47).

Seychelles, *Caridea* n. sp.; BOUVIER (20).

d. *Neurctic Region.*

N. and Centr. America, *Epicaridea* n. spp.; RICHARDSON (173):
N. America, *Cambarus*, summary of distrib. of all spp.; HARRIS (80).

North West America: *Amphipoda*; HOLMES (87): *Isopoda* n. spp.; RICHARDSON (172).

New York State, *Oniscoidea* n. spp.; STOLLER (217).

Georgia, *Branchiura* n. sp.; WILSON (238).

Texas, *Branchiura* n. sp.; THIELE (218).

Mexico, *Copepoda* n. sp.; PEARSE (156).

California, *Brachyura*, *Isopoda*; HOLMES (89).

e. *Neotropical Region.*

French Guiana, *Pseudothelphusa* n. sp.; NOBILI (143).

Amazons: *Cladocera* n. sp.; STINGELIN (213): *Cladocera* n. spp., *Copepoda*; STINGELIN (214): *Cladocera* and *Copepoda*; STINGELIN (216).

Lake Titicaca, *Amphipoda* n. sp.; CHEVREUX (40).

Chile, *Macrura*; PORTER (161).

f. *Australian Region.* (Including *Pacific Islands*.)

New Guinea, Dinawa, Owen Stanley Range, *Palæmon*; DE MAN (123).

Australia: Mt. Buffalo, Victoria, *Isopoda* and *Amphipoda*; SAYCE (186): Melbourne, *Cladocera* n. sp.; SARS (182).

New Zealand: list of Crustacea; HUTTON (91): *Cladocera* n. spp., *Copepoda* n. spp.; SARS (185).

Marshall Is., *Decapoda* and *Isopoda*; DOFLEIN in SCHNEE (189).

Hawaiian Islands: *Cladocera*; STINGELIN (215): Honolulu, Molokai, Laysan, *Phyllopoda*, *Copepoda* n. sp.; SARS (185).

Tahiti, *Palæmon*; DE MAN (123).

B. MARINE.

Distribution of Marine Crustacea; MCINTOSH (120): of deep-sea *Brachyura*; DOFLEIN (53): of *Phyllocarida*, with new localities for many spp.; THIELE (219): of *Cirripedia*; GRUVEL (71).

Distribution of larvæ of Crustacea by marine currents; GARDINER (64).

"Valdivia" Expedition Stations 74 and 236 [locality not stated], *Copepoda* n. spp.; STEUER (211): "Valdivia" Expedition [locality not stated, probably Atlantic], *Amphipoda* n. sp.; WOLTERECK (244).

a. *Atlantic and Mediterranean.*

Atlantic: *Decapoda* (larvæ) n. sp.; ZIMMER (251): *Stomatopoda* (larvæ) n. spp.; JURICH (97): *Schizopoda*, *Copepoda*, *Cladocera*; CLEVE (43): Atlantic, *Hyperidea* n. sp.; WOLTERECK (245).

N. Atlantic and Faroe Channel, *Copepoda* n. spp.; WOLFENDEN (241): Faroe channel, *Isopoda* n. sp.; NORMAN (147).

Norway: *Copepoda*; SARS (181): *Copepoda* n. sp.; SARS (183).

Skagerak, *Amphipoda* n. sp.; SARS (184): Skagerak and Kosterfjord, *Macrura* n. spp.; TRYBOM (223).

North Sea and Baltic, Plankton Crustacea; ANON. (9).

British Seas: *Copepoda* and *Ostracoda* n. sp.; BRADY (23): *Schizopoda* n. sp.; KEEBLE & GAMBLE (101): *Isopoda*; NORMAN (147).

Scotland: *Cumacea*, *Isopoda*, *Amphipoda*, *Copepoda* n. spp.; SCOTT (191): Dornoch Firth, *Copepoda* n. sp.; SCOTT (192): Firths of Forth and Clyde, comparison of *Decapoda*, *Schizopoda* and *Copepoda*; SCOTT in LINDSAY (115): Firth of Clyde, *Decapoda*, *Schizopoda*, *Isopoda*, *Rhizocephala*; PATIENCE (152).

England: Yorkshire, *Decapoda*, *Schizopoda*, *Amphipoda*, *Isopoda*; PETCH (160): Yorkshire, *Amphipoda*; NORMAN (148): Thames Estuary, *Decapoda*; MURIE (141): Plymouth, Crustacea; MAR. BIOL. ASS. (125): Scilly Ids., Crustacea; BROWNE & VALLENTIN (26).

Ireland: Irish Sea, parasitic *Copepoda*; A. SCOTT (190): Larne Harbour, *Copepoda*; PEARSON (157): Sligo, *Decapoda*; RANKIN (164): Sligo, *Amphipoda*; PATTERSON (153).

Bay of Biscay: Crustacea; MONACO (135): *Decapoda*, *Schizopoda*, *Isopoda*, *Amphipoda*, *Copepoda*, *Ostracoda*; RICHARD (171): *Amphipoda* n. spp., *Cladocera*, *Cirripedia*; STEBBING & FOWLER (209): Vendée, *Copepoda* (? n. sp.); BAUDOUIN (13).

Portugal: *Copepoda*, *Cirripedia*, *Amphipoda*, *Tanaidacea*, *Isopoda* n. sp., *Stomatopoda*, *Schizopoda*, *Decapoda*; NOBRE (145) & (146): off coast of Portugal, *Isopoda* n. sp.; NORMAN (147).

Mediterranean: *Copepoda*, *Cladocera*, *Ostracoda*; CLEVE (43): *Decapoda*, *Schizopoda*, *Isopoda*, *Amphipoda*, *Ostracoda*, *Copepoda*, *Cladocera*; LO BIANCO (116): *Isopoda*; NORMAN (147): Messina, *Branchiura*, *Amphipoda*, *Isopoda*, *Schizopoda*, *Decapoda*; RIGGIO (177): Coast of Catania, *Decapoda*; MAGRI (121): Trieste, *Cirripedia* (larvæ) n. sp.; STEUER (212): Croatia, *Copepoda* n. sp.; MICULICH (132): Ponto-Aralo-Caspian region, Crustacea; SOWINSKY (199).

Canary Islands, Lanzarote, *Munidopsis polymorpha*; CALMAN (33).

W. Africa, *Brachyura* n. spp.; DOFLEIN (53).

Atlantic coast of N. America: *Alcippe* (*Cirripedia*); GENTHE (65): *Epicaridea* n. spp.; RICHARDSON (173).

Bermudas, *Isopoda* n. sp.; RICHARDSON (173).

Caribbean Sea, *Hyperidea* n. sp.; SENNA (195).

E. coast of S. America, *Epicaridea* n. spp.; RICHARDSON (173).

Falkland Ids., *Decapoda* and *Isopoda*; VALLENTIN (226).

b. *Indo-Pacific.*

E. Indian Seas, *Brachyura* n. spp.; DOFLEIN (53): Indian Ocean, *Stomatopoda* (larvæ) n. spp.; JURICH (97): *Decapoda* (larvæ) n. sp.; ZIMMER (251).

Red Sea, Gulf of Aden and Arabian Sea, *Copepoda* n. spp., *Cladocera*, *Ostracoda*; CLEVE (43): Red Sea, *Macrura* n. spp., *Stomatopoda* n. sp.; NOBILI (144).

E. Africa, *Brachyura* n. spp.; DOFLEIN (53): Zanzibar, *Stomatopoda* n. sp.; JURICH (97).

Agulhas Bank, *Brachyura* n. spp.; DOFLEIN in CHUN (41 A), DOFLEIN (53).

Maldive Ids., *Hippidea* n. sp., *Thalassinidea* n. sp., *Loricata*; BORRA-DAILE (18): Maldive and Laccadive Ids., *Isopoda* n. spp.; STEBBING (207).

India, distribution of sub-littoral genera of *Paguridae*; ALCOCK (2).

Ceylon: *Cunaceæ* n. spp.; CALMAN (34): *Caprellidae* n. sp.; MAYER (127): *Brachyura* n. sp., *Macrura*, *Tanaidacea* n. sp., *Isopoda* n. spp., *Amphipoda* n. spp.; STEBBING (208): *Amphipoda* n. spp.; WALKER (229).

Singapore, *Amphipoda* n. sp.; WALKER (229).

Near Jedan Ids. (S. of New Guinea), *Cirripedia* n. sp.; HOEK (85).

New South Wales, *Isopoda*; WHITELEGGE (236): South Australia, *Caridea* n. spp.; BAKER (12).

New Zealand: list of Crustacea; HUTTON (91): parasitic *Copepoda* n. spp.; HANSEN (79): *Cirripedia*, *Amphipoda*; STEAD (205): *Phyllocarida* n. spp.; THIELE (219): *Isopoda*; THOMSON (221).

Saghalien, *Caridea* n. sp.; BRAZHNIKOV (24).

Japan, *Isopoda* n. spp.; RICHARDSON (173).

Marshall Is., *Decapoda*; DOFLEIN in SCHNEE (189).

Samoa, *Hippidea* n. sp.; BENEDICT (14).

Gambier Ids., *Caridea*; COUTIÈRE (46).

N.W. America: *Decapoda* n. sp.; RATHBUN (165): *Amphipoda* n. spp.; HOLMES (87): *Isopoda* n. spp.; RICHARDSON (172): *Epicaridea* n. sp.; RICHARDSON (173).

California: *Hippidea* n. sp.; BENEDICT (14): *Isopoda* n. sp.; HOLMES (88): *Macrura* n. sp., *Amphipoda*, *Isopoda*; HOLMES (89).

W. coast of Centr. America, *Isopoda* n. spp.; RICHARDSON (173): Realejo, Nicaragua, *Brachyura* n. sp.; RATHBUN (167): Punta Arenas, Costa Rica, *Brachyura* n. sp.; RATHBUN (167).

Valparaiso, *Brachyura* n. sp.; RATHBUN (167).

c. *Arctic and Antarctic.*

Arctic *Schizopoda*, distrib. discussed; ZIMMER (250).

Arctic Ocean, *Amphipoda* n. spp., *Isopoda*; STEBBING (206).

Kerguelen, *Phyllocarida* n. sp.; THIELE (219).

2. GEOLOGICAL.

Post-tertiary, Celebes, *Brachyura* n. spp.; DE MAN (124): Sweden, *Ostracoda*; MUNTKE (139): Glacial beds, Lübeck, *Phyllopoda*, *Cladocera*, *Ostracoda*; RANGE (163).

Tertiary (?), Bouzigues, Hérault, *Isopoda* n. sp.; DOLLFUS (54): Tertiary, E. Greenland, *Macrura* n. sp., *Brachyura* n. sp.; RAYN (169): Australia, *Cirripedia*: DENNANT & KITSON (52): Upper Miocene, Haguineau, *Cirripedia*, *Brachyura*; COUFFON (45): Miocene, Kalksburg near Vienna, *Brachyura* n. sp.; TOULA (222): Maryland, *Ostracoda* n. spp.; ULRICH & BASSLER (225): Maryland, *Cyclometopa* and *Cirripedia*; MARTIN (126): Massachusetts, *Cirripedia*; CUSHMAN (49): Mediterranean stage, S. Russia, *Cirripedia*; MIKHAILOVSKY (133): Eocene, Peschici, Italy, *Cyclometopa* n. sp.; CHECCHIA-RISPOLI (39).

Cretaceous, Scarborough, *Ostracoda*, *Cirripedia*; FOX-STRANGWAYS (59): East Pondoland, S. Africa, *Ostracoda* n. spp.; CHAPMAN (36): Upper Cretaceous, Belfast, *Callianassa*; LAMPLUGH (110): Chalk, England, *Brachyura*, *Macrura*, *Cirripedia*, *Ostracoda*; JUKES BROWN (96): Surrey, *Cirripedia* and *Decapoda*; HOLMES (90): Greensand, Sainte Ménéhould, *Hoploparia*; COLLET (44).

Jurassic, Solnhofen Limestones, *Isopoda*, *Stomatopoda*, *Decapoda*, "bionomisch betrachtet"; WALTHER (230): Oolite, Scarborough, *Decapoda*,

Cirripedia; FOX-STRANGWAYS (59): Lower Oolite, Geraldton, W. Australia, *Ostracoda* n. spp.; CHAPMAN (37).

Palæozoic, Niagara Region, *Ostracoda* and *Phyllocarida*; GRABAU (67).

Carboniferous, Belfast, *Ostracoda*; LAMPLUGH (110): Coal Measures, Lancashire, Crustacea; BOLTON (16): Ohio, *Phyllopoda* n. sp., CLARKE (42).

Devonian, New York, *Phyllocarida* and *Phyllopoda*; CLARKE (42).

Silurian, Gothland, *Ostracoda*, *Phyllocarida*; MUNTHE (140): New York State, *Ostracoda* n. sp., *Cirripedia* n. sp.; RUEDEMANN (179): Salina, New York, *Phyllocarida* n. spp.; CLARKE (42): Silurian, Victoria, *Ostracoda* n. spp., *Phyllocarida* n. spp.; CHAPMAN (38).

Ordovician (?), Canada, *Ostracoda* n. sp.; JONES (93).

IV. SYSTEMATIC.†

[In addition to papers quoted below, see ANON. (9), †BOLTON (16), GARDINER (64), GUCCINI (76), HUTTON (91), LABBÉ (108), LANKESTER (111), MCINTOSH (120), MONACO (135), SELLIER (194), SKORIKOW (196), STAMM (204), WEIGELT (231), YAKHONTOV (246).]

A. MALACOSTRACA.

Classification of *Malacostraca*:

Series *Leptostraca*.

Division *Phyllocarida* (Order, *Nebaliacea* n. nom.).

Series *Eumalacostraca*.

Divisions *Syncarida* (Order, *Anaspidacea* nov.), *Peracarida* n. nom. (Orders, *Mysidacea*, *Cumacea*, *Tanaidacea*, *Isopoda*, *Amphipoda*), *Eucarida* n. nom. (Orders, *Euphausiacea*, *Decapoda*), *Hoplocarida* n. nom. (Order, *Stomatopoda*),

with discussion of characters and diagnoses of series and divisions;

CALMAN, Ann. Nat. Hist. (7) xiii, pp. 144–158.

Malacostraca divided into Legions *Leptostraca*, *Thoracostraca*, *Stomatopoda*, *Anomostraca* nov. (for *Anaspides* &c.), *Arthrostraca*; GROBBEN, Claus' Lehrbuch, pp. 431–468.

1. DECAPODA.

[See also ANDREWS (6), BROWNE & VALLENTIN (26), †FOX-STRANGWAYS (59), GADZIKIEWICZ (62), †HOLMES (90), KEEBLE & GAMBLE (102), KOBERT (104), LABBÉ (109), SCOTT in LINDSAY (115), LO BIANCO (116), LOŠKO (118), MAGRI (121), MAR. BIOL. ASS. (125), MEEK (130), MURIE (141), NOBRE (145 & 146), PATIENCE (152), PETCH (160), RANKIN (164), RICHARD (171), DOFLEIN in SCHNEE (189), SELLIER (193), VALLENTIN (226), †WALTHER (230).]

Decapoda, attachment of eggs to parent; WILLIAMSON, Rep. Fish. Board Scotland xxii, pt. iii, p. 116.

a. BRACHYURA.

[See also †COUFFON (45), †JUKES-BROWNE (96), †MARTIN (126).]

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

OXYRHYNCHA.

- Anasimus rostratus*, p. 171, pl. x, fig. 4; RATHBUN, Harriman Alaska Exped. x.
- Cyrtomaia goodridgei*, pl. lix, fig. 1-1c; ALCOCK & MCARDLE, Illustr. Zool. Investigator: *C. suhmi*, p. 53, subsp. *typica*, p. 54, pl. xix, figg. 1 & 2, subsp. *platyceros* **n. subsp.**, p. 55, pl. xix, fig. 3, pl. xl, figg. 1-7, pl. xliii, fig. 4, pl. xlv, figg. 1-5; DOFLEIN, Brachyura "Valdivia."
- Daldorfia* **n. nom.** for *Parthenope* Leach, non Weber, type *horrida*, p. 171; RATHBUN, P. Soc. Washington xvii.
- Dasygyius tuberculatus*, p. 172, pl. x, figg. 3 & 3a, and text-fig. 92; RATHBUN, Harriman Alaska Exped. x.
- Erileptus spinosus*, p. 171, pl. x, fig. 1; RATHBUN, t. c.
- Hyastenus brevirostris*, S. of Sumatra, 614 metres, p. 85, pl. xxvii, figg. 13 & 14; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- Inachus antarcticus*, Agulhas Bank, 155 metres, p. 74, pl. xxviii, figg. 2 & 3; DOFLEIN, t. c. **n. sp.**
- Kempferia* [= *Macrocheira*] *kempferi*, size; ANON., Amer. Mus. J., pp. 25 & 60.
- Lambrus* synonym of *Parthenope*, p. 171; RATHBUN, P. Soc. Washington xvii.
- L. macrocheles*, p. 87, pl. xxxii, fig. 5; DOFLEIN, Brachyura "Valdivia."
- Mamaia* **n. nom.** for [*Maia*] *squinado*, p. 2; STEBBING, Spolia Zeylan. ii.
- Oregonia bifurca*, p. 171, pl. vi, fig. 5; RATHBUN, Harriman Alaska Exped. x.
- Parthenope* Weber, 1795 (= *Lambrus* Leach, 1815), type *longimana* Linn., p. 170; RATHBUN, P. Soc. Washington xvii (see *Daldorfia*).
- Physachæus ctenurus*, p. 71, pl. xxiv, figg. 1-4, pl. xlii, figg. 1-7, pl. xlviii, DOFLEIN, Brachyura "Valdivia."
- Platymaia wyville-thomsoni*, p. 59, pls. ii, xx, xxii, xxiii, xxxix, xliii, figg. 5 & 6, pl. i, figg. 2, 5 & 6, text-figg. 2-5; DOFLEIN, t. c.
- Pleistacantha moseleyi*, p. 76, pl. xxiv, figg. 5 & 6, pls. xxv & xxvi; DOFLEIN, t. c.
- Podochela hemphillii*, p. 171, pl. x, fig. 2; RATHBUN, Harriman Alaska Exped. x.
- Pugettia dalli*, p. 173, pl. ii, figg. 1 & 1a; RATHBUN, t. c.
- Scyramathia hertwigi*, Agulhas Bank, fig. on p. 497; DOFLEIN in CHUN, "Aus den Tiefen des Weltmeeres," 1900, **n. sp.**
- S. hertwigi*, p. 81, pl. xxvii, figg. 1-7, pl. xxviii, fig. 1, *pulchra*, p. 84, pl. xxvii, fig. 12, *rivers-andersoni*, p. 84, pl. xxvii, figg. 8-11, *globulifera*, p. 85; DOFLEIN, Brachyura "Valdivia."
- Stenorhynchus falcifer*, p. 70, text-fig. 6; DOFLEIN, t. c.

CYCLOMETOPA.

- Actæa hirsutissima*, p. 102, pl. xxxii, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- Alpheus* Weber, 1795, synonym of *Cancer*, p. 170; RATHBUN, P. Soc. Washington xvii.
- Benthochascon hemingi*, p. 90, pl. xxix, figg. 1 & 2, pl. xli, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- Callinectes hastatus*, life history, fishery &c.; PAULMIER, Rep. N. York Mus. lv, pp. 129-138.
- Cancer amphictus*, p. 175, pl. vi, fig. 3, *anthonyi*, p. 176, pl. vi, fig. 2, *jordanii*, p. 176, pl. vi, fig. 4, *oregonensis*, p. 178, pl. vii, fig. 1; RATHBUN, Harriman Alaska Exped. x: *C. pagurus*, abnormal chelæ, p. 195;

- SCHERREN, P. Zool. Soc. London 1903, ii: *C. pagurus*, breeding habits, post-larval development, rate of growth &c.; WILLIAMSON, Rep. Fish. Board Scotland xxii, pl. iii, pp. 100-140, pls. i-v: *C. pagurus*, ecdysis; WITTEN, Rep. Coll. Physic. Edinburgh ix, No. 19, 7 pp., 9 text-figg.
- +*C. bittneri*, Miocene, Vienna, p. 161, text-figg. 1-5; TOULA, Jahrb. geol. Reichsanst. liv, **n. sp.**
- Carcinus maenas*, microsporidian parasite; PÉREZ, C.R. Soc. Biol. lvii, pp. 214 & 215: proportions of sexes; PUNNETT, P. Cambridge Soc. xii (4), pp. 283-296: breeding habits, post-larval development &c.; WILLIAMSON, Rep. Fish. Board Scotland xxii, pt. iii, pp. 100-140, pls. i-v.
- Corystes* [see *Euryala*].
- Domecia glabra*, pl. liv, figg. 3 & 3a; ALCOCK & MCARDLE, Illustr. Zool. Investigator.
- Elliptodactylus n. g.* (*Portunidae*), p. 93, *rugosus*, mouth of Congo, p. 94, pl. xxx, figg. 1-3, pl. xxxii, fig. 7, text-figg. 7 & 8; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- Euryala* Weber (= *Corystes* Latr.), type *cassivelaunus*, p. 171; RATHBUN, P. Soc. Washington xvii.
- Geryon paulensis*, p. 531; DOFLEIN in CHUN, "Aus den Tiefen des Weltmeeres," ii Aufl. 1903, **n. sp.**
- G. affinis*, p. 106, many figg., *paulensis*, p. 112, pl. xxxi, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- +*Harpactocarcinus punctulatus*, p. 50, pl. i, figg. 1-3; CHECCHIA-RISPOLI, Boll. Soc. zool. Ital. (2) v.
- Lioxantho punctatus*, p. 256, pl. x, fig. 3; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Lophopanopeus bellus*, p. 180, *frontalis*, p. 181, pl. vii, fig. 8, *heathii*, p. 182, pl. vii, fig. 9, *leucomanus*, p. 182, *lockingtoni*, p. 183, pl. vii, fig. 7, *diegensis*, p. 184, pl. ix, fig. 3; RATHBUN, Harriman Alaska Exped. x.
- L. nicaraguensis*, Realejo, Nicaragua, p. 162; RATHBUN, P. Soc. Washington xvii, **n. sp.**
- Lybia*, H. M.-E., revived for *Melia* Latr., non Billberg; RATHBUN, t. c. p. 102.
- Melia* [see *Lybia*].
- +*Metopoxantho n. g.* (*Xanthidae*), p. 255, *martini*, post-tertiary, Celebes, p. 257, pl. ix, fig. 1; DE MAN, Samm. geol. Mus. Leiden (1) vii, **n. sp.**
- Ovalipes trimaculatus*, p. 92, pl. xxxii, fig. 6; DOFLEIN, Brachyura "Valdivia."
- Parathelphusa sinensis*, p. 316, pl. xvii, figg. 1 & 2, var.?, p. 318, pl. xvii, fig. 3; DE MAN, Mission Pavie Indo-Chine iii.
- P. paviei* Laos, p. 320, pl. xvii, fig. 4; DE MAN, t. c. **n. sp.**
- Pilumnus verrucosipes*, p. 100, pl. xxxii, figg. 3 & 4; DOFLEIN, Brachyura "Valdivia": *P. spinohirsutus*, p. 185, pl. vii, fig. 2; RATHBUN, Harriman Alaska Exped. x.
- +*Podophthalmus vigil*, post-tertiary, Celebes, p. 274; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Potamon*, key to spp. from Celebes, p. 567, *celebense* var. *lokaensis*, p. 561, var. *linduensis*, **n. var.**, p. 562, fig. A, var. *possoensis*, **n. var.**, p. 564, fig. B; ROUX, Rev. Suisse Zool. xii.
- P. (Potamon) cochinchinense*, Cochin-China, p. 323, pl. xviii, fig. 5; DE MAN, Mission Pavie Indo-Chine iii, **n. sp.**
- Pseudothelphusa geayi*, French Guiana, p. 127, text-fig. 1; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Trichopeltarium alcocki*, p. 531; DOFLEIN in CHUN, "Aus den Tiefen des Weltmeeres," ii Aufl. 1903, **n. sp.**

- T. alcocki*, p. 88, pl. xxviii, figg. 4 & 5; DOFLEIN, *Brachyura* "Valdivia."
Xantho bidentatus, p. 256, pl. ix, fig. 2, *impressus*, p. 256, pl. x, fig. 4;
DE MAN, *Samm. geol. Mus. Leiden* (1) vii.

CATOMETOPA.

- Baruna* **n. g.** (*Grapsidae*), p. 3, *socialis*, Ceylon, p. 3, pl. ia; STEBBING, *Spolia Zeylan.* ii, **n. sp.**
Carcinoplax longimanus, p. 114, subsp. *indicus*, **n. subsp.**, p. 114, pl. xxxv, figg. 1 & 2, subsp. *japonicus*, p. 115, pl. xxxvi; DOFLEIN, *Brachyura* "Valdivia."
Ceratoplax hispida, pl. lxi, fig. 4; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Chasmocarcinops gelasmoides, pl. lxii, figg. 2, 2a, 3, 3a; ALCOCK & MCARDLE, t. c.
Clistostoma dotilliforme, pl. lxiv, figg. 1 & 1a; ALCOCK & MCARDLE, t. c.
†*Celoma bicarinatum*, Tertiary, East Greenland, p. 120, pl. iv, fig. 6, pl. v, figg. 1-6; RAVN, *Medd. Gronland* xxix (1), **n. sp.**
Cryptophrys concharum, p. 188, pl. vii, fig. 6, & text-fig. 94; RATHBUN, *Harriman Alaska Exped.* x.
Dotilla affinis, pl. lxiii, figg. 1-1b, *clepsydroidactylus*, figg. 2 & 2a, *blanfordi*, figg. 3 & 3a; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Elamena sindensis, pl. lxiv, fig. 4; ALCOCK & MCARDLE, t. c.
Hexaplax **n. g.** (*Gonoplacidae*), p. 122, *megalops*, off Sumatra, 470 metres, p. 122, pl. xxxi, figg. 3 & 4, pl. l, fig. 7; DOFLEIN, *Brachyura* "Valdivia," **n. sp.**
Hymenicus wood-masoni, pl. lxiv, fig. 3, *inachoides*, pl. lxv, fig. 1; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Lambdophallus serpes, pl. lxii, figg. 1-1b; ALCOCK & MCARDLE, t. c.
Libystes edwardsi, pl. lxi, fig. 1, *alphonsi*, fig. 2; ALCOCK & MCARDLE, t. c.
†*Macrophthalmus granulatus*, post-tertiary, Celebes, p. 266, pl. x, fig. 5; DE MAN, *Samm. geol. Mus. Leiden* (1) vii, **n. sp.**
Notonyx vitreus, pl. lxi, fig. 3; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Opisthopus transversus, p. 188, pl. ix, fig. 2, text-fig. 95; RATHBUN, *Harriman Alaska Exped.* x.
Palicus serripes, pl. lxvii, fig. 1, *investigatoris*, fig. 2, *wood-masoni*, fig. 3; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Pilumnoplax americana, p. 120, pl. xxxv, figg. 3 & 4; DOFLEIN, *Brachyura* "Valdivia."
Pinnaeodes meinerti, Valparaiso, p. 162; RATHBUN, *P. Soc. Washington* xvii, **n. sp.**
Pinnixa occidentalis, p. 187, pl. vii, fig. 4, pl. ix, figg. 6 & 6a, *californiensis*, p. 187, pl. vii, fig. 3; RATHBUN, *Harriman Alaska Exped.* x.
Pinnotheres mactricola, pl. lxii, figg. 4, 5-5b, *purpureus*, figg. 6-6b; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*: *Pinnotheres* sp., p. 124, pl. xxxvii, figg. 3 & 4, text-fig. 10; DOFLEIN, *Brachyura* "Valdivia."
Pinnotheres villosissimus, in a Holothurian, Padang, p. 125, pl. xxxvii, figg. 6 & 7, text-fig. 11, DOFLEIN, t. c. **n. sp.**
Psopheticus insignis, pl. liv, fig. 2; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*: *P. stridulans*, p. 118, pl. xxx, fig. 4; DOFLEIN, *Brachyura* "Valdivia."
Ptychognathus onyx, pl. lxv, figg. 2 & 2a, *andamanica*, figg. 3 & 3a; ALCOCK & MCARDLE, *Illustr. Zool. Investigator*.
Pyxidognathus fluviatilis, pl. lxvi, figg. 3 & 3a; ALCOCK & MCARDLE, t. c.
Raphonotus lowei, p. 186, text-fig. 93; RATHBUN, *Harriman Alaska Exped.* x.

- Retropluma chuni*, off Sumatra, 614 metres, p. 131, pl. xxxvii, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- Scleroplax granulata*, p. 188, pl. vii, fig. 5; RATHBUN, Harriman Alaska Exped. x.
- Scopimera investigatoris*, pl. lxiii, figg. 4-4b, *crabricauda*, figg. 5-5b; ALCOCK & MCARDLE, Illustr. Zool. Investigator.
- Sesarma lanatum*, pl. lxv, figg. 4 & 4a, *jinni*, pl. lxvi, fig. 1, *latifemur*, fig. 2; ALCOCK & MCARDLE, t. c.
- Speocarcinus californiensis*, p. 190, pl. ix, fig. 1; RATHBUN, Harriman Alaska Exped. x.
- Tylodiplax indica*, pl. lxiv, figg. 2-2c; ALCOCK & MCARDLE, Illustr. Zool. Investigator.
- Uca* [= *Gelasimus*] *brevifrons*, p. 308, pl. xxxv, figg. 1-5; HOLMES, P. Calif. Ac. (3) Zool. iii.
- U. cerstedti*, Costa Rica, p. 161; RATHBUN, P. Soc. Washington xvii, **n. sp.**

OXYSTOMATA.

- Atlantotlos n. g.* (*Leucosiidae*), p. 49, *rhombifer*, mouth of Congo, p. 50, pl. xv, figg. 7 & 8; DOFLEIN, Brachyura "Valdivia," **n. sp.**
- †*Calappa lophos*, post-tertiary, Celebes, p. 277; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Clythrocerus planus*, p. 168, pl. ix, fig. 4; RATHBUN, Harriman Alaska Exped. x.
- Cosmonotus grayi*, p. 51, pl. xviii, figg. 5-8; DOFLEIN, Brachyura "Valdivia."
- Cyclodorippe uncifera*, p. 34, pl. xii, figg. 4-7, pl. xxxviii, figg. 6 & 7; DOFLEIN, t. c.
- Cymonomus granulatus*, p. 33, pl. xi, fig. 5, pl. xii, figg. 1-3; DOFLEIN, t. c.
- Dorippe lanata*, p. 32; DOFLEIN, t. c.
- Ebalia* (*Phlyxia*) *atlantica*, p. 46, pl. xvi, fig. 4; DOFLEIN, t. c.
- E. salamensis*, E. Africa, 400 metres, p. 47, pl. xvi, figg. 1-3; DOFLEIN, t. c. **n. sp.**
- Ethusa hirsuta*, pl. lix, figg. 2 & 2a; ALCOCK & MCARDLE, Illustr. Zool. Investigator: *E. andamanica*, p. 27, pl. xiii, figg. 7 & 8, *mascarone*, p. 29, (*Ethusina*) *abyssicola*, p. 31, pl. xiii, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."
- E. zurstrasseni*, off E. Africa, 977 metres, p. 28, pl. xiii, figg. 3 & 4, *somalica*, off E. Africa, 1362 metres, p. 30, pl. xiii, figg. 5 & 6; DOFLEIN, t. c. **n. spp.**
- Mursia cristimana*, p. 38, pl. xvi, figg. 5-12, pl. xviii, fig. 1, *armata typica*, p. 40, pl. xvii, fig. 1, pl. xviii, fig. 2, *a. curtispina*, p. 40, pl. xvii, fig. 2, pl. xviii, fig. 3, *a. hawaiiensis*, p. 41, *a. bicristimana*, p. 41, pl. xvii, fig. 3, pl. xviii, fig. 4; DOFLEIN, t. c.
- †*Myra* sp., post-tertiary, Celebes, p. 276; DE MAN, Samm. geol. Mus. Leiden (1) vii.
- Parilia alcocki*, p. 44, pl. xiv, figg. 8 & 9; DOFLEIN, Brachyura "Valdivia."
- Pariphiculus coronatus*, p. 41, pl. xiv, fig. 7; DOFLEIN, t. c.
- Philyra punctata*, p. 45, pl. xv, figg. 1-4; DOFLEIN, t. c.
- P. laminata*, off Sumatra, 141 metres, p. 46, pl. xv, figg. 5 & 6; DOFLEIN, t. c. **n. sp.**
- Randallia pustulosa*, p. 42, pl. xiv, figg. 1-6; DOFLEIN, t. c.

DROMIACEA.

- Dromia bicornis*, p. 8, pl. vi, figg. 3-5, *spinosa*, p. 9, pl. vi, figg. 1 & 2; DOFLEIN, Brachyura "Valdivia."

- D. atlantica*, mouth of Congo, p. 10, pl. vii, figg. 3 & 4; DOFLEIN, t. c. **n. sp.**
Homola barbata orientalis, p. 14, pl. v, figg. 4 & 5, (*Paromola profundorum*, p. 16, pl. vii, figg. 1 & 2; DOFLEIN, t. c.
Homolochunia, **n. g.** (*Latreillide*), p. 21, *valdivia*, off E. Africa, 693-977 metres, p. 22, pl. i, figg. 1 & 2, pl. ix, figg. 1-8, pl. x, figg. 1 & 2, pl. xliii, fig. 1; DOFLEIN, t. c. **n. sp.**
Homolodromia bouvieri, off E. Africa, 863 metres, p. 4, pl. v, figg. 1-3, pl. xxxviii, figg. 9-13, pl. xliii, fig. 3, text-fig. 1; DOFLEIN, t. c. **n. sp.**
Homologenus braueri, off E. Africa, 1242 metres, p. 18, pl. xi, figg. 3 & 4; DOFLEIN, t. c. **n. sp.**
Hypsophrys longipes, p. 17, pl. xi, figg. 1 & 2; DOFLEIN, t. c.
Pseudodromia latens, p. 12, pl. viii, figg. 1-6; DOFLEIN, t. c.

b. ANOMURA.

GALATHEIDEA.

- Bathankyristes spinosus*, pl. lv, fig. 2, *levis*, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Galacantha areolata, pl. lv, figg. 5 & 5a; ALCOCK & McARDLE, t. c.
Munidopsis polymorpha, remarkable habitat; CALMAN, Ann. Nat. Hist. (7) xiv, pp. 213-218, 1 text-fig.: *M. wardeni*, pl. lv, fig. 1, *hemingi*, pl. lv, fig. 4, *M. (Orophorhynchus) granosa*, pl. lvi, fig. 1, *edwardsii*, fig. 2, (*Elasmonotus) sinclairi*, fig. 4, *M. orcina*, fig. 5, (*Orophorhynchus) ceratophthalmus*, pl. lvii, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Pachycheles rudis, p. 168, pl. vi, fig. 6; RATHBUN, Harriman Alaska Exped. x.
Ptychogaster investigatoris, pl. lviii, fig. 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.
Uroptychus nigricapillis, pl. lvi, fig. 3, *nanophyes*, pl. lvii, figg. 1, 1a; ALCOCK & McARDLE, t. c.

PAGURIDEA.

[See also ALCOCK (2).]

- Birgus latro*, characters and habits; NAPOLI, Boll. Soc. zool. Ital. xiii, pp. 193-197.
Chlænopagurus andersoni, pls. liii & liv, figg. 1 & 1a; ALCOCK & ANDERSON, Illustr. Zool. Investigator.
Eupagurus bernhardus, correlation of sensations; BOHN, C.R. Ac. Sci. cxxxviii, p. 113: *E. longicarpus*, psychological experiments; SPAULDING, Biol. Bull. vi, p. 325 and Journ. Compar. Neurology and Psychology xiv, pp. 49-61.
Pagurus [see also *Eupagurus*] *capillatus*, p. 157, pl. iv, fig. 3, *brandtii*, p. 157, pl. iv, fig. 4, *dalli*, p. 158, pl. iv, fig. 1, *rathbuni*, p. 158, pl. iv, fig. 2, *tanneri*, p. 158, pl. iv, fig. 7, *confragosus*, p. 158, pl. iv, fig. 8, *cornutus*, p. 158, pl. v, fig. 3, *townsendi*, p. 158, pl. iv, fig. 5, *beringanus*, p. 159, pl. v, fig. 5, *undosus*, p. 159, pl. iv, fig. 6, *kennerlyi*, p. 159, pl. v, fig. 4, *setosus*, p. 159, pl. v, fig. 1, *samuelis*, p. 160, pl. v, fig. 7, *granosimanus*, p. 160, pl. v, fig. 8, *hemphillii*, p. 160, pl. v, fig. 9, *munitus*, p. 161, pl. v, fig. 2, *gilli*, p. 161, pl. v, fig. 10; RATHBUN, Harriman Alaska Exped. x.
Parapagurus mertensii, p. 162, pl. v, fig. 6; RATHBUN, t. c.
Placetron wosnessenskii, p. 163, pl. vi, fig. 1; RATHBUN, t. c.

HIPPIDEA.

Key to families, p. 751 ; BORRADAILE, Fauna Maldive ii.

Albunea gibbesii, p. 625, figg. 3 & 4, *oxyophthalma*, p. 625, fig. 5 ; BENEDICT, P. U. S. Mus. xxvii.

A. elioti, Samoa, p. 623, fig. 2 ; BENEDICT, t. c. **n. sp.**

Idotea Weber, 1795, type *emerita* Fabr. (syn. of *Emerita* Gronovius, 1764), p. 171 ; RATHBUN, P. Soc. Washington xvii.

Lophomastix **n. g.** (*Albuneidae*) p. 621, *diomedea*, off California, p. 621, fig. 1 ; BENEDICT, P. U. S. Mus. xxvii, **n. sp.**

Remipes granulatus, Maldive Ids., p. 751, pl. lviii, fig. 1 ; BORRADAILE, Fauna Maldive ii, **n. sp.**

c. MACRURA.

[See also †JUKES-BROWNE (96), RICHET (176).]

NEPHROPSIDEA.

The Crayfish [genus and species not stated] regeneration of first leg ; REED, Arch. Entwicklmech. xviii, pp. 307–316, pls. xvii & xviii, 3 text-figg.

Astacus fluviatilis: guide to dissection ; ANGLAS, L'Écrevisse : structure and physiology of digestive apparatus ; JORDAN, Biol. Centrbl. xxiv, pp. 321–332, 4 text-figg. and Arch. ges. Physiol. ci, pp. 263–310, pl. vii, 6 text-figg.: rudimentary gill ; LANKESTER, Nature lxi, p. 270 ; MOSELEY, Quart. J. Micr. Sci. xlviii (3), pp. 359–366, pls. xxiii & xxiv : *A. fluviatilis* var. *torrentium*, colour-variety, p. 254 ; BOUVIER, Bull. Soc. ent. France 1904 : *A. torrentium*, bionomics and physiology ; LATTEY, Nat. Hist. Common Animals, pp. 48–70.

Astacus [*Homarus*] *gammarus*, abnormal chelæ, p. 195 ; SCHERREN, P. Zool. Soc. London 1903, ii.

Cambarus affinis, breeding habits, young stages, &c. ; ANDREWS, Amer. Natural. xxxviii, pp. 165–206, 10 text-figg. : *C. bartoni*, abnormal leg ; ANDREWS, Biol. Bull. vi, p. 75, 5 text-figg. : *C.* lists of spp., distrib. æcology, &c. ; HARRIS, Kansas Univ. Sci. Bull. ii (3), pp. 51–187 : *C. uhleri*, habits ; HAY, P. Soc. Washington xvii, p. 167 : *C. viridis*, copulatory appendages ; MOENHKAUS, Indiana Univ. Bull. i, pp. 17 & 18, 2 figg. : *C. affinis*, habit formation ; YERKES & HUGGINS, Harvard Psychological Studies i, pp. 565–577, 4 figg.

Homarus [see also *Astacus*] *vulgaris*, hatching ; HERDMAN, Nature lxx, p. 296 : maturation divisions in testis ; LABBÉ, C.R. Ac. Sci. cxxxviii, pp. 96–99.

†*Hoplopatria granulosa*, p. 32, pl. ii, fig. 1 ; COLLET, Bull. Soc. Reims xii.

†*H. groenlandica*, Tertiary, East Greenland, p. 115, pl. iv, figg. 1 & 2 ; RAVN, Medd. Gronland xxix (1), **n. sp.**

Nephrops norvegicus, variation of ♂ gen. apertures, and proportions of sexes ; MCINTOSH, P. Cambridge Soc. xii, pp. 441–444 : general account of structure ; MEEK, The Norway Lobster, 1903.

Nephropsis ensirostris, pl. lviii, figg. 1, 1a ; ALCOCK & MCARDLE, Illustr. Zool. Investigator.

Parastacus hassleri, p. 256, text-figg. 24 & 25, *agassizii*, p. 258, pl. ix ; PORTER, Revist. chilena viii.

Phoberus cæcus var. *tenuimanus*, pl. lx ; ALCOCK & MCARDLE, Illustr. Zool. Investigator.

ERYONIDEA.

Eryonicus indicus, pl. 1, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Willemoesia indica, pl. lvii, figg. 5, 5a; ALCOCK & McARDLE, t. c.

LORICATA.

Palinurus vulgaris, eye replaced by "antenna"; ARIOLA, Arch. Entwick-mech. xviii, pp. 248-252, pl. xiv: histology of alimentary system; GUIEYSSE, Bull. Soc. Philom. (9) vi, pp. 117-128, 3 text-figg.

Scyllarus martensi var., p. 754, pl. lviii, fig. 4; BORRADAILE, Fauna Maldive ii.

THALASSINIDEA.

Axiopsis aethiopica, Red Sea, p. 235; NOBILI, Bull. Mus. Paris x, **n. sp.**

Axius spinulicauda, p. 149, text-fig. 90; RATHBUN, Harriman Alaska Exped. x.

Calastus longispinis, pl. lvii, figg. 2 & 2a; ALCOCK & McARDLE, Illustr. Zool. Investigator: *C. investigatoris*, p. 151, *quinqseriesiatus*, p. 151, text-fig. 91; RATHBUN, Harriman Alaska Exped. x.

Calocaris alcocki, pl. 1, figg. 4 & 4a; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Callianassa (Callichirus) longiventris (?), p. 752, pl. lviii, fig. 2; BORRADAILE, Fauna Maldive ii: *C.* key to N.W. American spp., p. 153, *goniophthalma*, p. 154, pl. viii; RATHBUN, Harriman Alaska Exped. x. +*C.*, Upper Cretaceous, Belfast, p. 35; LAMPLUGH and others, Geol. Belfast, Mem. Geol. Survey 1904.

C. (Trypaea) maldivensis, Maldive Ids., p. 753, pl. lviii, fig. 3; BORRADAILE, Fauna Maldive ii: *C. (Cheramus) jousseaumei* and *calmani*, p. 236, (*Trypaea*) *bouvieri*, p. 236, (*Callichirus*) *rosæ* and *coutieri*, p. 237, Red Sea; NOBILI, Bull. Mus. Paris x: **n. spp.**

Euconaxius [apparently for *Eiconaxius*] *coronatus*, Skager Rack, p. 384, pl. xx, figg. 1-10, 13 & 14, pl. xxi, figg. 1-8, *crassipes*, Kosterfjord, p. 390, pl. xx, figg. 11 & 12; TRYBOM, Arkiv. Zool. i, **n. spp.**

Gebicula exigua, pl. lvii, fig. 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Iconaxiopsis andamanensis, pl. lviii, figg. 2 & 2a; ALCOCK & McARDLE, t. c.

Lepidophthalmus **n. g.** (*Callianassidæ*), p. 310, *eiseni*, Lower California, p. 311, pl. xxxv, figg. 6-13; HOLMES, P. Calif. Ac. (3), Zool. iii, **n. sp.**

Upogebia osiridis, p. 235, (*Gebiopsis*) *rhadames*, p. 235, *octoceras*, p. 236, Red Sea; NOBILI, Bull. Mus. Paris x, **n. spp.**

CARIDEA.

Aegeon affine, pl. li, figg. 3, 3a, & 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Alope australis, S. Australia, p. 154, pl. xxx, figg. 1-7; BAKER, Tr. R. Soc. S. Austral. xxviii, **n. sp.**

Alpheus Weber, 1795, synonym of *Cancer*, replaced by *Crangon* Weber, p. 170; RATHBUN, P. Soc. Washington xvii: *A.* regeneration, p. 319; BRUES, Biol. Bull. vi: *A. heterochelis*, p. 5; STEBBING, Spolia Zeylan. ii.

- Angasia elongata*, p. 147, pl. xxvii, figg. 1-4, *kimberi*, p. 149, pl. xxvii, fig. 5, *robusta*, p. 150, pl. xxviii, figg. 1-8, *tomentosa*, p. 152, pl. xxix, figg. 1-4, South Australia; BAKER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Arete dorsalis* var. *pacificus*, commensalism with *Heterocentrotus mammillatus*; COUTIERE, Bull. Mus. Paris x, pp. 58-60.
- Atya serrata*, mutation *alluaudi* **nov.** Madagascar, p. 448 [see also *Ortmannia*]; BOUVIER, C.R. Ac. Sci. cxxxviii.
- A. intermedia*, W. Africa, p. 137, *africana*, Ogowé, p. 138; BOUVIER, Bull. Mus. Paris x, **n. spp.**
- Atyaephyra desmarestii*, variation statistically examined; BROŽEK, SB. Bohmisch. Ges. 1904, xi.
- Betæus harrimani*, Sitka, p. 108, text-fig. 49; RATHBUN, Harriman Alaska Exped. x, **n. sp.**
- Birulia* **n. g.** (*Hippolytidae*) p. xlv, *sachalinensis*, Saghalien, p. xlv [in Russian]; BRAZHNIKOV, Annuaire Mus. St. Petersb. viii, **n. sp.**
- Caridina togoensis* var. *decorsei* **n. var.** p. 131; BOUVIER, Bull. Mus. Paris x: *C.*, key to spp. from Celebes, p. 551, *pareparensis* var. *parvidentata* **n. var.**, Celebes, p. 545, pl. ix, figg. 5-7; ROUX, Rev. Suisse Zool. xii.
- C. simoni*, Ceylon, p. 131, *syriaca*, Syria, p. 132, *grandidieri*, Madagascar, p. 133, *davidi*, China, p. 133, *apiocheles*, and mutation *edwardsi*, Seychelles(?), p. 134, *madagascariensis*, Madagascar, p. 134, *edulis*, Madagascar, p. 135, *similis*, Seychelles, p. 135; BOUVIER, Bull. Mus. Paris x: *C. linduensis*, p. 541, pl. ix, figg. 1-4, *opaensis*, p. 547, pl. ix, figg. 8-10, Celebes; ROUX, Rev. Suisse Zool. xii: **n. spp.**
- Coralliocaris hecate*, p. 232, (*Onycocaris*) *australica* and *rhodope*, p. 232, Red Sea; NOBILI, Bull. Mus. Paris x, **n. spp.**
- Coralliocrangon* **n. g.** (*Crangonidae*) *perrieri*, Red Sea, p. 234; NOBILI, t. c. **n. sp.**
- Crago* Lamk. (= *Crangon* Fabr. 1798, non Weber, 1795), type *vulgaris*, p. 170; RATHBUN, P. Soc. Washington xvii.
- Crangon* Weber, 1795 (= *Alpheus* Fabr. 1798), type *malabaricus*, p. 170; RATHBUN, t. c. [See *Crago*.]
- Crangon vulgaris*, fishery problems; HERDMAN, P. Liverp. biol. Soc. xviii, pp. 157-167: *C. lockingtonii* **n. nom.** for *C. munitus* Lockington, non Dana, p. 312, pl. xxxv, figg. 14-16; HOLMES, P. Calif. Ac. (3) Zool. iii: *C. spp.*, colour physiology; KEEBLE & GAMBLE, Phil. Trans. B, cxcvi, pp. 295-388: *C.*, key to N.W. American spp., p. 111, *nigricaruda*, p. 112, fig. 50, *nigromaculata*, p. 114, fig. 51, *alaskensis*, p. 114, fig. 52 & 53, subsp. *elongata*, p. 115, fig. 54, *septemspinosa*, p. 116, fig. 55, *alba*, p. 117, figg. 56 & 57, *holmesi*, p. 118, fig. 58, *stylirostris*, p. 118, fig. 59, *dalli*, p. 119, fig. 60, *franciscorum*, p. 120, fig. 61, subsp. *angustimana*, p. 121, figg. 62 & 63, *intermedia*, p. 122, *communis*, p. 123, fig. 64, *resima*, p. 124, fig. 65, *abyssorum*, p. 125, fig. 66, *munita*, p. 127, fig. 67, *acclivis*, p. 129, fig. 68, *variabilis*, p. 129, fig. 69, *spinosisima*, p. 130, fig. 70, *spinirostris*, p. 131, fig. 71, *munitella*, p. 132; RATHBUN, Harriman Alaska Exped. x.
- Ephyrina hoskynii*, pl. lii, fig. 3; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Heptacarpus* [see *Spirontocaris*].
- Heterocarpus tricarinatus*, pl. li, fig. 1, *wood-masoni*, fig. 2; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Hippolysmata multiscissa*, Red Sea, p. 231; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Hippolyte*, spp., colour physiology; KEEBLE & GAMBLE, Phil. Trans. B, cxcvi, pp. 295-388.
- Hymenodora frontalis*, p. 28, fig. 8; RATHBUN, Harriman Alaska Exped. x.

- Latreutes pygmaeus* and *gravieri*, Red Sea, p. 230; NOBILI, Bull. Mus. Paris x, **n. spp.**
- Nectocrangon* *lar*, p. 137, text-figg. 74 & 75, *dentata*, p. 138, text-figg. 76 & 77, *ovifer*, p. 139, text-figg. 78 & 79, *californiensis*, p. 140, text-figg. 80 & 81, *alaskensis*, p. 141, text-figg. 82 & 83, *crassa*, p. 142, text-figg. 84 & 85, *levior*, p. 143, text-figg. 86 & 87; RATHBUN, Harriman Alaska Exped. x.
- Onydocaris* **n. subg.** of *Coralliocaris* (q.v.), p. 232; NOBILI, Bull. Mus. Paris x.
- Ortmannia*, spp. except *O. mexicana* are mutations of spp. of *Atya*; BOUVIER, C.R. Ac. Sci. cxxxviii, pp. 446-449.
- Palæmon* [= *Leander*] spp., colour physiology; KEEBLE & GAMBLE, Phil. Trans. B, cxcvi, pp. pp. 295-388.
- Palæmon* (*Eupalæmon*) *lar* var. *spectabilis*, p. 291, pl. xviii, fig. 1, (*Parapalæmon*?) *asperulus*, p. 293, pl. xviii, figg. 2-8, (*Macrobrachium*) *latimanus*, p. 296, pl. xviii, figg. 9-12, (*Eupalæmon*) *macrobrachion*, p. 299, pls. xviii & xix, figg. 13-29, (*Eupalæmon*) *foai*, p. 306, pl. xix, figg. 30-37, (*Macrobrachium*) *jamaicensis* var. *vollenhovenii*, p. 309, pls. xix & xx, figg. 38-53, (*Macrobrachium*) *olfersii*, p. 314, pl. xx, figg. 54-74, (*Macrobrachium*) sp., p. 319, pl. xx, figg. 75-80; DE MAN, Tr. Linn. Soc. London (2) Zool. ix.
- Palæmonella biunguiculata* and *aberrans*, Red Sea, p. 233; NOBILI, Bull. Mus. Paris x, **n. spp.**
- Palæmonetes varians* in E. Norfolk, p. 649; GURNEY, Tr. Norfolk Soc. vii: *P. kadiakensis*, p. 30, fig. 9; RATHBUN, Harriman Alaska Exped. x.
- Pandalopsis ampla*, p. 51, *aleutica*, p. 52, pl. i, fig. i & text-fig. 16, *longirostris*, p. 53, text-fig. 17, *dispar*, p. 54, pl. i, fig. 2; RATHBUN, t. c.
- Pandalus* (*Plesionika*) *bifurca*, pl. li, fig. 6, *alcocki*, pl. lii, figg. 2 & 4; ALCOCK & McARDLE, Illustr. Zool. Investigator: *P. borealis*, p. 35, *goniurus*, p. 38, pl. i, fig. 3, *jordani*, p. 40, pl. ii, fig. 3, *montagui tridens*, p. 41, pl. ii, fig. 2, *leptocerus*, p. 43, *platyceros*, p. 44, *hypsiniotus*, p. 46, pl. ii, fig. 5, *danæ*, p. 47, text-fig. 13, *stenolepis*, p. 49, pl. ii, fig. 4 & text-fig. 14, *gurneyi*, p. 50, pl. ii, fig. 6 & text-fig. 15; RATHBUN, Harriman Alaska Exped. x.
- Paracrangon echinata*, p. 143; RATHBUN, t. c.
- Parapasiphæa latirostris*, pl. lii, fig. 1; ALCOCK & McARDLE, Illustr. Zool. Investigator: *Parapasiphæa serrata*, p. 25, fig. 7; RATHBUN, Harriman Alaska Exped. x.
- Pasiphæa magna* (?), p. 19, fig. 1, *pacifica*, p. 20, figg. 2 & 3, *emarginata*, p. 22, fig. 4, *princeps*, p. 23, *corteziana*, p. 24, fig. 5, *affinis*, p. 24, fig. 6; RATHBUN, t. c.
- Periclimenes borradalei* **n. nom.** for *P. tenuipes* Borradaile non Holmes, p. 34, *tenuipes* Holmes, p. 34, fig. 12; RATHBUN, t. c.
- P. soror*, Red Sea, p. 231; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Phye alcocki*, pl. lii, figg. 6, 6a & b; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Pontonia californiensis*, p. 33, fig. 11; RATHBUN, Harriman Alaska Exped. x.
- Processa canaliculata*, dimorphism, p. 110; RATHBUN, t. c.
- P. coutieri*, Red Sea, p. 234; NOBILI, Bull. Mus. Paris x, **n. sp.**
- Psolidopus huxleyi*, pl. li, figg. 5, 5a & b; ALCOCK & McARDLE, Illustr. Zool. Investigator.
- Psathyrocaris fragilis*, pl. lii, fig. 5; ALCOCK & McARDLE, t. c.
- Sclerocrangon boreas*, p. 133, *alata*, p. 134, pl. iii, fig. 2 & text-figg. 72 & 73, *sharpi*, p. 135, pl. iii, figg. 1 & 1a; RATHBUN, Harriman Alaska Exped. x.
- Spirontocaris* (incl. *Heptacarpus*), keys to N.W. American spp., p. 56, *lamellicornis*, p. 62, text-fig. 18, *spina*, p. 63, pl. iii, fig. 5 & text-fig. 19,

arcuata, p. 64, pl. iii, fig. 4 and text-fig. 20, *murdochi*, p. 66, pl. iii, fig. 6 & text-fig. 21, *truncata*, p. 67, text-fig. 22, *bispinosa*, p. 68, text-fig. 23, *snyderi*, p. 69, text-fig. 24, *sica*, p. 69, text-fig. 25, *phippisii*, p. 70, *ochotensis*, p. 71, text-fig. 26, *dalli*, p. 72, text-fig. 27, *polaris*, p. 73, *unalaskensis*, p. 74, text-fig. 28, *vicina*, p. 75, text-fig. 29, *washingtoniana*, p. 76, text-fig. 30, *gracilis*, p. 77, text-fig. 31, *flexa*, p. 78, text-fig. 32, *decora*, p. 79, text-fig. 33, *tridens*, p. 81, text-fig. 34, *barbata*, p. 82, text-fig. 35, *stylus*, p. 84, text-fig. 36, *gaimardii belcheri*, p. 86, pl. iii, figg. 3 & 3a, *townsendi*, p. 87, text-fig. 37, *suckleyi*, p. 89, text-fig. 38, *moseri*, p. 91, text-fig. 39, *maxillipes*, p. 92, text-fig. 40, *brachydactyla*, p. 93, text-fig. 41, *camtschatica*, p. 94, text-fig. 42, *kincaidi*, p. 95, text-fig. 43, *biunguis*, p. 97, text-fig. 44, *pusiola*, p. 99, *herdmani*, p. 100, *sitchensis*, p. 102, *cristata*, p. 102, text-fig. 45, *stoneyi*, p. 103, text-fig. 46, *avina*, p. 103, text-fig. 47, *macrophthalma*, p. 105, text-fig. 48; RATHBUN, Harriman Alaska Exped. x.

Sympasiphaea annectens, pl. lii, fig. 7; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Tozeuma erythraeum, Red Sea, p. 231; NOBILI, Bull. Mus. Paris x, **n. sp.**

Typton bouvieri, Red Sea, p. 233; NOBILI, t. c. **n. sp.**

Urocaris infraspinis, p. 31, fig. 10; RATHBUN, Harriman Alaska Exped. x.

Vercoia **n. g.** (*Crangonidae*), p. 157, *gibbosa*, S. Australia, p. 158, pl. xxxi, figg. 1-4; BAKER, Tr. Soc. S. Austral. xxviii, **n. sp.**

Virbius (?) *jactans*, Red Sea, p. 230; NOBILI, Bull. Mus. Paris x, **n. sp.**

STENOPIDEA.

Engystenopus palmipes, pl. i, fig. 5; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Spongiicola andamanica, pl. lviii, fig. 3; ALCOCK & McARDLE, t. c.

PENÆIDEA.

Amalopenæus elegans, p. 134, pl. ii, figg. 13-20; RIGGIO, Natural Sicil. xvii.

Aristeus (*Hemipeneus*) *crassipes*, pl. xlix, figg. 1 & 2, *A. semidentatus*, fig. 3,

A. (H.) carpenteri, fig. 4; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Gennadas borealis, p. 147, text-figg. 88 & 89; RATHBUN, Harriman Alaska Exped. x.

Metapeneus stebbingi, *cognatus*, *consobrinus*, *vaillanti*, Red Sea, p. 229; NOBILI, Bull. Mus. Paris x, **n. spp.**

Peneus (*Parapeneus*) *rectacutus*, pl. xlix, fig. 5, (*Metapeneus*) *coniger*, pl. i, figg. 2, 2a & b; ALCOCK & McARDLE, Illustr. Zool. Investigator.

Sergestes bisulcatus, pl. i, figg. 1, 1a & b; ALCOCK & McARDLE, t. c.: *S. atlanticus*, p. 145, sp. p. 146; RATHBUN, Harriman Alaska Exped. x.

Solenocera (*Parasolenocera*) *annectens*, pl. xlix, fig. 6; ALCOCK & McARDLE, Illustr. Zool. Investigator.

INCERTÆ SEDIS.

Amphionides **n. g.** (near *Amphion*) *valdiviæ*, Atlantic and Indian Oceans, descr. from larvæ, p. 225; ZIMMER, Zool. Anz. xxviii, **n. sp.**

2. SCHIZOPODA.

[See also CLEVE (43), GADZIKIEWICZ (61), SCOTT in LINDSAY (115), LO BIANCO (116), MAR. BIOL. ASS. (125), NOBRE (145), PATIENCE (152), PETCH (160), RICHARD (171), ZYKOFF (256).]

Revision of Arctic spp.; ZIMMER, *Fauna Arctica* iii (3), pp. 415-491, 172 text-figg. Only spp. of which new figures are given are noted below.

Anaspides, evidence as to systematic position from chromatophore system, p. 330; KEEBLE & GAMBLE, *Phil. Trans. B.* cxcvi.

Boreophausia [see *Rhoda*].

Euphausia intermedia, p. 118, pl. ii, figg. 3-6; RIGGIO, *Natural. Sicil.* xvii: *E. pellucida*, p. 422, figg. 12-15; ZIMMER, *Fauna Arctica* iii.

Macromysis, spp., colour-physiology; KEEBLE & GAMBLE, *Phil. Trans. B.* cxcvi, pp. 295-388.

M. nigra, coast of England, p. 331, pl. xviii, figg. 1-3, pl. xix, figg. 4-6, pl. xxi, figg. 10, 11 & 17; KEEBLE & GAMBLE, t. c. **n. sp.**

Mysis relicta: embryos figured, p. 107, figg. 1 & 2; KANE, *Irish Natural. xiii*: habits, distribution &c., p. 677; SAMTER & WELTNER, *Zool. Anz.* xxvii.

Neomysis vulgaris in *E. Norfolk*, p. 649; GURNEY, *Tr. Norfolk Soc.* vii.

Nyctiphanes norvegica, p. 419, figg. 2-5; ZIMMER, *Fauna Arctica* iii.

Rhoda [= *Boreophausia*] *inermis*, p. 420, figg. 6-9, *raschii*, p. 421, figg. 10 & 11; ZIMMER, t. c.

Thysanoessa neglecta, p. 423, figg. 16 & 17, *longicauda*, p. 424, figg. 18-21; ZIMMER, t. c.

3. STOMATOPODA.

[See also GADZIKIEWICZ (61), MAR. BIOL. ASS. (125), NOBRE (145), †WALTHER (230).]

Alima robusta, Indian Ocean, p. 379, pl. xxvii, fig. 6, *macrocephala* (locality ?), p. 380, pl. xxvii, figg. 1-1c, *subtruncata*, S. Atlantic, p. 382, pl. xxvii, fig. 4, *longicauda*, Benguela current, p. 384, pl. xxvii, figg. 8 & 8a, *strigosa*, Indian Ocean, p. 384, pl. xxvii, figg. 3 & 3a, *punctifera*, S. Atlantic, p. 386, pl. xxviii, figg. 1 & 1a, *triangularis*, Mediterranean, p. 387, pl. xxvii, figg. 7 & 7a, *paradoxa*, Agulhas Bank, p. 387, pl. xxvii, figg. 2-2b, sp., pl. xxvii, fig. 5; JURICH, *Stomatopoden "Valdivia," n. spp.* (larvæ).

Coroniderichthus bituberculatus, p. 394, pl. xxviii, fig. 3; JURICH, t. c.

Erichthus proprius (locality ?), p. 397, pl. xxviii, figg. 2-2e, *pygmæus*, Atlantic, p. 398, pl. xxxviii, figg. 6 & 6a, *acer*, Indian Ocean, p. 399, pl. xxviii, figg. 8, 8a & 9, sp., p. 399, pl. xxviii, fig. 7; JURICH, t. c. **n. spp.** (larvæ).

Gonodactylus chiragra, p. 375, pl. xxvi, figg. 4, 4a, 5 & 5a; JURICH, t. c.

Lysierichthus pulcher, p. 390, pl. xxix, figg. 2-2b, *vitreus*, p. 391, pl. xxvi, figg. 6 & 6a, *duvancellei*, p. 393, pl. xxvi, fig. 7; JURICH, t. c.

Lysiosquilla eusebia, p. 117; RIGGIO, *Natural. Sicil.* xvii.

L. vicina, Red Sea, p. 228; NOBILI, *Bull. Mus. Paris* x: *L. valdiviensis* (locality ?), p. 372, pl. xxvi, figg. 2-2g; JURICH, *Stomatopoden "Valdivia," n. spp.*

Odonterichthus tenuicornis, Indian Ocean, p. 396, pl. xxviii, fig. 4; JURICH, t. c. **n. sp.** (larva).

Pseuderichthus distinguendus, p. 394, pl. xxviii, fig. 5, *communis*, p. 395, pl. xxix, fig. 1; JURICH, t. c.

Squilla empusa, p. 366, pl. xxv, fig. 3, *microphthalma*, p. 368, pl. xxvi,

fig. 1, *leptosquilla*, p. 370, pl. xxv, figg. 1 & 1b, var. *dentata*, **n. var.**, p. 372, pl. xxv, fig. 2; JURICH, t. c.
S. minor, Zanzibar, p. 364, pl. xxv, figg. 4 & 4a; JURICH, t. c. **n. sp.**

4. CUMACEA.

[See also GADZIKIEWICZ (61), LOŠKO (118), MAR. BIOL. ASS. (125), SCOTT (191).]

Cyclaspis costata, p. 168, pl. iii, figg. 39–53, *picta*, p. 170, pl. iii, figg. 54 & 55, *herdmani*, p. 171, pl. iii, figg. 56–59, pl. iv, figg. 60–66, *hornelli*, p. 172, pl. iv, figg. 67–71, Ceylon; CALMAN, Rep. Ceylon Pearl Fisheries ii, **n. spp.**

Eocuma, p. 160, key to spp. p. 161, *sarsii*, p. 166, pl. ii, figg. 35–38; CALMAN, t. c.

E. taprobanica, p. 162, pl. i, figg. 1–20, pl. ii, figg. 21–28, *affinis*, p. 165, pl. ii, figg. 29–34, Ceylon; CALMAN, t. c. **n. spp.**

Iphinoë macrobrachium, Ceylon, p. 173, pl. iv, figg. 72–75; CALMAN, t. c. **n. sp.**

Nannastacus stebbingi, Ceylon, p. 176, pl. v, figg. 91–93; CALMAN, t. c. **n. sp.**

Paradiastylis n. g. (*Diastylidae*), p. 173, *brachyura*, Ceylon, p. 174, pl. v, figg. 76–90; CALMAN, t. c. **n. sp.**

5. TANAIIDACEA.

[See also MAR. BIOL. ASS. (125).]

Tanaioidea n. nom. for *Isopoda chelifera*, p. 3; RICHARDSON, P. U. S. Mus. xxvii.

Tanais, list of spp. p. 7, *philetærus*, Ceylon, p. 7, pl. ii; STEBBING, Spolia Zeylan. ii, **n. sp.**

6. ISOPODA.

[See also ALZONA (4), CHOBOUT (41), FLORENTIN (58), GADZIKIEWICZ (61), GIARD (66), GURNEY (78), LO BIANCO (116), LOŠKO (118), MAR. BIOL. ASS. (125), MAZIARSKI (128), NOBRE (145 & 146), PATIENCE (152), PATTERSON (153), PETCH (160), RICHARD (171), RICHARDSON (175), SCHARFF (187), DOFLEIN in SCHNEE (189), SCOTT (191), ULMER (224), VALLENTIN (226), VIRÉ (227 & 228), †WALTHER (230), WELCH (232), WHEELER (235).]

Review of morphology, development, habits and distribution; RICHARDSON, P. U. S. Mus. xxvii, pp. 2–31.

ASELLOTA.

Aselloidea n. nom. for *Asellota*, p. 3; RICHARDSON, P. U. S. Mus. xxvii.

Asellus tomalensis, p. 321, pl. xxxvii, figg. 39–42; HOLMES, P. Calif. Ac. (3) Zool. iii: *A. aquaticus*, p. 70, *cavaticus*, p. 71; KOCH, Festschr. Ges. Nürnberg 1901.

A. tomalensis, p. 224, figg. 110–112; RICHARDSON, Harriman Alaska Exped. x, **n. sp.**

Heterias n. nom. for *Janirella* Sayce non Bonnier, p. 6; RICHARDSON, P. U. S. Mus. xxvii.

Janirella, see *Heterias*.

Janiropsis kincaidi, Alaska, p. 221, figg. 102–107, *californica*, California, p. 223, figg. 108 & 109; RICHARDSON, Harriman Alaska Exped. x, n. spp.

PHREATOICOIDEA.

Phreatoicus australis; SAYCE, Victorian Natural. xx, p. 151.

FLABELLIFERA.

Cymothoidea, n. nom. for *Flabellifera*, p. 3; RICHARDSON, P. U. S. Mus. xxvii.

Æga ventrosa, p. 432, pl. xii, figg. 5–8, pl. xiii, figg. 8 & 9, *deshayesiana*, p. 434, pl. xii, figg. 1–4, pl. xiii, figg. 10 & 11; NORMAN, Ann. Nat. Hist. (7) xiv.

Æ. megalops, off coast of Portugal, 45 fath., p. 434, pl. xiii, figg. 1–7; NORMAN & STEBBING, t. c. n. sp.

Ægide, notes on British spp., p. 432; NORMAN, t. c.

Alcirona, key to spp., p. 708, *maldivensis*, Maldiv Ids., p. 708, p. li, B; STEBBING, Fauna Maldiv ii, n. sp.

Cæcosphaeroma, sp., habits, &c.; GAL, Bull. Soc. Nimes xxxi.

Calathura, key to spp., p. 700, *borradailei*, Maldiv Ids., p. 700, pl. xlix A; STEBBING, Fauna Maldiv ii, n. sp.

Cirolana harfordi, p. 319, pl. xxxvii, figg. 32–38; HOLMES, P. Calif. Ac. (3), Zool. iii: *C. latistylis*, p. 702; STEBBING, Fauna Maldiv ii.

C. japonensis, Japan, p. 35, figg. 3–5; RICHARDSON, P. U. S. Mus. xxvii: *C. sulcaticauda*, Maldiv Ids., p. 701, pl. xlix, B; STEBBING, Fauna Maldiv ii: *C. willeyi*, Ceylon, p. 11, pl. iii; STEBBING, Spolia Zeylan. ii: n. spp.

Cirolanidae, notes on British spp., p. 437; NORMAN, Ann. Nat. Hist. (7) xiv.

Corallana hirsuta, p. 704, pl. 1, B; STEBBING, Fauna Maldiv ii: *C. nodosa*, p. 14, pl. i, B; STEBBING, Spolia Zeylan. ii.

Corallanidae, notes on genera, p. 703; STEBBING, Fauna Maldiv ii.

Cyathura pusilla, Ceylon, p. 9, pl. vi, B; STEBBING, Spolia Zeylan. ii, n. sp.

Cymodocea acuta, Japan, p. 38, figg. 8–10; RICHARDSON, P. U. S. Mus. xxvii: *Cymodoce bicarinata*, Maldiv Ids., p. 712, pl. lii, B; STEBBING, Fauna Maldiv ii: n. spp.

Cymothoa, embryology (abstract of paper by NUSBAUM); HOYER, Zool. Zentrbl. xii, pp. 130–133: *C. borbonica*, p. 709; STEBBING, Fauna Maldiv ii.

Dynamene cordata, p. 302, pl. xxxiv, figg. 8–10, *glabra*, p. 304; HOLMES, P. Calif. Ac. (3) Zool. iii.

D. sculpta, California, p. 300, pl. xxxiv, figg. 1–7; HOLMES, t. c. n. sp.

Excorallana n. g. (= *Corallana* Hansen & Richardson, non Dana), p. 704; STEBBING, Fauna Maldiv ii.

Excorallanidae n. fam. for *Excorallana*, p. 704; STEBBING, t. c.

Gnathia maxillaris, metamorphosis and life-history; SMITH, Mt. Stat. Neapel xvi, pp. 469–479, pl. xviii.

Indusa carinata (on *Mugil hospes*), W. coast of Panama, p. 52, figg. 29–31; RICHARDSON, P. U. S. Mus. xxvii, n. sp.

Lanocira gardineri, p. 706, pl. li, A, *rotundicauda*, p. 707, pl. 1, A, Maldiv Ids.; STEBBING, Fauna Maldiv ii, n. spp.

Limnoria, key to spp., p. 714, *pfefferi*, Maldiv Ids., p. 714, pl. lii, A; STEBBING, t. c. n. sp.

Livoneca propinqua, Japan, p. 37, figg. 6 & 7; RICHARDSON, P. U. S. Mus. xxvii, n. sp.

- Meinertia gilberti* (on *Mugil hospes*), Mazatlan, p. 53, figg. 32 & 33 ;
 RICHARDSON, t. c. **n. sp.**
Rocinela angustata, p. 33, affinis, p. 33, figg. 1 & 2, Japan ; RICHARDSON,
 t. c. **n. spp.**
Sphæroma pentodon, p. 323, pl. xxxvii, fig. 43 ; HOLMES, P. Calif. Ac. (3)
 Zool. iii : *S. (Exosphæroma ?) globicauda*, p. 711 ; STEBBING, Fauna
 Maldive ii : *S. terebrans*, p. 16, pl. iv ; STEBBING, Spolia Zeylan. ii.
S. pentodon, California, p. 214, fig. 96 ; RICHARDSON, Harriman Alaska
 Exped. x : *S. retrolevis*, Japan, p. 47, fig. 23 ; RICHARDSON, P. U. S.
 Mus. xxvii : **n. spp.**
Sphæromidæ, remarks on relations of genera ; HOLMES, P. Calif. Ac. (3)
 Zool. iii, p. 295.

VALVIFERA.

- Idoteoidea*, **n. nom.** for *Valvifera*, p. 3 ; RICHARDSON, P. U. S. Mus. xxvii.
Arcturidæ, notes on British spp., p. 444 ; NORMAN, Ann. Nat. Hist. (7) xiv.
Arcturus scabrosus, Faroe Channel, 327–430 fath., p. 445 ; NORMAN, t. c. :
A. hirsutus, Japan, p. 41, fig. 16 ; RICHARDSON, P. U. S. Mus. xxvii :
A. simplicissimus, p. 406, figg. 114 *a-c*, *dentatus*, p. 408, figg. 115 *a-c*,
alcicornis, p. 410, figg. 116 *a-c*, *nodosus*, p. 412, figg. 117 *a-d*, *serru-*
latus, p. 414, figg. 118 *a-c*, New South Wales ; WHITELEGGE, Mem.
 Austral. Mus. iv : **n. spp.**
Astacilla bocagei, Porto, p. 93, pl. i ; NOBRÆ, Ann. Sci. nat. Porto viii,
n. sp.
Holognathidæ, **n. fam.**, p. 67 ; THOMSON, Ann. Nat. Hist. (7) xiv.
Holognathus **n. g.** (*Holognathidæ*), *stewarti* (Filhol), p. 67, pl. i ; THOMSON,
 t. c.
Idotea Weber 1795, type *emerita* Fabr. [see *Hippidea*], p. 171 ; RATHBUN,
 P. Soc. Washington xvii : *I. gracillima*, p. 216, figg. 97 & 98 ;
 RICHARDSON, Harriman Alaska Exped. x.
Idoteidæ, notes on British spp., p. 440 ; NORMAN, Ann. Nat. Hist. (7) xiv.
Pentias **n. g.** (*Idoteidæ*) *hayi*, Japan, p. 47, figg. 24 & 25 ; RICHARDSON,
 P. U. S. Mus. xxvii, **n. sp.**
Symmium **n. g.** (*Idoteidæ*), p. 39, *caudatus*, Japan, p. 40, figg. 11–15 ;
 RICHARDSON, t. c. **n. sp.**
Syndotea ritteri, San Francisco, p. 219, figg. 99–101 ; RICHARDSON,
 Harriman Alaska Exped. x, **n. sp.**

EPICARIDEA.

- Bopyroidea*, **n. nom.** for *Epicaridea*, p. 4 ; RICHARDSON, P. U. S. Mus.
 xxvii.
 Revision of American spp. (Pacific and Atlantic) with new hosts and
 localities for many spp. ; RICHARDSON, t. c. pp. 58–89.
 Cryptoniscan stage of one of the *Epicaridea*, from *Onisimus plautus*
 (*Gammaridea*) descr. but not named, p. 46, 2 text-figg. ; STEBBING,
 Bijdr. Dierk. 17/18.
Argeia pugettensis, p. 60, figg. 35–40 ; RICHARDSON, P. U. S. Mus. xxvii.
Bopyrina abbreviata (on *Hippolyte zostericola*) Florida, p. 71, figg. 56–59,
urocaridis (on *Urocaris longicaudata*) Florida, p. 73, figg. 60–62,
thorii (on *Thor floridanus*), Florida, p. 74, fig. 63 ; RICHARDSON, t. c.
n. spp.
Diplophryxus **n. g.** (*Bopyridæ*), p. 50, *jordani* (on *Palæmon serrifer*), p. 50,
 figg. 26–28 ; RICHARDSON, t. c. **n. sp.**
Eumetor (?) sp. in *Sacculina* on *Pinnotheres* in *Spondylus*, Persian Gulf ;
 PÉREZ, Pr.-verb. Soc. Bordeaux 1902–1903, pp. 109 & 110.

- Ione thompsoni* (on *Callianassa stimpsoni*), Massachusetts, p. 75, figg. 64-68; RICHARDSON, P. U. S. Mus. xxvii, **n. sp.**
- Munidion parva* (on *Munida quadrispina*), Straits of Fuca, p. 81, pp. 76-79; RICHARDSON, t. c. **n. sp.**
- Parapenæon n. g.* (*Bopyridæ*) *consolidata* (on *Parapenæus dalei*), Japan, p. 43, figg. 17-20; RICHARDSON, t. c. **n. sp.**
- Phryxus* sp., p. 45, figg. 21 & 22; RICHARDSON, t. c.
- Probopyrus palæmoneticola*, p. 66, figg. 41-43, *alpehi*, p. 67, figg. 44 & 45; RICHARDSON, t. c.
- P. bithynis* (on *Bithynis ohionis* and *B. acanthurus*), Louisiana and Nicaragua, p. 68, figg. 46-51, *floridensis* (on *Palæmonetes exilipes*), Florida, p. 70, figg. 52-55; RICHARDSON, t. c. **n. spp.**
- Pseudione galacanthæ*, p. 83, figg. 80-82; RICHARDSON, t. c.
- P. furcata* (? host), Virginia, p. 79, figg. 69-71, *curtata* (on *Petrolisthes sexspinosus*), Key West, p. 80, figg. 72-75, *tuberculata* (on *Lithodes diomedæ*), Patagonia, p. 84, figg. 83-87, *paucisecta* (on *Munida curvipes*), Patagonia, p. 85, figg. 88-91; RICHARDSON, t. c. **n. spp.**
- Stegias n. g.* (*Bopyridæ*) *clibanarii* (on *Clibanarius tricolor*), Bermudas, p. 59, fig. 34; RICHARDSON, t. c. **n. sp.**
- Tylokepon n. g.* (*Bopyridæ*), p. 716, *bonnieri* (on *Tylocarcinus styx*), Maldive Ids., p. 716, pl. liii; STEBBING, Fauna Maldive ii, **n. sp.**
- Urobopyrus n. g.* (*Bopyridæ*) *processæ* [*processi* on p. 87] (on *Processa canaliculata*), E. coast of S. America, p. 86, fig. 92; RICHARDSON, P. U. S. Mus. xxvii, **n. sp.**

ONISCOIDEA.

- Notes on British spp.; NORMAN & BRADY, Ann. Nat. Hist. (7) xiv, pp. 449-450.
- Keys to genera and spp. of S. Germany and the Tyrol; KOCH, Festschr. Ges. Nurnberg 1901, pp. 17-72.
- Supposed statocysts in *Oniscoidea*; WENIG, SB. Bohmisch Ges. 1903, xxxix, 12 pp., 1 pl.
- Armadillidium depressum*, p. 23, *nasatum*, p. 23, *versicolor*, p. 24, *pulchellum*, p. 27, *vulgare*, p. 29, *opacum*, p. 30, *pictum*, p. 32, *decipiens*, p. 33; KOCH, Festschr. Ges. Nurnberg 1901.
- A. albifrons*, Meran, p. 25, *petræum*, Torbole, p. 26, *riparium*, Torbole, p. 28, *oliveti*, Torbole, p. 31; KOCH, t. c.: *A. quadrifrons*, New York State, p. r211, text-fig. 2; STOLLER, Rep. N. York Mus. liv (i): **n. spp.**
- Cylisticus convexus*, p. 53; KOCH, Festschr. Ges. Nurnberg 1901.
- Boarmadillidium n. g.*, *granulatum*, Tertiary (?), Hérault, p. 146, text-figg. 1-3; DOLLÉUS, Feuille Natural. (4) xxxiv, **n. sp.**
- Haplophthalmus mengei*, p. 68; KOCH, Festschr. Ges. Nurnberg 1901.
- Ligidium hypnorum*, p. 69; KOCH, t. c.
- L. cæcum*, Crimea, p. 327, text-figg. 9-11; CARL, Zool. Anz. xxviii: *L. longicaudatum*, New York State, p. r208, text-fig. 1; STOLLER, Rep. N. York Mus. liv (i): **n. spp.**
- Ligia* Weber, 1795, syn. of *Cancer*, p. 172; RATHBUN, P. Soc. Washington xvii.
- Metoponorthus major*, p. 64, text-fig. 5, *orientalis*, fig. 6; DYDUCH, Bull. Ac. Cracovie 1903: *M. amœnus*, p. 54, *pruinus*, p. 55; KOCH, Festschr. Ges. Nurnberg 1901.
- M. benaci*, Torbole, p. 56; KOCH, t. c. **n. sp.**
- Oniscus murarius*, p. 61, *tenuola*, p. 62, *madidus*, p. 64, *minutus*, p. 65; KOCH, t. c.: *O. murarius*, feeding on lichens, p. 367; STAHL, Denk. Ges. Jena xi.

- O. languidus*, Ludwigsburg, p. 63, *lamperti*, Hohenlandsberg, p. 63 ; KOCH, Festschr. Ges. Nurnberg 1901, **n. spp.**
- Philoscia muscorum*, p. 57, *madida*, p. 58 ; KOCH, t. c.
- P. fischeri*, Teck, p. 59 ; KOCH, t. c. **n. sp.**
- Platyarthrus hoffmannseggii*, p. 34 ; KOCH, t. c.
- Porcellio rathkei*, p. 62, text-fig. 1, *affinis*, fig. 2, *gallicus*, fig. 3, *politus*, fig. 4 ; DYDUCH, Bull. Ac. Cracovie 1903 : *P. scaber*, p. 38, *ochraceus*, p. 39, *lævis*, p. 40, *pictus*, p. 41, *conspersus*, p. 43, *dubius*, p. 44, *confluens*, p. 45, *ratzeburgi*, p. 46, *rathkei*, p. 50 ; KOCH, Festschr. Ges. Nurnberg 1901.
- P. tirolensis*, S. Tyrol, p. 36, *cruentatus*, Sugenheim, p. 37, *mildei*, Meran, p. 41, *saltuum*, S. Alps, p. 48, *parietinus*, Landstuhl, p. 49, *sociabilis*, Vahrn, p. 51, *cognatus*, S. Tyrol, p. 52 ; KOCH, t. c. **n. spp.**
- Styloniscus gracilis*, p. 318, pl. xxxvi, figg. 29–31 ; HOLMES, P. Calif. Ac. (3) Zool. iii.
- Trichoniscus pusillus*, p. 66, *roseus*, p. 67 ; KOCH, Festschr. Ges. Nurnberg 1901.
- T. papillicornis*, Alaska, p. 227, figg. 113–117 ; RICHARDSON, Harriman Alaska Exped. x, **n. sp.**

7. AMPHIPODA.

[See also ALZONA (4), BRUNTZ (29 & 30), GADZIKIEWICZ (61), GURNEY (78), KOROTNEFF (106), LO BIANCO (116), LOŠKO (118), MAR. BIOL. ASS. (125), NOBRE (145 & 146), NORMAN (148), PATTERSON (153), PETCH (160), RICHARD (171), SAYCE (186), SCOTT (191), STEAD (205), ULMER (224), VIRÉ (227 & 228), ZYKOFF (256).]

GROCHOWSKI (69), appears to deal with the general classification of Amphipoda. On p. 33 the group is divided into four orders *Antennuloremidæ* **nov.** (for *Constantia Branickii* Dyb.), *Crevettina*, *Hyperina* and *Læmodipoda*.

GAMMARINA.

- Acanthonotozoma inflatum*, p. 32, pl. vi ; STEBBING, Bijdr. Dierk. 17/18.
- Acanthostepheia behringanus*, p. 315, pl. xxxvi, figg. 25–28 ; HOLMES, P. Calif. Ac. (3) Zool. iii.
- Acanthozone hystrix*, p. 29 ; STEBBING, Bijdr. Dierk. 17/18.
- Allorchestes ochotensis*, p. 233, fig. 118 ; HOLMES, Harriman Alaska Exped. x.
- Ampelisca*, key to some spp., p. 249, *tridens*, p. 249, pl. ii, fig. 11, pl. iv, fig. 11, *scabripes*, p. 250, pl. ii, fig. 12, *brachyceras*, p. 251, pl. ii, fig. 13, *cyclops*, p. 253, pl. ii, fig. 14, *chevreuxi*, p. 254, pl. iii, fig. 15, Ceylon ; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. spp.**
- Amphithoë scitula*, p. 314, pl. xxxvi, figg. 21–24 ; HOLMES, P. Calif. Ac. (3) Zool. iii.
- A. intermedia*, Ceylon, p. 290, pl. vii, fig. 46 ; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Anamixis stebbingi*, Ceylon, p. 259, pl. iii, fig. 18 ; WALKER, t. c. **n. sp.**
- Anonyx nugax*, p. 313, pl. xxxv, figg. 17–19, pl. xxxvi, fig. 20 ; HOLMES, P. Calif. Ac. (3) Zool. iii : *A. liljeborgii*, p. 8 ; STEBBING, Bijdr. Dierk. 17/18.
- Apherusa clevei*, Skagerak ; SARS, Publ. internat. expl. Mer, No. 10, 4 pp., 1 pl., **n. sp.**
- Barentsia* (see *Gulbarentsia*) **n. g.** (*Ediceridæ*), p. 25, *hoekii*, 71° 32' N., 64° 37' E., p. 25, pl. v ; STEBBING, Bijdr. Dierk. 17/18, **n. sp.**

- Byblis intermedius*, 72° 9' N., 24° 42' E., 145 fath., p. 18; STEBBING, t. c. **n. sp.**
- Cheiriphotis* **n. g.** (*Photidae*), p. 283, *megacheles*, Ceylon, p. 284, pl. vi, fig. 42; WALKER, Rep. Ceylon Pearl Fisheries ii.
- Chevalia* **n. g.** (*Photidae*), p. 288, *avicula*, Ceylon, p. 288, pl. vii, fig. 50, pl. viii, fig. 50; WALKER, t. c. **n. sp.**
- Chironisimus debruynei*, p. 13; STEBBING, Bijdr. Dierk. 17/18.
- Corophium trienonyx*, Ceylon, p. 25, pl. vi, A; STEBBING, Spolia Zeylan. ii, **n. sp.**
- Decamine serraticrus*, Ceylon, p. 265, pl. iv, fig. 24; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Elasmopus subcarinatus*, p. 275, pl. v, fig. 34; WALKER, t. c.
- E. dubius*, p. 276, pl. v, fig. 35, *spinimanus*, p. 277, pl. v, fig. 36, *serrula*, p. 277, pl. viii, fig. 37, Ceylon; WALKER, t. c. **n. spp.**
- Erichthonius macrodactylus*, p. 292, pl. vii, fig. 48; WALKER, t. c.
- Eusirogenes* **n. g.** (*Eusiridae*), p. 15, *dolichocarpus*, Bay of Biscay, 1000–2000 fath., p. 15, pl. ii, A; STEBBING, Tr. Linn. Soc. London (2) Zool. x, **n. sp.**
- Eusiroides caesaris* var., p. 264, pl. iv, fig. 22; WALKER, Rep. Ceylon Pearl Fisheries ii.
- E. orchomenipes*, Ceylon, p. 264, pl. iv, fig. 23; WALKER, t. c. **n. sp.**
- Gallea* **n. g.** (*Amphilochidae*), p. 256, *tecticauda*, Ceylon, p. 256, pl. iii, fig. 16, pl. viii, fig. 16; WALKER, t. c. **n. sp.**
- Gammaridae*, revision of genera (in Polish); GROCHOWSKI, Kosmos polski. xxix, p. 37.
- Gammaropsis tenuicornis*, Puget Sound, p. 239, fig. 124; HOLMES, Harriman Alaska Exped. x: *G. zeylanicus*, Ceylon, p. 282, pl. vi, fig. 41; WALKER, Rep. Ceylon Pearl Fisheries ii: **n. spp.**
- Gammarus* sp., toxicity of distilled water; BULLOT, Univ. Calif. Publ. Physiol. i (22), pp. 199–217: *G. pulex*, external and internal anatomy, habits, reproduction, development; CUSSANS, P. Liverp. biol. Soc. xviii, pp. 327–373, pls. i–iv, 6 text-figg.: *G. locusta*, embryology; HEIDECHE, Jena. Zeitschr. xxxviii, pp. 505–552, pls. xiii–xvi: *G. similis*, p. 396, pl. i, figg. 5 & 14, pl. ii, figg. 44, 45, 67, pl. iii, figg. 72–75 & 91, pl. iv, figg. 103–106, *robustoides*, p. 401, pl. 1, figg. 2, 9, 16, 21, 26, 31, 32, pl. ii, figg. 34, 35, 55, 56, pl. iii, figg. 78, 80, 84, 85, 90, pl. iv, figg. 94, 96, 112, 120–123, *crassus*, p. 403, pl. i, figg. 3, 10, 17, 22, 27, pl. ii, figg. 36–41, pl. iii, figg. 68, 69, 79, 81, 86, 87, pl. iv, figg. 95, 113, 114, 118, *obesus*, pl. i, figg. 7, 12, 19, 24, 29, pl. ii, figg. 48–53, pl. iii, figg. 76, 77, 92, 93, pl. iv, figg. 107–109, 115–117; SOWINSKY, Zapiski Kiev. Obshch. xviii.
- G. olivianus*, p. 399, pl. i, figg. 6 & 13, pl. ii, figg. 46, 47, 57–64, *sarsii*, p. 401 [localities?]; SOWINSKY, t. c. **n. spp.**
- Grandidierella* **n. g.** (*Corophiidae*), p. 173, *mahafalensis*, in a salt lake, Madagascar, p. 166, figg. 1–19; COUTIERE, Bull. Soc. Philom. (9) vi, **n. sp.**
- Guernea laevis*, p. 267, pl. iv, fig. 26; WALKER, Rep. Ceylon Pearl Fisheries ii.
- Gulbarentsia* **n. nom.** for *Barentsia*, Stebbing non Hincks, p. 2; STEBBING, Bijdr. Dierk. 17/18.
- Haploops robusta*, p. 18, *tubicola*, p. 19, *laevis*, p. 19, pl. iii; STEBBING, t. c.
- Hippomedon squamosus*, 72° 9' N., 24° 42' E. 154 fath., p. 4, pl. i; STEBBING, t. c. **n. sp.**
- Hornellia* **n. g.** (*Gammaridae* or *Melphidippidae*), p. 268, *incerta*, Ceylon, p. 269, pl. iv, fig. 27; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Hyale nilssoni* var. (name *kuriensis* suggested if species distinct), p. 238; WALKER, t. c.

- Hyalella neveu-lemairei*, Lake Titicaca, p. 132, figg. 1 & 2; CHEVREUX, Bull. Soc. zool. France xxix, **n. sp.**
- Ichnopus taurus*, p. 238, pl. i, fig. 3; WALKER, Rep. Ceylon Pearl Fisheries ii.
- Jassa falcata*, p. 292, pl. vii, fig. 47; WALKER, t. c.
- Lembos podoceroïdes*, p. 279, pl. vi, fig. 39, *chelatus*, p. 280, pl. vi, fig. 40, Ceylon; WALKER, t. c. **n. spp.**
- Leucothoë hornelli*, Ceylon, p. 258, pl. iii, fig. 17, *stegoceras*, Singapore, p. 259, pl. iii, fig. 17A; WALKER, t. c. **n. spp.**
- Lysianax cinghalensis*, p. 242, pl. i, fig. 6; WALKER, t. c.
- L. calochir*, Ceylon, p. 243, pl. i, fig. 7; WALKER, t. c. **n. sp.**
- Mæra rubro-maculata*, p. 272, pl. v, fig. 30, *tenella*, p. 272, pl. v, fig. 31, *scissimana*, p. 273, pl. v, fig. 32, *tenuicornis*, p. 273, pl. v, fig. 33; WALKER, t. c.
- M. othonides*, Ceylon, p. 271, pl. v, fig. 29; WALKER, t. c. **n. sp.**
- Melita anisochir*, p. 270, pl. iv, fig. 28; WALKER, t. c.
- M. zeylanica*, Ceylon, p. 22, pl. v; STEBBING, Spolia Zeylan. ii, **n. sp.**
- Monoculodes hanseni*, 71° 32' N., 67° 37' E., p. 22, pl. iv; STEBBING, Bijdr. Dierk. 17/18, **n. sp.**
- Niphargus* sp., habits, &c.; GAL, Bull. Soc. Nimes xxxi: *N.*; GROCHOWSKI, Kosmos polski. xxix, pp. 81, &c.: *N. kochianus*, Lough Mask, p. 274, pl. viii, figg. 1-3, *N. subterraneus*, Kent, p. 280, pl. viii, figg. 4 & 5; KANE, Ann. Nat. Hist. (7) xiv.
- Odius carinatus*, p. 238, fig. 123; HOLMES, Harriman Alaska Exped. x.
- Onisimus caricus*, p. 11, *brevicaudatus*, p. 12; STEBBING, Bijdr. Dierk. 17/18.
- Pallasiella quadrispinosa*, habits, distribution, &c., p. 683; SAMTER & WELTNER, Zool. Anz. xxvii.
- Paratylus granulosus*, Ceylon, p. 265; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Pareiasmopus suluensis*, p. 278, pl. vi, fig. 38; WALKER, t. c.
- Paronesimus n. g.* (*Lysianassidae*) *Barentsi*, 75° 49' N., 53° 42' E., p. 14, pl. ii; STEBBING, Bijdr. Dierk. 17/18, **n. sp.**
- Periculodes serra*, Ceylon, p. 262, pl. iv, fig. 20; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Photis longicaudata*, p. 286, pl. vi, fig. 43; WALKER, t. c.
- P. longimanus*, p. 286, pl. vii, fig. 44, *nana*, p. 287, pl. vii, fig. 45, Ceylon; WALKER, t. c. **n. spp.**
- Platophium læve*, p. 295, pl. vii, fig. 51; WALKER, t. c.
- P. synptochir*, p. 296, pl. viii, fig. 52, *zeylanicum*, p. 297, pl. viii, fig. 53, Ceylon; WALKER, t. c. **n. spp.**
- Platyischnopus herdmanni*, Ceylon, p. 247, pl. ii, fig. 10; WALKER, t. c. **n. sp.**
- Pontogammarus n. subg.* of *Gammarus*, p. 394; SOWINSKY, Zapiski Kiev. Obshch. xviii.
- Pontoporeia affinis*, habits, distribution, &c., p. 686; SAMTER & WELTNER, Zool. Anz. xxvii.
- Rozinante n. g.* (near *Paramphithoë*), p. 38, *fragilis* (Goës), p. 39; STEBBING, Bijdr. Dierk. 17/18.
- Siphonocetes orientalis*, Ceylon, p. 294, p. vii, fig. 49; WALKER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Socarnella n. g.* (*Lysianassidae*), p. 239, *bonnierii*, Ceylon, p. 239, pl. i, fig. 4; WALKER, t. c. **n. sp.**
- Stenothoë marina* var. *sinhalensis* [**n. var.**], Ceylon, p. 261; WALKER, t. c.
- S. alaskensis* Pribyloff Is., p. 236, figg. 121 & 122; HOLMES, Harriman Alaska Exped. x: *S. gallensis*, Ceylon, p. 261, pl. iii, fig. 19; WALKER, Rep. Ceylon Pearl Fisheries ii: **n. spp.**

- Tiron thompsoni*, Ceylon, p. 263, pl. iv, fig. 21 ; WALKER, t. c. **n. sp.**
Tritæta antarctica, Ceylon, p. 266, pl. iv, fig. 25 ; WALKER, t. c.
Tryphosa nugax, Alaska, p. 234, figg. 119 & 120 ; HOLMES, Harriman Alaska
 Exped. x : *T. cucullata*, Ceylon, p. 244, pl. iv, fig. 8 ; WALKER, Rep.
 Ceylon Pearl Fisheries ii : **n. spp.**
Urothoe spinidigitus, Ceylon, p. 245, pl. i, fig. 9 ; WALKER, t. c. **n. sp.**
Vijaya n. g. (*Lysianassidae*), p. 241, *tenuipes*, Ceylon, p. 241, pl. i, fig. 5 ;
 WALKER, t. c. **n. sp.**
Weyprechtia heuglini, p. 41 ; STEBBING, Bijdr. Dierk. 17/18.

HYPERINA.

- Key to some families, p. 17 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x.
 Notes on spp. from Messina ; RIGGIO, Natural. Sicil. xvii, p. 95.
Archæoscina n. g. (*Scinidæ*), p. 19, *bonnieri*, Bay of Biscay, 300–400 fath.,
 p. 19, pl. iii, A ; STEBBING, Tr. Linn. Soc. London (2) Zool. x, **n. sp.**
Brachyscelus, notes on spp., p. 40 ; STEBBING, t. c.
Elsia indica, p. 237, pl. i, fig. 2 ; WALKER, Rep. Ceylon Pearl
 Fisheries ii.
Hyperia luzoni, p. 33 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x :
H. bengalensis, p. 235, dimorphism of ♂, p. 236 ; WALKER, Rep.
 Ceylon Pearl Fisheries ii.
Hyperoides, notes on spp., p. 34 ; STEBBING, Tr. Linn. Soc. London (2)
 Zool. x.
Lanceola, notes and key to spp., p. 28 ; STEBBING, t. c.
Parahyperia, referred to *Hyperoides*, p. 34 ; STEBBING, t. c.
Parascelus parvus, p. 236, pl. i, fig. 1 ; WALKER, Rep. Ceylon Pearl
 Fisheries ii.
Parascina n. g. (*Scinidæ*), p. 20, *fowleri*, Bay of Biscay, to 2000 fath.,
 p. 21, pl. ii, B ; STEBBING, Tr. Linn. Soc. London (2) Zool. x, **n. sp.**
Parathemisto oblivia, p. 36 ; STEBBING, t. c.
Prinno macropa, p. 38, text-figg. 1 & 2 ; STEBBING, t. c.
Scina, notes and key to spp., p. 22, *lepisma*, p. 27, pl. iii, B ; STEBBING,
 t. c.
Scinidæ, def. and key to genera, p. 18 ; STEBBING, t. c.
Spheromimonectes n. g. (*Mimonectidæ*) *valdiviæ* [Atlantic?], p. 621, text-
 figg. 1 & 3, *gaussi*, Atlantic, p. 627 ; WOLTERECK, Zool. Anz. xxvii,
n. spp.
Thaumatops, larval stages described under name "*Physosoma*," p. 553 ;
 WOLTERECK, t. c.
Thaumonectes n. g. (*Thaumatopsidæ*), p. 93, *ducis aprutii*, Caribbean Sea,
 p. 93 and text-fig. ; SENNA, Bull. Soc. ent. Ital. xxxv, **n. sp.**
T., compared with larva of *Thaumatops*, p. 563 ; WOLTERECK, Zool. Anz.
 xxvii.
Vibilia, notes on spp., p. 31 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x.

CAPRELLINA.

- Caprella alaskensis*, p. 241, fig. 125, *scabra*, p. 243, fig. 126, *kincaidi*,
 p. 245, figg. 127 & 128. Alaska ; HOLMES, Harriman Alaska Exped. x,
n. spp.
Metaprotella excentrica, p. 224 ; MAYER, Rep. Ceylon Pearl Fisheries ii.
Monoliropus falcimanus, Ceylon, p. 225, text-figg. 1–9 ; MAYER, t. c. **n. sp.**

8. PHYLLOCARIDA.

[See also BROWNE & VALLENTIN (26), GADZIKIEWICZ (61), +GRABAU (67), MAR. BIOL. ASS. (125), +MUNTHER (140).]

- +*Aptychopsis victoriæ*, Silurian, Victoria, p. 315, pl. xvii, fig. 4; CHAPMAN, P. Soc. Victoria xvii, **n. sp.**
- +*Ceratiocaris murchisoni* (!), p. 313, pl. xvii, figg. 5 & 6, *C. sp.*, p. 313, pl. xvii, figg. 7 & 8; CHAPMAN, t. c.
- +*C. pritchardi*, Silurian, Victoria, p. 312, pl. xvii, figg. 2 & 2a; CHAPMAN, t. c.: *C. (Limnocris) precedens*, Salina, New York, p. 92, pl. iii, figg. 5-10; CLARKE, Rep. N. York Mus. liv (1) : **n. spp.**
- +*Dithyrocaris præcox*, Silurian, Victoria, p. 314, pl. xvii, fig. 3; CHAPMAN, P. Soc. Victoria xvii, **n. sp.**
- +*Eleutherochelis n. g. whitfieldi*, p. 103; CLARKE, Rep. N. York Mus. liv (1) (see also Zittel's "Textbook of Palaeontology," English trans., p. 656).
- +*Emmelezoe decora*, Salina, New York, p. 95, pl. ii, figg. 4-11, pl. iii, figg. 1-4; CLARKE, t. c. **n. sp.**
- Nebalia bipes*, p. 9, pl. iv, figg. 79 & 80, subsp. *geoffroyi*, p. 13, pl. iv, figg. 70 & 71, subsp. *valida* **n. subsp.** p. 13, pl. iv, fig. 74, subsp. (?) *japanensis*, p. 13, pl. iv, fig. 72, subsp. *chilensis*, p. 13, pl. iv, fig. 73; THIELE, Wiss. Ergebn. Valdivia viii.
- N. longicornis*, p. 9, pl. iv, figg. 66-69, subsp. *magellanica* **n. subsp.** p. 13, pl. iv, fig. 76, subsp. *soror* **n. subsp.** p. 14, pl. iv, fig. 77; THIELE, t. c.
- Nebaliella n. g.* p. 3, *antarctica*, Kerguelen and New Zealand, p. 4, pls. i & ii, figg. 1-24; THIELE, t. c. **n. sp.**
- Nebaliopsis typica* (? var. *atlantica* **n. var.** p. 24), p. 19, pl. iii, figg. 37-54, pl. iv, figg. 55-62; THIELE, t. c.
- Paranebalia longipes*, p. 14, pl. ii, figg. 25-36, pl. iv, figg. 63 & 64; THIELE, t. c.
- +*Rhinocaris columbina*, p. 101, pl. iv, fig. 14, var. *livonensis* **n. var.**, p. 101, figg. 15 & 16, *scaphoptera*, p. 101, figg. 10 & 11, (*Elymocris*) *capsella*, p. 101, figg. 12 & 13, *bipennis*, p. 101, fig. 9; CLARKE, Rep. N. York Mus. liv (1).

B. ENTOMOSTRACA.

1. BRANCHIOPODA.

Unpaired eye, frontal organs &c.; ZOGRAF (252).

a. PHYLLOPODA.

[See also DADAY (51), EKMAN (56), ENTZ (57), +RANGE (163).]

- Artemia salina* var. *pacifica* **n. var.**, salt lakes, Honolulu and Laysan I. p. 630, figg. 1a-g; SARS, Zool. Jahrb. Syst. xix.
- Estheria propinqua*, p. 342, text-fig. 2; ZYKOFF, Zool. Anz. xxviii.
- +*E. membranacea*, p. 103, pl. iv, figg. 1-4; CLARKE, Rep. N. York Mus. liv (1).
- +*E. ortonii*, Coal Measures, Ohio, p. 109, pl. iv, figg. 5-8; CLARKE, t. c. **n. sp.**
- Streptocephalus neumanni*, Galla country, p. 371, pl. xiii; THIELE, Zool. Jahrb. Syst. xx, **n. sp.**

b. CLADOCERA.

[See also BROWNE & VALLENTIN (26), CLEVE (43), CUNNINGTON (48), ENTZ (57), KANE (100), LINDER (114), LOŠKO (118), MAR. BIOL. ASS.

(125), MONTI (136), PAVESI (155), †RANGE (163), SKORIKOW (197), SPRAGUE (202), STINGELIN (216), WESENBERG-LUND (234), ZACHARIAS (249), ZYKOFF (253, 254 & 256).]

Seasonal distribution in East Norfolk; GURNEY, Tr. Norfolk Soc. vii, p. 656.

Acroperus harpæ var. *frigida* **n. var.** p. 23, text-figg. A & B; EKMAN, Zool. Jahrb. Syst. xxi.

Alona cambouei, p. 633, figg. 6a-d; SARS, Zool. Jahrb. Syst. xix: *A. acuticostata*, var. *tridentata* **n. var.** p. 349, pl. xii, figg. 18 & 19, *verrucosa*, var. p. 350, pl. xii, figg. 20 & 21, *intermedia*, var. *minor* **n. var.** p. 351, pl. xii, fig. 22, *davidi*, p. 352, pl. xii, fig. 23; STINGELIN, op. cit. xxi.

A. novæ-zealandiæ, New Zealand, p. 634, figg. 7a & b; SARS, op. cit. xix, **n. sp.**

Alonella sculpta, p. 353, pl. xii, figg. 24 & 25, var. *insulcata* **n. var.** p. 354, pl. xii, fig. 26, pl. xiii, figg. 27 & 28; STINGELIN, op. cit. xxi.

A. breviceps, Siam, p. 354, pl. xiii, figg. 29 & 29a; STINGELIN, t. c. **n. sp.**

Bosmina coregoni gibbera, male, p. 564, text-fig.; KEILHACK, Zool. Anz. xxvii.

B. meridionalis, New Zealand, p. 631, figg. 3a-c; SARS, Zool. Jahrb. Syst. xix: *B. hagmanni*, Amazons, p. 582, pl. xx, figg. 5 & 6; STINGELIN, op. cit. xx: **n. spp.**

Bosminopsis deitersi, Amazons, p. 584, pl. xx, figg. 7-10; STINGELIN, t. c.

Bythotrephes longimanus, structure of eye, p. 138, pl. ii; EKMAN, op. cit. xxi.

Camptocercus australis var. p. 347, pl. xii, fig. 17; STINGELIN, t. c.

Ceriodaphnia asperata, p. 650, text-fig. 3; MEISSNER, Zool. Anz. xxvii: *C. dubia*, p. 631, figg. 2a & b; SARS, Zool. Jahrb. Syst. xix: *C. cornuta*, p. 339, pl. xi, figg. 9-11; STINGELIN, op. cit. xxi.

Chydorus barroisi var. *lævis* **n. var.** p. 636, figg. 9 & 9a; SARS, op. cit. xix: *C.*, variation in Indian region, p. 357, pl. xiii, figg. 32 & 33, *sphaericus* var. *parvus*, p. 359, pl. xiii, fig. 34; STINGELIN, op. cit. xxi.

C. robustus, Sumatra, p. 360, pl. xiii, figg. 35-38; STINGELIN, t. c. **n. sp.**

Dadaya macrops, p. 587, pl. xx, figg. 11 & 12; STINGELIN, op. cit. xx: *D. macrops*, p. 356; STINGELIN, op. cit. xxi.

Daphnia hyalina, forma *pavesii*, p. 639, 1 fig.; BREHM & ZEDERBAUER, Verh. Ges. Wien liv: *D.* classification of alpine forms discussed, pp. 122-137, text-figg.; EKMAN, Zool. Jahrb. Syst. xxi: *D. pulex-pennata*, variation under influence of temperature, p. 439; OSTWALD, Arch. Entwicklmech. xviii: *D. pulex*, formation and structure of ephippium; WOLFF, Biol. Centrbl. xxiv, pp. 644, 697 & 761, 11 text-figg.: *D. pulex*, reactions to light and heat; YERKES, Mark Anniversary Volume, pp. 359-377.

Diaphanosoma excisum, p. 337, pl. xi, figg. 3 & 4, *sarsi*, p. 338, pl. xi, fig. 5, var. *volzi* **n. var.** p. 339, pl. xi, figg. 6-8; STINGELIN, Zool. Jahrb. Syst. xxi.

Drepanothrix dentata, p. 209, fig. 4; ZACHARIAS, Forschber. Plon xi.

Dunhevedia crassa, p. 357, pl. xiii, figg. 30 & 31; STINGELIN, Zool. Jahrb. Syst. xxi.

Evadne, notes and key to spp., p. 41; STEBBING, Tr. Linn. Soc. London (2) Zool. x.

Holopedium gibberum, p. 57, pl. i, figg. 3 & 4; STINGELIN, Rev. Suisse Zool. xii.

H. amazonicum, Amazons; STINGELIN, Zool. Jahrb. Syst. xx, p. 577, pl. xx, figg. 1 & 2, and Rev. Suisse Zool. xii, p. 55, pl. i, figg. 1 & 2, **n. sp.**

Hyalodaphnia cristata, variation under influence of temperature, p. 421; OSTWALD, Arch. Entwicklmech. xviii.

Ilyocryptus halyi var. p. 346; STINGELIN, Zool. Jahrb. Syst. xxi.

Macrothrix spinosa, p. 633, figg. 5a & b; SARS, op. cit. xix.

M. affinis, Natal, p. 127, pl. viii, figg. 63-65; BRADY, P. Zool. Soc. London

- 1904, ii: *M. cornuta*, Turkestan, p. 508, figg. on pls. xxviii & xxix; DADAY, Zool. Jahrb. Syst. xix: *M. schauinslandi*, New Zealand, p. 632, figg. 4a & b; SARS, Zool. Jahrb. Syst. xix: **n. spp.**
- Moina propinqua*, p. 345, pl. xii, fig. 16; STINGELIN, Zool. Jahrb. Syst. xxi.
- Moinodaphnia brasiliensis*, Amazons, p. 580, pl. xx, figg. 3 & 4; STINGELIN, op. cit. xx, **n. sp.**
- Pleuroxus hastirostris*, New Zealand, p. 635, figg. 8a-c; SARS, op. cit. xix, **n. sp.**
- Podon leuckarti* attacking post-larval fish, p. 279; SCOTT, Rep. Fish. Board Scotland xxii (3).
- Pseudosida szalayii*, p. 335, pl. xi, figg. 1 & 2; STINGELIN, Zool. Jahrb. Syst. xxi.
- Saycia* **n. g.** (*Chydoridae*) p. 4, *orbicularis*, Melbourne, p. 5 & pl.; SARS, Arch. Naturv. Christian. xxvi, No. 8, **n. sp.**
- Simocephalus vetulus* var. *spinosulus* **n. var.** p. 342, *serrulatus* var. *productifrons* **n. var.** p. 343, pl. xi, figg. 12 & 13, pl. xii, fig. 14; STINGELIN, Zool. Jahrb. Syst. xxi.

2. COPEPODA.

- [See also BROWNE & VALLENTIN (26), ENTZ (57), GURNEY (78), KANE (100), LINDER (114), SCOTT in LINDSAY (115), LO BIANCO (116), MAR. BIOL. ASS. (125), MEISSNER (131), MONTI (136), NOBRE (145), PAVESI (155), PEARSON (157), RICHARD (171), A. SCOTT (190), SKORIKOW (197), STINGELIN (216), ULMER (224), VIRÉ (228), WESENBERG-LUND (234), WOLF (240), ZACHARIAS (249), ZYKOFF (253 & 254).]
- Achteres sandrae* (on *Lucioperca sandra*), Finland, p. 22, pl. i, figg. 1-14; GADD, Acta Soc. Faun. Fenn. xxvi (8), **n. sp.**
- Ætideus tenuirostris*, N. Atlantic, p. 116; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Alteutha interrupta*, p. 62, pls. xxxvi & xxxvii, *depressa*, p. 64, pl. xxxviii; SARS, Crust. Norway v.
- Amymone rubra*, p. 5, pl. i, fig. 13; BRADY, Tr. Soc. Northumb. i (1).
- Aspidiscus littoralis*, Norway, p. 79, pls. xlvi & xlvii; SARS, Crust. Norway v, **n. sp.**
- Attheyella grandidieri*, p. 639, figg. 12, a-l; SARS, Zool. Jahrb. Syst. xix.
- A. natalis*, Natal, p. 124, pl. vii, figg. 28-33; BRADY, P. Zool. Soc. London 1904, ii: *A. coronata*, Molokai, p. 641, figg. 13, a-k; SARS, Zool. Jahrb. Syst. xix: **n. spp.**
- Augaptilus fungiferus* [locality?], p. 597; STEUER, Zool. Anz. xxvii: *A. magnus*, p. 122, *gibbus*, p. 122, N. Atlantic; WOLFENDEN, J. Mar. Biol. Ass. vii: **n. spp.**
- Boeckella propinqua*, p. 636, figg. 10, a-h, *dilatata*, p. 638, figg. 11, a-e, New Zealand; SARS, Zool. Jahrb. Syst. xix, **n. spp.**
- Brachiella* [see *Thynnica*.]
- Bradya typica*, p. 46, pl. xxv; SARS, Crust. Norway v.
- B. dilatata*, Norway, p. 47, pl. xxvi; SARS, t. c. **n. sp.**
- Caligus lacustris*, p. 15, pl. i, figg. 26-30; GADD, Acta Soc. Faun. Fenn. xxvi (8).
- Candacia rotunda*, N. Atlantic, p. 118, pl. ix, figg. 10 & 11; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Canthocamptus arcticus*, p. 32, pl. i, fig. 1, *cuspidatus*, p. 33, pl. i, fig. 2, *schmeili* var. *lapponica*, **n. var.**, p. 35, pl. i, figg. 3-15; EKMAN, Zool. Jahrb. Syst. xxi.
- C. subterraneus*, Crimea, p. 323, text-figg. 1-8; CARL, Zool. Anz. xxviii, **n. sp.**

- Centropages arabicus*, p. 371, pl. xvi, figg. 1-9, pl. xvii, fig. 1, *notoceras*, p. 373, pl. xvii, figg. 2-10, pl. xviii, fig. 1, Arabian Sea; CLEVE, Arkiv Zool. i, **n. spp.**
- Chiridius vanhoeffeni*, N. Atlantic, p. 117, pl. ix, fig. 3; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Chirognatha*, **n. sect.** of *Harpacticoida*, p. 47; SARS, Crust. Norway v.
- Corycaeus erythraeus*, Red Sea, p. 376, pl. xviii, figg. 2-8, pl. xix, figg. 1-3; CLEVE, Arkiv Zool. i, **n. sp.**
- Ctenocalanus vanus*, p. 125, pl. ix, fig. 9; WOLFENDEN, J. Mar. Biol. Ass. vii.
- Cyclops salinus*, p. 7, pl. i, figg. 1-3; BRADY, Tr. Soc. Northumb. i (1): *C. leuckartii*, Natal, p. 122; BRADY, P. Zool. Soc. London 1904, ii: *C. varicans*, p. 642, fig. 14, *fimbriatus* var. *poppei*, fig. 15; SARS, Zool. Jahrb. Syst. xix.
- C. pusillus*, p. 122, pl. vi, figg. 11-18, *gibsoni*, p. 123, pl. vi, figg. 1-10, Natal; BRADY, P. Zool. Soc. London 1904, ii, **n. spp.**
- Dactylopoda*, **n. subsect.** of *Harpacticoida Chirognatha*, p. 48; SARS, Crust. Norway v.
- Diaptomus similis*, p. 502, pl. xxviii, figg. 66-71, *lobatus*, p. 504, pl. xxviii, figg. 72-76; DADAY, Zool. Jahrb. Syst. xix.
- D. steueri*, Gardasee, p. 637, 2 figg.; BREHM & ZEDERBAUER, Verh. Ges. Wien liv: *D. lekmeri*, Mexico, p. 889, text-figg. 1-4; PEARSE, Amer. Natural. xxxviii: **n. spp.**
- Ectinosoma sarsi*, p. 30, pl. xvi, *propinquum*, p. 32, pl. xvii, fig. 2, *herdmani*, p. 33, pl. xviii, fig. 2, *melaniceps*, p. 34, pl. xix, fig. 1, *normani*, p. 35, pl. xix, fig. 2, *curticorne*, p. 36, pl. xx, fig. 1, *gothiceps*, p. 37, pl. xx, fig. 2, *gracile*, p. 39, pl. xxii, fig. 1; SARS, Crust. Norway v.
- E. neglectum*, p. 31, pl. xvii, fig. 1, *elongatum*, p. 32, pl. xviii, fig. 1, *mixtum*, p. 37, pl. xxi, fig. 1, *brevirostre*, p. 38, pl. xxi, fig. 2, Norway; SARS, t. c. **n. spp.**
- Ectocyclops n. g.* (near *Cyclops*), p. 124, *rubescens*, Natal, p. 124, pl. vi, figg. 19 & 20, pl. vii, figg. 21-27; BRADY, P. Zool. Soc. London 1904, ii, **n. sp.**
- Ergasilus sieboldii*, p. 4, pl. i, figg. 20-25, *biuncinatus*, p. 11, pl. i, figg. 15-19; GADD, Acta Soc. Faun. Fenn. xxvi (8).
- Eucalanus atlanticus*, N. Atlantic, p. 113, pl. ix, figg. 3 & 4; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Euchaeta norvegica*, p. 133, text-fig. 1 (3, 4 & 8), *glacialis*, p. 134, text-fig. 1 (1, 2 & 7), *barbata*, p. 135, text-fig. 1 (5, 6 & 9); WOLFENDEN, t. c.
- Euchirella carinata*, p. 115, *curticauda*, var. *atlantica*, p. 116; WOLFENDEN, t. c.
- Eudactylina minuta* (on *Trygon pastinaca*), Dornoch Firth, p. 275, pl. xvii, figg. 1-11; SCOTT, Rep. Fish. Board Scotland xxii (3), **n. sp.**
- Faroella n. g.*, *multiserrata*, N. Atlantic, p. 117, pl. ix, figg. 26-28; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Gætanus caudani* (?), p. 114, pl. ix, figg. 20-22; WOLFENDEN, t. c.
- G. major*, N. Atlantic, p. 114, pl. ix, figg. 7 & 8; WOLFENDEN, t. c. **n. sp.**
- Gaidius major*, p. 114, pl. ix, figg. 7 & 8, *pungens*, p. 131, pl. ix, fig. 43; WOLFENDEN, t. c.
- Harpacticidae* (s. restr.), p. 48; SARS, Crust. Norway v.
- Harpacticus chelifer*, p. 6, pl. ii, figg. 9-16; BRADY, Tr. Soc. Northumb. i (1): *H. chelifer*, p. 49, pls. xxvii & xxviii, *uniremis*, p. 51, pl. xxix, *gracilis*, p. 52, pl. xxx, fig. 1, *flexus*, p. xxx, fig. 2; SARS, Crust. Norway v.
- Heteranthessius n. nom.* for *Paranthessius* T. Scott, non Claus, p. 259; SCOTT, Rep. Fish. Board Scotland xxii (3).
- Heterorhabdus longicornis*, p. 124, pl. ix, fig. 34; WOLFENDEN, J. Mar. Biol. Ass. vii.
- H. grandis*, N. Atlantic, p. 120, pl. ix, fig. 36; WOLFENDEN, t. c. **n. sp.**

- Idyida* **n. fam.** (*Hapacticoida Chirognatha*), p. 78; Sars, Crust. Norway v.
- Jeanella* **n. nom.** for *Platypsyllus* T. Scott, non Ritsema nec Westwood, p. 259; Scott, Rep. Fish. Board Scotland xxii (3).
- Labidocera similis*, off Karachi, p. 378, pl. xix, figg. 4-6; CLEVE, Arkiv Zool. i, **n. sp.**
- Laophonte mohammed*, identified with *Onychocamptus heteropus*, distribution, p. 246; ZYKOFF, Zool. Anz. xxviii.
- Lernæa lusci*, p. 277, pl. xvii, figg. 12 & 13; Scott, Rep. Fish. Board Scotland xxii (3).
- Lernæenicus sardinae*, on Sardine, Vendée, p. 1000; BAUDOUIN, C.R. Ac. Sci. cxxxix, **n. sp.** (?)
- Lernæopoda salmonea*, p. 28, pl. ii, figg. 13-22; GADD, Acta Soc. Faun. Fenn. xxvi (8).
- L. extumescens* (on *Coregonus* spp.), Finland, p. 31, pl. ii, figg. 1-12; GADD, t. c. **n. sp.**
- Limnocalanus grimaldii*, p. 339, text-fig. 1; ZYKOFF, Zool. Anz. xxviii.
- Lophothrix frontalis*, p. 120, pl. ix, figg. 41 & 42; WOLFENDEN, J. Mar. Biol. Ass. vii.
- L. securifrons*, N. Atlantic, p. 120, pl. ix, figg. 12-15; WOLFENDEN, t. c. **n. sp.**
- Lucicutia grandis* (?), p. 121, pl. ix, figg. 37 & 38, *magna*, p. 121, pl. ix, figg. 35 & 35a; WOLFENDEN, J. Mar. Biol. Ass. vii.
- L. maxima* [locality ?], p. 596, text-fig. 4; STEUER, Zool. Anz. xxvii: *L. atlantica*, N. Atlantic, p. 121; WOLFENDEN, J. Mar. Biol. Ass. vii: **n. spp.**
- Marænobiotus affinis*, Turkestan, p. 487, pl. xxvii, figg. 6-25; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- Megacalanus* **n. g.**, *princeps*, N. Atlantic, p. 112, pl. ix, figg. 1 & 2; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Metridia normani*, p. 125, pl. ix, figg. 39 & 40; WOLFENDEN, t. c.
- Microsetella norvegica*, p. 44, pl. xxiv; Sars, Crust. Norway v.
- Monstrilla grandis*, p. 243, pl. xiii, figg. 11 & 12, pl. xiv, figg. 9-11, pl. xv, figg. 1 & 2, *longicornis*, p. 244, pl. xiii, figg. 1-7, *gracilicauda*, p. 245, pl. xiii, figg. 8-10, pl. xiv, fig. 15, *anglica*, p. 246, pl. xiii, fig. 13, pl. xiv, figg. 12-14; Scott, Rep. Fish. Board Scotland xxii (3).
- M. dubia*, Forth and Clyde, p. 247, pl. xiii, fig. 14, pl. xiv, figg. 16-18; Scott, t. c. **n. sp.**
- Nitocra paradoxa*, Turkestan, p. 492, figg. on pls. xxvii & xxviii; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- Onychocamptus* [see also *Laophonte*] *heteropus*, p. 497, pl. xxviii, figg. 49-65; DADAY, t. c.
- Paracartia grani*, Norway, p. 4, pls. i-iv; Sars, Bergens Mus. Aarbog 1904, No. 4, **n. sp.**
- Paranthessius* [see *Heteranthessius*].
- Parategastes* **n. g.** (*Tegastidae*), p. 72, *sphaericus*, p. 73, pl. xliii; Sars, Crust. Norway v.
- Paraungaptilus* **n. g.**, *buchani*, N. Atlantic, p. 123, pl. ix, figg. 44 & 45; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
- Peltidiidae*, p. 61; Sars, Crust. Norway v.
- Peltidium purpureum*, p. 66, pls. xxxix & xl; Sars, t. c.
- Phyllopus bidentatus*, p. 124, pl. ix, fig. 16; WOLFENDEN, J. Mar. Biol. Ass. vii.
- Pionodesmotes phormosomæ* (on *Phormosoma uranus*), p. 61, pl. x; BONNIER, Res. Camp. Scient. Monaco xii.
- Platypsyllus* [see *Jeanella*].
- Pontopolites typicus*, p. 6, pl. i, figg. 4-12; BRADY, Tr. Soc. Northumb. i (1).
- Porcellidiidae* **n. fam.** (*Harpacticoida Chirognatha*), p. 74; Sars, Crust. Norway v.

- Porcellidium fimbriatum*, p. 76, pls. xlv & xlv; SARS, t. c.
Pseudetideus n. g. armatus, N. Atlantic, p. 115, pl. ix, figg. 29-31; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
Pseudobradya n. g. (Ectinosomidae), p. 40, *minor*, p. 41, pl. xxii, fig. 2, *similis*, p. 42, pl. xxiii, fig. 2; SARS, Crust. Norway v.
P. acuta, Norway, p. 41, pl. xxiii, fig. 1; SARS, t. c. **n. sp.**
Pseudodiptomus gracilis, p. 588; STINGELIN, Zool. Jahrb. Syst. xx.
Scolecithrix similis, p. 119, pl. ix, figg. 5 & 6, *atlanticus*, p. 120, N. Atlantic; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. spp.**
Sphæronella paradoxa, p. 251, pl. xv, figg. 17-19, *amphilochei*, p. 253, pl. xv, figg. 35 & 36; SCOTT, Rep. Fish. Board Scotland xxii (3).
S. norvegica, on *Rhachotropis leucophthalmus (Amphipoda)*, Norway, p. 348, pl. xxii, figg. 1a-1g; HANSEN, Quart. J. Micr. Sci. (n. s.) xlviii: *S. minuta* (on *Periculodes longimanus*), Dornoch Firth, p. 251, pl. xv, fig. 11-15, *callisomæ* (on *Callisoma crenata*), Clyde, p. 252, pl. xv, figg. 20-27, *cluthæ* (on *Harpinia pectinata*), p. 252, pl. xv, figg. 28-30, *pygmæa* (on *Pseudocuma similis*, locality?), p. 253, pl. xv, figg. 31-34; SCOTT, Rep. Fish. Board Scotland xxii (3): **n. spp.**
Sphæronellopsis n. g. (Choniostomatidae), p. 353, *littoralis*, on *Sarsiella hispida (Ostracoda)*, New Zealand, p. 354, pl. xxii, figg. 2a-2g; HANSEN, Quart. J. Micr. Sci. (n. s.) xlviii, **n. sp.**
Spinocalanus magnus, N. Atlantic, p. 118; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. sp.**
Stenothocheres egregius, p. 250, pl. xv, figg. 5-10; SCOTT, Rep. Fish. Board Scotland xxii (3).
Tegastes falcatus, p. 69, pl. xli, *longimanus*, p. 70, pl. xlii, fig. 2; SARS, Crust. Norway v.
T. flavidus, p. 70, pl. xlii, fig. 1, *grandimanus*, p. 71, pl. xlii, fig. 3, *nanus*, p. 72, pl. xlii, fig. 4, Norway; SARS, t. c. **n. spp.**
Tegastide n. fam. (Harpacticoida Chirognatha), p. 67; SARS, t. c.
Thaumaleus thomsoni, p. 248, pl. xiv, figg. 1-4, *rigidus*, p. 248, pl. xiii, figg. 15-17, pl. xiv, fig. 19; SCOTT, Rep. Fish. Board Scotland xxii (3).
T. zetlandicus, p. 249, pl. xiii, figg. 18 & 19, pl. xiv, figg. 20-22, pl. xv, figg. 3 & 4, *rostratus*, p. 250, pl. xiv, figg. 5-8, Shetland; SCOTT, t. c. **n. spp.**
Thynnica n. g. (Lernæopodidae) ziegléri (on *Thynnus thynnus*), Croatia, p. 48, 3 text-figg.; MICULICICH, Zool. Anz. xxviii, **n. sp.**: identified with *Brachiella thynni*, p. 345; STENTA, t. c.
Tigriopus fulvus, p. 54, pls. xxxi & xxxii; SARS, Crust. Norway v.
Valdiviella n. g. (Calanidae) oligarthra [locality?], p. 593, text-figg. 1-3; STEUER, Zool. Anz. xxvii, **n. sp.**
Xanthocalanus subagilis, p. 118, pl. ix, figg. 17 & 32, *atlanticus*, p. 119, pl. ix, figg. 24, 25, 33, *cristatus*, p. 119, pl. ix, figg. 18 & 19, N. Atlantic; WOLFENDEN, J. Mar. Biol. Ass. vii, **n. spp.**
Zaus spinatus, p. 57, pl. xxxiii, *goodsiri*, p. 59, pl. xxxv; SARS, Crust. Norway v.
Z. abbreviatus, Norway, p. 58, pl. xxxiv; SARS, t. c. **n. sp.**

3. BRANCHIURA.

[See also GADD (60), A. SCOTT (190).]

- Argulus*, p. 19, *scutiformis*, p. 20, pl. vi, figg. 32 & 33, pl. vii, figg. 34-42, *nattereri*, p. 23, pl. vii, figg. 43-52, *catostomi*, p. 25, pl. vii, figg. 53-58, *salmini*, p. 26, pl. vii, figg. 59-63, *lepidostei*, p. 27, *pugettensis*, p. 32, pl. viii, figg. 77-82, *funduli*, p. 34, *coregoni*, p. 35, pl. viii, figg. 83-87, *africanus*, p. 37, pl. viii, figg. 88-93, *japonicus*, p. 39, pl. viii, figg. 94-98, *foliaceus*, p. 40, pl. ix, figg. 99-101, *elongatus*, p. 42, pl. ix, figg.

- 102-109; THIELE, Mt. Mus. Berlin ii (4): *A. purpureus*, p. 94, pl. ii, figg. 1 & 2; RIGGIO, Natural. Sicil. xvii: *A. americanus*, structure, habits, larvæ, p. 627, text-figg. 1-21, *versicolor*, structure, p. 643, text-figg. 22-33; WILSON, P. U. S. Mus. xxvii.
- A. nobilis*, Texas, p. 28, pl. vii, figg. 64-66, pl. viii, figg. 67-76; THIELE, Mt. Mus. Berlin ii (4): *A. trilineata*, Georgia, p. 651, text-figg. 34-38; WILSON, P. U. S. Mus. xxvii: **n. spp.**
- Chonopeltis*, p. 43, *inermis*, p. 44, pl. ix, figg. 110-116; THIELE, Mt. Mus. Berlin ii (4).
- Dolops*, p. 7, *kollari*, p. 9, pl. vi, figg. 1-7, *striata*, p. 10, pl. vi, figg. 8-12, *reperta*, p. 13, pl. vi, figg. 13-15, *longicauda*, p. 14, pl. vi, figg. 16-25, *ranarum*, p. 17, pl. vi, figg. 26-31; THIELE, t. c.

4. OSTRACODA.

[See also CLEVE (43), CUNNINGTON (48), ENTZ (57), †FOX-STRANGWAYS (59), †GRABAU (67), †JUKES-BROWNE (96), †LAMPLUGH (110), LO BIANCO (116), MAR. BIOL. ASS. (125), MONTI (136), †MUNTZ (139 & 140), PAVESI (155), †RANGE (163), RICHARD (171), ULMER (224), ZACHARIAS (249).]

Revision of Danish freshwater species with keys to genera and spp., and notes on morphology and bionomics; JENSEN, Vid. Medd. 1904, pp. 1-78, pls. i-iii.

- †*Æchmina jonesi*, Silurian, Victoria, p. 308, pl. xiv, figg. 11a & b; CHAPMAN, P. Soc. Victoria xvii, **n. sp.**
- †*Aparchites subovatus*, p. 299, pl. xiv, figg. 10a-c; CHAPMAN, t. c.
- †*Argillæcia acuta*, p. 309, pl. xv, figg. 6a-c; CHAPMAN, t. c.
- A. propinqua*, off Alnmouth, p. 7, pl. ii, figg. 1-8; BRADY, Tr. Soc. Northumb. i (1), **n. sp.**
- †*Bythocypris holli*, p. 310, pl. xiv, figg. 9a & b, pl. iv, figg. 1a-c, 2a-c, *caudalis*, p. 311, pl. xv, figg. 7a-c, *phaseolus* var. *elongata*, p. 311, pl. xv, figg. 5a & b; CHAPMAN, P. Soc. Victoria xvii: †*B. simulata*, p. 233, pl. xxix, fig. 20; CHAPMAN, Ann. S. African Mus. iv (5).
- †*Ctenobolbina ciliata*, p. 575, pl. ii, figg. 8 & 9, var. *cornuta* **n. var.**, p. 575, pl. ii, figg. 5-7; RUEDEMANN, Rep. N. York Mus. liv (3).
- †*C. subrotunda*, Trenton shales, New York, p. 576, pl. ii, figg. 1-4; RUEDEMANN, t. c. **n. sp.**
- Cypria castanea*, Natal, p. 125, pl. vii, figg. 40-42, pl. viii, fig. 43; BRADY, P. Zool. Soc. London 1904, ii, **n. sp.**
- †*Cypridina antiqua*, Ordovician (?), Canada, p. 438, text-fig. 1; JONES, Geol. Mag. (5) i, **n. sp.**
- Cypris ornata*, Britain, p. 126, pl. vii, fig. 39; BRADY, P. Zool. Soc. London 1904, ii.
- C. inermis*, p. 125, pl. viii, figg. 44-49, *aratra*, p. 125, pl. vii, figg. 34-38, Natal; BRADY, t. c. **n. spp.**
- †*Cyprosina* sp., p. 312, pl. xvi, fig. 4, pl. xvii, fig. 1; CHAPMAN, P. Soc. Victoria xvii.
- †*Cythere drupacea* var. *fortior* **n. var.**, p. 199, pl. xxiii, figg. 3a, b, *corrosa* var. *grossepunctata* **n. var.**, p. 200, pl. xxiii, figg. 5a, b; CHAPMAN, op. cit. xvi.
- †*C. lobulata*, Jurassic, W. Australia, p. 199, pl. xxiii, figg. 4a, b; CHAPMAN, t. c.: †*C. clarkana*, p. 98, pl. xxxv, figg. 1-10, var. *minuscule* **n. var.**, p. 99, pl. xxxv, figg. 11-14, *planibasalis*, p. 99, pl. xxxviii, figg. 1-3, *calverti*, p. 100, pl. xxxviii, figg. 11-13, *inæquivalvis*, p. 101, pl. xxxv, figg. 15-17, *plebeia*, p. 102, pl. xxxv, figg. 20-29, var. *modica* **n. var.**, p. 103, pl. xxxv, figg. 18 & 19, var. *capax* **n. var.**, p. 103, pl. xxxv,

- figg. 30-33, *burnsi*, p. 103, pl. xxxvi, figg. 34-39, *paucipunctata*, p. 105, pl. xxxviii, figg. 7-9, *tuomeyi*, p. 105, pl. xxxviii, figg. 4-6, *porcella*, p. 106, pl. xxxvi, figg. 26-33, *nitidula*, pl. xxxvi, figg. 21-23, var. *calvertensis* **n. var.**, p. 108, pl. xxxvi, figg. 24 & 25, *punctistriata*, p. 108, pl. xxxviii, figg. 22-24, *vaughani*, p. 109, pl. xxxviii, figg. 25-27, *francisca*, p. 110, pl. xxxviii, figg. 19-21, *subovalis*, p. 111, pl. xxxviii, figg. 14 & 15, *martini*, p. 112, pl. xxxvi, figg. 11-15, *dorsicornis*, p. 113, pl. xxxvi, fig. 16, var. *bicornis* **n. var.**, p. 114, pl. xxxviii, figg. 32 & 33, *lienenklausi*, p. 114, pl. xxxviii, fig. 31, *producta*, p. 115, pl. xxxvi, fig. 17, pl. xxxviii, figg. 28-30, *micula*, p. 116, pl. xxxvi, figg. 18-20, *exanthemata*, p. 117, pl. xxxvi, figg. 1-5, *rugipunctata*, p. 118, pl. xxxviii, figg. 16 & 17, *evax*, p. 119, pl. xxxvi, figg. 6-8, var. *oblongula* **n. var.**, p. 119, pl. xxxvi, figg. 9 & 10, *spiniplicata*, p. 120, pl. xxxviii, fig. 18, *shattucki*, p. 121, pl. xxxviii, fig. 10, Miocene, Maryland; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904 : **n. spp.**
- Cythereis sicula*, p. 525, pl. xxx, figg. 123-142; DADAY, Zool. Jahrb. Syst. xix : †*C. cornuta* var. *americana* **n. var.**, p. 122, pl. xxxvii, figg. 29-33; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904.
- †*C. alaris*, Miocene, Maryland, p. 123, pl. xxxviii, figg. 34-36; ULRICH & BASSLER, t. c. **n. sp.**
- †*Cytheridea longicaudata*, Cretaceous, Pondoland, p. 234, pl. xxix, fig. 21; CHAPMAN, Ann. S. African Mus. iv (5) : †*C. subovata*, p. 124, pl. xxxvii, figg. 1-8, *chesapeakeensis*, p. 125, pl. xxxvii, fig. 9, Miocene, Maryland; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904 : **n. spp.**
- †*Cytherideis ashermani*, p. 126, pl. xxxvii, figg. 10-16, *cylindrica*, p. 126, pl. xxxvii, fig. 17, *subæqualis*, p. 127, pl. xxxvii, fig. 28, *semicircularis*, p. xxxvii, figg. 18-20, *longula*, p. 128, pl. xxxvii, figg. 21-27; ULRICH & BASSLER, t. c. **n. spp.**
- †*Cytheropteron australiense*, Jurassic, W. Australia, p. 203, pl. xxiii, figg. 7a, b; CHAPMAN, P. Soc. Victoria xvi : †*C. elongato-concentricum*, Cretaceous, Pondoland, p. 235, pl. xxix, figg. 23, 23a; CHAPMAN, Ann. S. African Mus. iv (5) : †*C. nodosum*, Miocene, Maryland, p. 129, pl. xxxviii, figg. 37-40; ULRICH & BASSLER, Maryland Geol. Survey, Miocene, 1904 : **n. spp.**
- Eucandona stummeri*, Turkestan, p. 515, pl. xxix, figg. 98-111; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- †*Isochilina labrosa*, p. 299, pl. xvi, figg. 3a, b; CHAPMAN, P. Soc. Victoria xvii.
- Limnocythere dubiosa*, p. 521, figg. on pls. xxix & xxx, 5 text-figg.; DADAY, Zool. Jahrb. Syst. xix.
- †*Loxoconcha elongata*, p. 200, pl. xxiii, figg. 2a, b, *jurassica*, p. 201, pl. xxiii, figg. 6a, b, Jurassic, W. Australia; CHAPMAN, P. Soc. Victoria xvi, **n. spp.**
- †*Macrocypris simplex*, p. 233, pl. xxix, figg. 22a, b; CHAPMAN, Ann. S. African Mus. iv (5) : †*M. vinei* (?), p. 310, pl. xiv, figg. 7a-c; CHAPMAN, P. Soc. Victoria xvii.
- †*M. flexuosa*, Silurian, Victoria, p. 309, pl. xiii, fig. 6; CHAPMAN, t. c. **n. sp.**
- †*Paradoxorhyncha* **n. g.** (near *Cytheropteron*), p. 202, *foveolata*, Jurassic, W. Australia, p. 202, pl. xxiii, figg. 1a, b; CHAPMAN, op. cit. xvi, **n. sp.**
- Potamocypris almásyi*, Turkestan, p. 519, pl. xxix, figg. 89-97; DADAY, Zool. Jahrb. Syst. xix, **n. sp.**
- †*Primitia trigonalis*, p. 300, pl. xv, figg. 8a-c, *punctata*, p. 301, pl. xiii, figg. 2a-c, *matutina*, p. 302, pl. xiii, figg. 5a-b, *reticristata*, p. 303, pl. xiii, figg. 7a-c, *obsoleta*, p. 303, pl. xiii, figg. 8a-c, *elongata* var. *nuda*, p. 304, pl. xiv, figg. 3a-c, *paucipunctata*, p. 305, pl. xiv, figg.

- 4a-c, pl. xv, figg. 2a-c, *striata*, p. 305, pl. xv, figg. 3a-c, *semicircularis*, p. 306, pl. xv, figg. 4a-c, *unicornis*, p. 306, pl. xv, figg. 6a & b ; CHAPMAN, P. Soc. Victoria xvii.
- +*P. subtrigonalis*, p. 301, pl. xiii, figg. 1a-c, *semicultrata*, p. 301, pl. xiii, figg. 4a-c, *halli*, p. 304, pl. xiv, figg. 2a-c, Silurian, Victoria ; CHAPMAN, t. c. **n. spp.**
- Stenocypris chevreuxii*, Britain, p. 127, pl. viii, figg. 58-62 ; BRADY, P. Zool. Soc. London 1904, ii.
- S. perarmata*, Natal, p. 126, pl. viii, figg. 50-57 ; BRADY, t. c. **n. sp.**
- +*Xestoleberis wrightii* var. *oblonga* **n. var.**, p. 308, pl. xv, figg. 1a & b ; CHAPMAN, P. Soc. Victoria xvii.
- +*X. holliana*, p. 306, pl. xiii, figg. 3a-c, *lilydalensis*, p. 307, pl. xiv, figg. 1a-c, 5a-c, 8a, b, Silurian, Victoria ; CHAPMAN, t. c. **n. spp.**

5. CIRRIPEDIA.

[See also +COUFFON (45), +DENNANT & KITSON (52), +FOX-STRANGWAYS (59), GRUVEL (72-75), +HOLMES (90), +JUKES-BROWNE (96), MAR. BIOL. ASS. (125), NOBRE (145), PATIENCE (152), STEAD (205).]

Revision of Cirripedia with figg. and descr. of all recent spp. ; GRUVEL, Monogr. Cirripèdes.

Thecostraca **n. nom.** for *Cirripedia* ; GRUVEL, t. c.

Acrothoracica **n. nom.** for *Abdominalia* Darwin ; GRUVEL, t. c.

Alcippe lampas, anatomy ; GENTHE, Zool. Jahrb. Syst. xxi, pp. 181-200, pls. xi & xii.

Balanus sp., in nearly fresh water, Norfolk, p. 645 ; GURNEY, Tr. Norfolk Soc. vii : +*B. concavus*, Miocene, p. 293, text-figg. 1-3 ; CUSHMAN, Amer. Geol. xxxiv : +*B. concavus*, p. 94, pls. xxxiii & xxxiv ; MARTIN, Maryland Geol. Survey, Miocene, 1904 : +*B. sp.*, Miocene, S. Russia, p. 72, pl. iv, figg. 51-54 ; MIKHAILOVSKY, Trudui geol. Kom. xiii.

Lepas pectinata, Cypris stage, p. 42, text-figg. 3-7 ; STEBBING, Tr. Linn. Soc. London (2) Zool. x.

Pæcilasma aurantium, anatomy and later larval stages ; HOFFENDAHL, Zool. Jahrb. Anat. xx, pp. 363-398, pls. xxiii-xxvi.

+*Pollicipes siluricus*, Utica shale, New York, p. 578, pl. ii, figg. 16-24 ; RUEDEMANN, Rep. N. York Mus. liv (3), **n. sp.**

Proteolepas hansenii (descr. from larvæ), Trieste, p. 228 ; STEUER, Zool. Anz. xxviii, **n. sp.**

Sacculina carcini, early stages of development ; ABRIC, C.R. Ac. Sci. cxxxix, pp. 430-432.

Scalpellum pollicipedoides, near Jedan Ids., p. 92, figg. 4-6, *aries* (not descr.), p. 92 ; HOEK, P. Ak. Amsterdam vii, **n. spp.**

+*Turrilepas* (?) *filosus*, Utica shale, New York, p. 577, pl. ii, figg. 13-15 ; RUEDEMANN, Rep. N. York Mus. liv (3), **n. sp.**

GIGANTOSTRACA

(XIPHOSURA, TRILOBITA, EURYPTERIDA).

I. TITLES.

1. AGNUS, —. *Palæoblattina douvillei*, considéré d'abord comme un Insecte est une point génale de Trilobite. C.R. Ac. Sci. cxxxviii, pp. 398 & 399.
2. BEECHER, CHARLES E. Note on a new Permian Xiphosuran from Kansas. Amer. J. Sci. (4) xviii, pp. 23 & 24, 1 fig. in text.
3. BOLTON, H. The Palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii, pp. 378-415 & 578-650.
4. CARLSON, A. J. The nervous origin of the heart-beat in *Limulus*, and the nervous nature of co-ordination or conduction in the heart. Amer. J. Physiol. xii, pp. 67-74, 1 text-fig.
5. CLARKE, JOHN M. Notes on Paleozoic crustaceans. Rep. N. York Mus. liv (1), pp. 83-119, pls. i & iv (1902).
6. DELGADO, J. F. NERY. Faune cambrienne du Haut-Alemtejo (Portugal). Commun. geol. Portugal v, pp. 307-374, pls. i-vi.
7. DESTINEZ, P. Faune et flore des psammites du Condroz (Famennien). Ann. Soc. geol. Belgique xxxi, Mem. pp. 247-257.
8. DREVERMANN, FR. Ueber Untersilur in Venezuela. N. Jahrb. Min. 1904 (1), pp. 91-93, pl. x.
9. ETHERIDGE, R. Trilobite remains collected in the Florentine valley, West Tasmania, by Mr T. Stephens, M.A. Rec. Austral. Mus. v (2), pp. 98 (24)-101 (27), pl. x.
10. FOX, HOWARD. Supplementary notes on the distribution of fossils on the north coast of Cornwall, south of the Camel. Tr. geol. Soc. Cornwall xii, pp. 752-756, 1 text-fig.
11. GRABAU, AMADEUS W. Guide to the geology and paleontology of Niagara Falls and vicinity. Rep. N. York Mus. liv (4), pp. 1-284, 18 pls., 190 text-figg.
12. GRIFFITH, JOHN. Some Rhondda cairns. Tr. Cardiff Soc. xxxvi, pp. 118-125, pls. i-iv. [Telson of Gigantostracan found in burial place of Bronze Age.]
13. HARBORT, E. Ueber mitteldevonische Trilobitenarten im Iberger Kalk bei Grund im Harz. Zeitschr. Deutsch. geol. Ges. lv (4), pp. 475-485, pls. xxiii & xxiv.
14. HAYDEN, H. H. The Geology of Spiti, with parts of Bashahr and Rupshu. Mem. geol. Surv. India xxxvi (1), pp. 129+6, 18 plates.
15. HIND, WHEELTON. On the homotaxial equivalents of the Lower Culm of North Devonshire. Geol. Mag. (5) i, pp. 392-403, 2 text-figg.
16. HOLM, G. Kinnekulles Berggrund, in "Kinnekulle, dess Geologi och den tekniska användningen af dess Bergarter." Sveriges geol. Unders. Afh. Ser. C., No. 172, pp. 1-76, 2 pls. & figg. in text.
17. KITTL, ERNST. Geologie der Umgebung von Sarajevo. Jahrb. geol. Reichsanst. liii, pp. 515-738, 1 map, pls. xxi-xxiii, & 47 figg. in text.

18. MAILLEUX, EUGÈNE. Quelques mots sur les Trilobites du Couvinien des environs de Couvin. Bull. Soc. Belge Geol. xvii, Pr.-verb. pp. 579-582, 1 text-fig.
19. MUNTHE, HENR. Stratigrafiska studier öfver Gotlands silurlager. Geol. Foren. Stockholm Forh. xxiv, pp. 221-273, text-figg. (1902). Reprinted as Sveriges geol. Unders. Afh., Ser. C., No. 192.
20. PARKINSON, J. H. The zoning of the Culm in South Germany. Geol. Mag. (5) i, pp. 272-276.
21. REED, F. R. COWPER. The Lower Palæozoic Trilobites of the Girvan district, Ayrshire. Part II. Pp. 49-96, pls. vii-xiii. Pal. Soc. Mon. lviii, 1904.
Quoted hereafter as Tril. Girvan ii.
22. ——. Sedgwick Museum Notes. New fossils from the Haverfordwest district. Geol. Mag. (5) i, pp. 106-109, pl. v.
23. ——. Sedgwick Museum Notes. New fossils from the Haverfordwest district, ii. T. c. pp. 383-388, pl. xii.
24. SMITH, FREDERIC F. Notes on a bicaudate specimen of *Limulus polyphemus*. Tufts Coll. Stud. No. 8, pp. 379-382, 1 text-fig.
25. SMYČKA, F. Novější nálezy v čelechovském devonu. Vestník Klub. Prostejove vii, pp. 62-72, pl. i.
26. WALCOTT, CH. D. *Asaphus emoryi*. Palæontologia Universalis. Fasc. ii, pl. 28 & text.
27. WALTHER, JOHANNES. Die fauna der Solnhofener Plattenkalke bionomisch betrachtet. Denk. Ges. Jena xi (Festschr. Ernst Haeckel), pp. 133-214, pl. viii, 21 text-figg.

II. SUBJECT-INDEX.

Physiology of heart in *Limulus* ; CARLSON (4).

Bicaudate abnormality in *Limulus* ; SMITH (24).

Telson of undetermined Gigantostracan found in burial place of Bronze Age ; GRIFFITH (12).

Palæoblattina douvillei, described as an Insect, is part of an Asaphid Trilobite ; AGNUS (1).

III. DISTRIBUTION.

Jurassic, Solnhofen Limestones, *Limulus* ; WALTHER (27).

Palæozoic, Niagara region, *Trilobita* and *Eurypterida* ; GRABAU (11).

Permian, Kansas, *Prestwichia*, n. sp. ; BEECHER (2).

Carboniferous, Lower Culm, Devonshire, *Trilobita* ; HIND (15) : Culm, Sarajevo, *Trilobita*, n. sp. ; KITTL (17) : Culm, S. Germany, *Trilobita* ; PARKINSON (20) : Coal Measures, Lancashire, *Xiphosura* ; BOLTON (3).

Devonian, Cornwall, *Trilobita* ; FOX (10) : Couvin, *Trilobita*, n. sp. ; MAILLEUX (18) : Moravia, *Trilobita* ; SMYČKA (25) : Upper Devonian, Condroz, *Eurypterida* ; DESTINEZ (7) : Middle Devonian, "Iberger kalk," *Trilobita* ; HARBORT (13).

Silurian and Cambrian, Kinnekulle, Sweden, *Trilobita* ; HOLM (16).

Silurian, *Trilobita* ; WALCOTT (26) : Haverfordwest, *Trilobita*, n. sp. ; REED (22) : Haverfordwest, *Trilobita* ; REED (23) : Silurian, Girvan, Ayrshire, *Trilobita*, n. spp. ; REED (21) : Gothland, *Trilobita*, *Eurypterida* ;

MUNTHE (19): Silurian, Spiti, Himalayas, *Trilobita*; HAYDEN (14): Upper Silurian or Old Red Sandstone, undetermined Gigantostracan; GRIFFITH (12): Lower Silurian, Venezuela, *Trilobita*, n. sp.; DREVERMANN (8): Salina, New York, *Xiphosura*, n. sp.; CLARKE (5).

Cambrian, Portugal, *Trilobita*, n. spp.; DELGADO (6): Spiti, Himalayas, *Trilobita*; HAYDEN (14): Cambrian (?), Tasmania, *Trilobita*, n. sp.; ETHERIDGE (9).

IV. SYSTEMATIC.

XIPHOSURA.

[See also +BOLTON (3), +WALTHER (27).]

Limulus, physiology of heart; CARLSON, Amer. J. Physiol. xii, pp. 67-74, 1 text-fig.: *L. polyphemus*, abnormal specimen; SMITH, Tufts Coll. Stud. No. 8, pp. 379-382, 1 text-fig.

+*Prestwichia signata*, Permian, Kansas, p. 23, fig. 1; BEECHER, Amer. J. Sci. (4) xviii, n. sp.

+*Pseudoniscus roosevelti*, Salina, New York, p. 89, pls. i & ii, figg. 1-3; CLARKE, Rep. N. York Mus. liv (1), n. sp.

+TRILOBITA.

[See also AGNUS (1), GRABAU (11), HAYDEN (14), HIND (15), HOLM (16), MUNTHE (19), PARKINSON (20).]

Acidaspis pigra, p. 477, pl. xxiii, figg. 1, 1a-c; HARBORT, Zeitschr. Deutsch. geol. Ges. lv (4).

Arethusina konincki, p. 83, pl. xi, figg. 14 & 15; REED, Tril. Girvan ii.

Asaphus sp., p. 49, pl. vii, fig. 9; REED, t. c.: *A. (Isotelus) emoryi*, type specimen re-figured; WALCOTT, Pal. Univ. Fasc. ii, pl. 28.

Bohemilla sp., p. 53, pl. viii, fig. 4; REED, Tril. Girvan ii.

Bronteopsis scotica, p. 94, pl. xiii, figg. 5-13; REED, t. c.

B. ardmillanensis, Silurian, Ayrshire, p. 92, pl. xiii, figg. 1-4; REED, t. c. n. sp.

Bronteus granulatus, p. 483, pl. xxiv, figg. 1-7, *flabellifer*, p. xxiv, fig. 8; HARBORT, Zeitschr. Deutsch. geol. Ges. lv (4): *B. andersoni*, p. 87, pl. xii, figg. 8-11, sp. ind. p. 91, pl. xii, fig. 15, sp. ind. p. 91, pl. xii, fig. 16; REED, Tril. Girvan ii.

B. craigensis, p. 89, pl. xii, figg. 12 & 13, *grayi*, p. 90, pl. xii, fig. 14, Silurian, Ayrshire; REED, t. c. n. spp.

Calymmene senaria, Lower Silurian, Venezuela, p. 91, pl. x, fig. 2; DREVERMANN, N. Jahrb. Min. 1904 (1), n. sp.

Cyclopyge armata, p. 51, pl. vii, figg. 11-14, pl. viii, fig. 1, *rediviva*, p. 52, pl. viii, figg. 2 & 3; REED, Tril. Girvan ii.

Cyphaspis ceratophthalma, p. 479, pl. xxiii, figg. 3, 3a, 4, 4a, 5, 5a-c, *convexa*, p. 482, pl. xxiii, figg. 2, 2a-c; HARBORT, Zeitschr. Deutsch. geol. Ges. lv (4): *C. megalops*, p. 82; REED, Tril. Girvan ii.

Dikelocephalus florentinensis, Cambrian (?), Tasmania, p. 25, pl. x, fig. 4; ETHERIDGE, Rec. Austral. Mus. v (2), n. sp.

Encrinurus multisegmentatus, p. 387, pl. xii, fig. 5; REED, Geol. Mag. (5) i.

Hicksia n. g. (near *Liostracus*), p. 327, *elvensis*, p. 333, figg. on pls. i, ii, iv & v, *spherica*, p. 335, figg. on pls. i-vi, *transtaganensis*, p. 337, figg. on pls. i, ii, v, vi, *walcotti*, p. 338, figg. on pls. ii-v, *castroi*, p. 340, figg. on pls. i, v, vi, *hughesi*, p. 341, figg. on pls. ii, v, vi, *barroisi*, p. 342, figg. on pl. ii, *dewalquei*, p. 343, figg. on pls. i, ii, v, *minuta*, p. 344, figg. on pls. ii & v, Cambrian, Portugal; DELGADO, Commun. geol. Portugal v, n. spp.

- Homalonotus barratti*, p. 753, text-fig. ; Fox, Tr. geol. Soc. Cornwall xii.
- Illænus æmulus*, p. 54, pl. viii, fig. 5, var. p. 55, pl. viii, figg. 6-11, *barriensis*, p. 58, pl. ix, figg. 1 & 2, *bowmani*, p. 59, var. *longicapitatus*, p. 60, *davisi*, p. 60, *latus*, p. 63, pl. ix, figg. 6 & 7, *macallumi*, p. 65, pl. ix, figg. 8 & 9, *murchisoni*, p. 65, pl. ix, figg. 10 & 12, *nexilis*, p. 66, pl. ix, fig. 13, *portlocki*, p. 67, pl. ix, figg. 14 & 16, pl. x, figg. 1 & 1a, *thomsoni*, p. 70, pl. x, figg. 6-8, sp., cf. *oculosus*, p. 71, pl. x, figg. 9-11, sp., cf. *perovalis*, p. 72, pl. x, fig. 12, sp. ind. p. 73, pl. x, fig. 13 ; REED, Tril. Girvan ii.
- I. balclatchiensis*, p. 56, pl. viii, figg. 12-16, *extensus*, p. 61, pl. ix, figg. 3-5, *shallochensis*, p. 68, pl. x, figg. 2-5, Silurian, Ayrshire ; REED, t. c. **n. spp.**
- Lichas* (*Corydocephalus*) *anglicus*, p. 95, *geikiei*, p. 96, pl. xiii, figg. 14, 14a, pl. xiv, fig. 1 ; REED, t. c.
- Menocephalus*? (*Tornquistia*) sp., cf. *nicholsoni*, p. 86, pl. xii, figg. 3-7 ; REED, t. c.
- Metadoxides bornemanni*, p. 345, pl. iii, fig. 33, pl. vi, fig. 1 ; DELGADO, Commun. geol. Portugal v.
- Microdiscus caudatus*, p. 349, figg. on pls. iii & v, *subcaudatus*, p. 350, figg. on pls. iii & v, *wenceslasi*, p. 350, figg. on pls. iii & v, *souzaei*, p. 351, figg. on pls. iii & v, *woodwardi*, p. 353, figg. on pls. iii & v, Cambrian, Portugal ; DELGADO, t. c. **n. spp.**
- Niobe* sp., p. 26, pl. x, figg. 1-3 ; ETHERIDGE, Rec. Austral. Mus. v (2).
- Olenellus* sp., p. 325, pl. iv, fig. 9, pl. v, fig. 9 ; DELGADO, Commun. geol. Portugal v.
- O. macphersoni*, Cambrian, Portugal, p. 347, figg. on pls. iv-vi ; DELGADO, t. c. **n. sp.**
- Olenopsis* sp., p. 325, pl. i, fig. 8 ; DELGADO, t. c.
- Paradoxides*, aff. *abenacus*, p. 322, pl. i, fig. 10, pl. v, fig. 35, aff. *spinosus*, p. 323, pl. i, figg. 4 & 12, aff. *tessini*, p. 324, pl. i, figg. 7 & 9, pl. vi, fig. 5 ; DELGADO, t. c.
- P. choffati*, p. 319, pl. i, figg. 1-3, 16, pl. v, fig. 3, *costæ*, p. 323, pl. i, figg. 5, 6, 11, Cambrian, Portugal ; DELGADO, t. c. **n. spp.**
- Phacops* (*Dalmanites*) *socialis*, p. 383, pl. xii, fig. 2, aff. *incertus*, p. 384, pl. xii, fig. 4 (*Chasmops*) *conicophthalmus*, p. 385, pl. xii, fig. 1, *macroura* (?), p. 386, pl. xii, fig. 3 ; REED, Geol. Mag. (5) i.
- P. robertsi*, (?) Silurian, Haverfordwest, p. 106, pl. v ; REED, t. c. **n. sp.**
- Phillipsia bittneri*, Culm, Sarajevo, p. 680, pl. xxi, figg. 30-32 ; KITTL, Jahrb. geol. Reichsanst. liii, **n. sp.**
- Phillipsinella parabola*, p. 85, pl. xii, figg. 1, 1a, 2 ; REED, Tril. Girvan ii.
- Proetus girvanensis*, p. 74, pl. xi, figg. 1-3, *latifrons*, p. 76, pl. xi, figg. 4 & 4a, *procerus*, p. 77, pl. xi, figg. 5, 6, 6a, *stokesi*, p. 79, pl. xi, figg. 10 & 11, sp., cf. *obconicus*, p. 81, pl. xi, fig. 12, sp. ind. pl. xi, fig. 13 ; REED, Tril. Girvan ii : *P. celechovicensis*, p. 63, pl. i, figg. 1-3 ; SMYČKA, Vestník Klub. Prostejove vii.
- P. barroisi*, Devonian, Couvin, p. 581, text-figg. a-d ; MAILLEUX, Bull. Soc. Belge Geol. xvii, Pr.-verb. : *P. pseudolatifrons*, Silurian, Ayrshire, p. 78, pl. xi, figg. 7-9 ; REED, Tril. Girvan ii : **n. spp.**
- Stygina latifrons*, p. 50, pl. vii, fig. 10 ; REED, t. c.

†EURYPTERIDA.

[See DESTINEZ (7), GRABAU (11), MUNTHE (19).]

PYCNOGONIDA.

I. TITLES.

1. CARPENTER, GEO. H. Report on the Pantopoda collected by Professor Herdman at Ceylon in 1902. In "Report to the Government of Ceylon on the Pearl Oyster Fisheries in the Gulf of Manaar," by W. A. Herdman. 4to, Royal Society, London, Part II, Supplementary Report xiii, pp 181-184, 1 pl.
Quoted hereafter as "Rep. Ceylon Pearl Fisheries ii."
2. COLE, LEON J. Pycnogonida of the West Coast of North America. Harriman Alaska Exped. x, pp. 249-298, pls. xi-xxvi.
Review by W. H. DALL, Science (n. s.) xx, pp. 462-464.
DALL, W. H. [See COLE (2).]
3. HODGSON, T. V. On a new Pycnogonid from the South Polar Regions. Ann. Nat. Hist. (7) xiv, pp. 458-462, pl. xiv, 1 text-fig.
4. LANKESTER, E. RAY. The Structure and Classification of the Arachnida. Quart. J. Mikr. Sci. (n. s.) xlviii, pp. 165-269, 78 text-figg.
Classification by R. I. Pocock.
Reprint of article "Arachnida," Encycl. Brit. xxv (Zool. Rec. 1902, *Pyc.* 3).
5. LOMAN, J. C. C. Beiträge zur Kenntnis der Fauna von Süd-Afrika. Ergebnisse einer Reise von Prof. Max Weber im Jahre 1894. v. Pycnogoniden aus der Capcolonie und Natal. Zool. Jahrb. Syst. xx, pp. 375-386, pl. xiv.
6. ——. *Pipetta weberi*, n. g. et n. sp., with notes about the proboscis of the *Pycnogonida*. Tijdschr. Nederland. Dierk. Ver. (2) viii, pp. 259-266, 7 text-figg.
7. MARINE BIOLOGICAL ASSOCIATION. Plymouth Marine Invertebrate Fauna. Being Notes of the local distribution of species occurring in the neighbourhood. J. Mar. Biol. Ass. vii, pp. 155-298, 1 chart. [*Pycnogonida*, pp. 258 & 259.]
8. MORGAN, T. H. Notes on Regeneration. Biol. Bull. vi, pp. 159-172, 4 text-figg. [*Pycnogonida*, pp. 163-167, text-figg. 1-3.]
9. NOBRE, AUGUSTO. Subsídios para o estudo da fauna marinha do norte de Portugal. Ann. Sci. nat. Porto viii, pp. 37-94, pl. i.
POCOCK, R. I. [See LANKESTER (4).]

II. SUBJECT-INDEX.

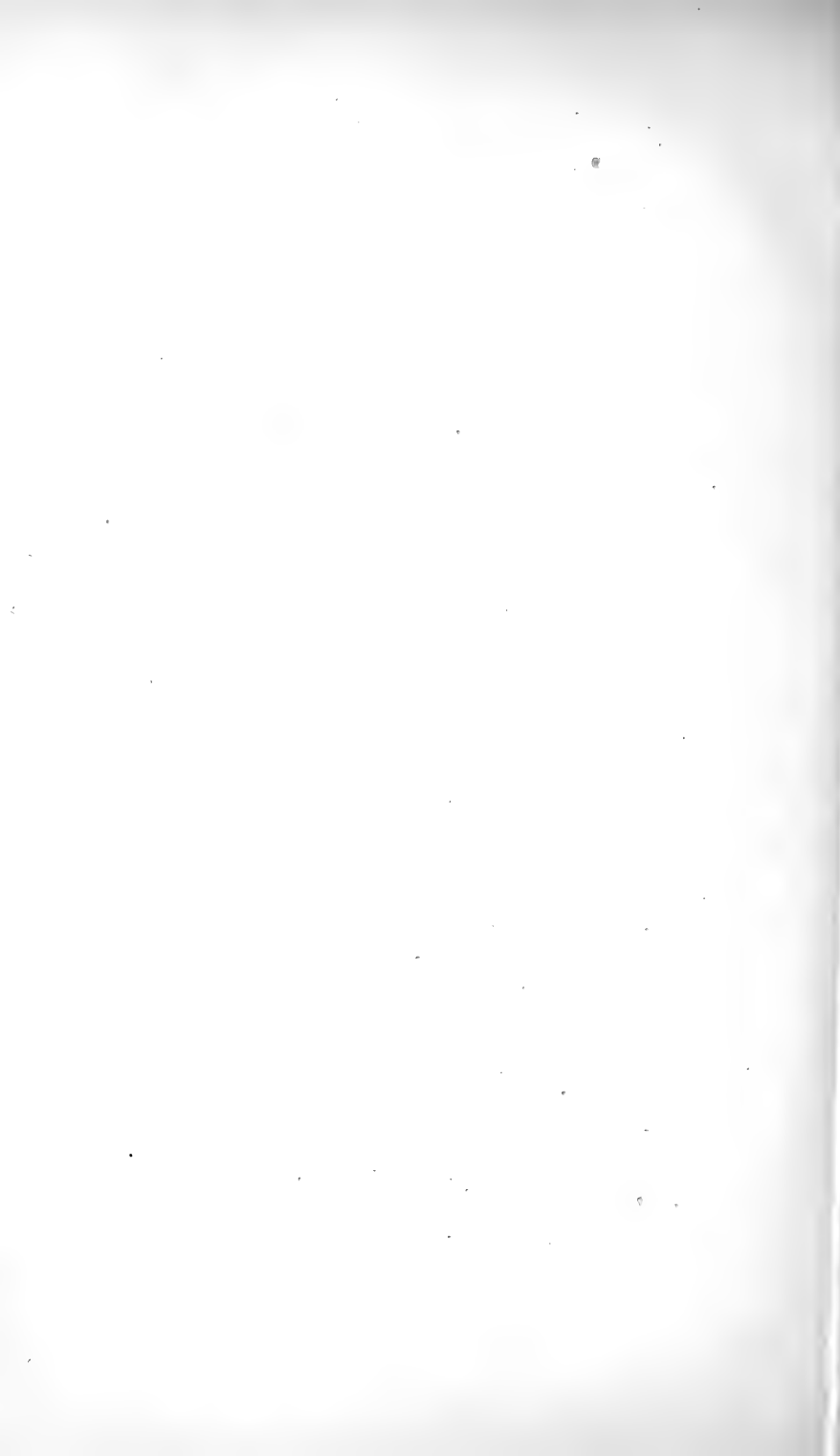
Morphology and Classification of Pycnogonida; LANKESTER & POCOCK (4).
 Morphology of proboscis in *Pipetta* and other *Pycnogonida*; LOMAN (6).
 Morphology of *Pentanymphe*; HODGSON (3).
 Regeneration in *Phoxichilidium*; MORGAN (8).

III. DISTRIBUTION.

- Plymouth, Pycnogonida; MAR. BIOL. ASS. (7).
 Portugal, Pycnogonida; NOBRE (9).
 South Africa, Pycnogonida, n. spp.; LOMAN (5).
 Ceylon, Pycnogonida, n. spp.; CARPENTER (1).
 Banda Sea, Pycnogonida, n. sp.; LOMAN (6).
 N. W. America, California to Bering Sea, Pycnogonida, n. spp.;
 COLE (2).
 Antarctic, McMurdo Bay, Pycnogonida, n. sp.; HODGSON (3).

IV. SYSTEMATIC.

- Ammothea latifrons*, Bering Sea, p. 263, pl. xi, fig. 3, pl. xvi, figg. 1-9, pl. xvii, figg. 1-3, *alaskensis*, Alaska, p. 266, pl. xii, fig. 4, pl. xvii, figg. 4-12, *gracilipes*, California, p. 269, pl. xii, fig. 5, pl. xviii, figg. 1-6, *pribilofensis*, Bering Sea, p. 270, pl. xii, fig. 6, pl. xviii, figg. 7 & 8, pl. xix, figg. 1-8; COLE, Harriman Alaska Exp. x: *A. brevicauda*, Port Elizabeth, p. 376, pl. xiv, figg. 1-4; LOMAN, Zool. Jahrb. Syst. xx : **n. spp.**
- Ammothella tuberculata*, N. California, p. 273, pl. xii, fig. 7, pl. xx, figg. 1-6, *spinifera*, p. 275, pl. xii, fig. 8, pl. xx, figg. 7-9, pl. xxi, figg. 1-6; COLE, Harriman Alaska Exp. x, **n. spp.**
- Anoplodactylus erectus*, California, p. 289, pl. xiv, fig. 12, pl. xxvi, figg. 1-9; COLE, t. c. **n. sp.**
- Clotenia occidentalis*, California, p. 281, pl. xiii, fig. 9, pl. xxiii, figg. 4-8; COLE, t. c. **n. sp.**
- Discoarachne brevipes*, p. 379, pl. xiv, figg. 7-11; LOMAN, Zool. Jahrb. Syst. xx.
- Halosoma n. g.*, p. 286, *viridintestinalis*, California, p. 286, pl. xiv, fig. 11, pl. xxiv, figg. 6-8, pl. xxv, figg. 1-4; COLE, Harriman Alaska Exp. x, **n. sp.**
- Hannonia typica*, p. 383, pl. xiv, figg. 12-15; LOMAN, Zool. Jahrb. Syst. xx.
- Lecythorhynchus marginatus*, California, p. 260, pl. xi, figg. 1 & 2, pl. xv, figg. 1-8; COLE, Harriman Alaska Exp. x, **n. sp.**
- Nymphon longicaudatum*, Ceylon, p. 183, figg. 8-14; CARPENTER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Pentanympheon n. g.*, p. 459, *antarcticum*, McMurdo Bay, 12-125 fath., p. 459, pl. xiv, and text-figg.; HODGSON, Ann. Nat. Hist. (7) xiv, **n. sp.**
- Phoxichilidium femoratum*, p. 283, pl. xiii, fig. 10, pl. xxiv, figg. 1-5; COLE, Harriman Alaska Exp. x: *P. maxillare*, regeneration, p. 163, 3 text-figg.; MORGAN, Biol. Bull. vi.
- Phoxichilus mollis*, Ceylon, p. 182, figg. 1-7; CARPENTER, Rep. Ceylon Pearl Fisheries ii, **n. sp.**
- Pipetta n. g.*, p. 264, *weberi*, Banda Sea, 2081 metres, p. 264, text-fig. 7; LOMAN, Tijdschr. Nederland. Dierk. Ver. (2) viii, **n. sp.**
- Pycnogonum stearnsi*, p. 292, pl. xiv, figg. 13-15, pl. xxvi, fig. 10; COLE, Harriman Alaska Exp. x.
- P. microps*, Natal, p. 378, pl. xiv, figg. 5 & 6; LOMAN, Zool. Jahrb. Syst. xx, **n. sp.**
- Tanystylum intermedium*, California, p. 278, pl. xxi, figg. 7-9, pl. xxii, figg. 1-7, pl. xxiii, figg. 1-3; COLE, Harriman Alaska Exp. x, **n. sp.**



XI. ARACHNIDA

(Including TARDIGRADA AND PENTASTOMIDA).

BY

EUGÈNE SIMON.

CONTENTS.

| | Page | | Page |
|---|------|---|------|
| I. TITLES | 2 | Aviculariidae | 21 |
| II. BIOLOGY. | | Hypochilidae | 21 |
| 1. Anatomy and Physiology | 13 | Uloboridae | 22 |
| 2. Reproduction and Development | 14 | Dictynidae | 22 |
| 3. General Bionomics, Habits, &c. | 14 | Eresidae | 22 |
| 4. Symbiosis and Parasitism | 14 | Filistatidae | 22 |
| 5. Miscellaneous | 15 | Leptonetidae | 23 |
| III. DISTRIBUTION. | | Oonopidae | 23 |
| A. Geographical | | Sicariidae | 23 |
| 1. Europe and Mediterranean Islands | 15 | Dysderidae | 23 |
| 2. Africa | 16 | Caponiidae | 23 |
| 3. Asia | 16 | Prodidomidae | 24 |
| 4. Malay Archipelago | 16 | Drassidae | 24 |
| 5. Australia and Pacific Islands | 16 | Zodariidae | 25 |
| 6. North America | 16 | Hersiliidae | 25 |
| 7. Central and South America | 17 | Pholcidae | 25 |
| B. Geological | 17 | Theridiidae | 25 |
| IV. SYSTEMATIC. | | Argiopidae | 26 |
| Arachnida, general | 17 | Mimetidae | 30 |
| 1. Scorpiones | 18 | Thomisidae | 31 |
| 2. Pedipalpi | 20 | Clubionidae | 31 |
| 3. Palpigradi | 20 | Agelenidae | 32 |
| 4. Araneae | 20 | Pisauridae | 33 |
| | | Lycosidae | 33 |
| | | Oxyopidae | 35 |
| | | Salticidae | 35 |
| | | 5. Solifugae | 36 |
| | | 6. Chernetes (Pseudoscorpiones) | 36 |
| | | 7. Opiliones | 37 |
| | | 8. Ricinuli | 39 |
| | | 9. Acari | 39 |
| | | 10. Tardigrada | 49 |
| | | 11. Pentastomida [vacant] | |

I.—TITLES.*

1. ACLOQUE, A. L'Agèlène labyrinthe. *La Nature*, Ann. 24, pp. 293 & 294, 1 fig. (1896).
2. —. Les Lycoses. *Cosmos*, Ann. 46, v, 1, pp. 490–493 (1897).
3. —. L'Halabe (*Nephila madagascariensis*), Araignée fileuse de Madagascar. *Op. cit.* 47, v, 1, pp. 529–534, 3 text-figg. (1898).
4. —. La Soie d'Araignée. *La Nature*, Ann. 26, pp. 248–250 (1898).
5. —. Les Tégénaires. *Cosmos*, Ann. 50, pp. 325–327, text-fig. (1900).
6. AGOSTINO, A. P. D'. Prima nota dei Ragni dell' Avellinese. *Avellino* 1/8, 4 pp.
7. BACHMANN. Todliche verletzungen durch Sudafrikanische Skorpioner. *Verh. Ges. deutsch. Naturf.* 73, pt. 2, pp. 584–587 (1902).
8. BALDWIN, W. A carboniferous air-breather from Sparth Bottoms, Rochdale. *Tr. Manchester Geol. Soc.* xxviii, pp. 523–527.
9. — & SUTCLIFFE, W. H. *Euscorpius sparthensis* n. sp. from the Middle Coalmeasures of Lancashire. *Quart. J. Geol. Soc.* lx, No. 240, pp. 394–399, text-fig. (1904).
10. BANKS, NATHAN. Some spiders and mites from Bermuda Islands. *Tr. Connect. Ac.* xi, 1903, pp. 267–275.
11. —. A treatise on the Acarina or Mites. *P. U. S. Mus.* xxviii, No. 1382, pp. 1–114, 201 text-figg.
12. —. The Arachnida of Florida. *P. Ac. Philad.* Jan. 1904, pp. 120–147, pls. vii & viii.
13. —. Four new species of injurious Mites. *J. N. York Ent. Soc.* xii, March 1904, pp. 53 & 54, pl 11.
14. —. New Genera and Species of Nearctic Spiders. *Ibid.* June 1904, pp. 109–119, pls. v & vi.
15. —. Some Arachnida from California. *P. Calif. Ac.* iii, No. 13, pp. 331–374, pls. 38–41.
16. —. Arachnida (in) Alaska; from the Harriman Alaska Expedition viii, pp. 37–45, 11 pls. (Reprint of the 1900 paper in *P. Washington Ac.* ii, pp. 477–486.)
17. BARREDA, L. DE LA. Instrucciones para el cultivo y diseminacion del Acariano (*Acaropediculoides ventricosus*) coruco que devora las larvas des Gorgojo ò Picudo del Algonero. *Com. Parasit. Agricola Mexico* 1904, pp. 16–31.
18. BERLESE, ANTONIO. Descrizione e figura della *Trombella otiorum* n. sp. *Riv. Patol. Veg.* ix, 1900 (1903), p. 126, text-fig.
19. —. Acari nuovi, Manipulus i, pp. 226–252. Manipulus ii, pp. 258–280. *Redia* i, fasc. ii, 1903 (1904).
20. —. Illustrazione iconografica degli Acari mirmecofili. *Ibid.* pp. 299–474, 14 pls.
21. —. Diagnosi di alcune nuove sp. di Acari italiani mirmecofili e liberi. *Zool. Anz.* xxvii, 1904, p. 12.

* An asterisk prefixed to a title indicates that the Recorder has not seen the Journal or Work referred to.

22. BERTHOUMIEU, L'ABBÉ. Révision de l'entomologie dans l'Antiquité—Arachnides pp. 197–200 (Chelifer, Scorpions, Galeodes, Aranea, Ixodes, Tyroglyphus et Cheyletus). Rev. Sci. Bourbonnais 1904, p. 167.
23. BEUTENMÜLLER, W. The insect-galls of the vicinity of New York City. Amer. Mus. J. iv [*Acarina*], p. 124.
24. BEZZI, M. Ancora le galle dell' Aranio. Marcellia iii, fasc. 1, 1904, pp. 16 & 17.
25. BIRULA [BĪRULYA], A. Beiträge zur Kenntnis der Skorpionenfauna Ost-Persiens. Bull. Ac. St. Petersb. xix, No. 2 (Sept. 1903), pp. 67–80.
26. —. Bemerkungen über einige neue oder wenig bekannte Skorpionenformen Nord-Afrikas. Ibid. No. 3 (Oct. 1903), pp. 105–113.
27. —. Miscellanea Scorpologica. v. Ein Beitrag zur Kenntnis der Skorpionenfauna der Insel Kreta. Annuaire Mus. St. Petersb. viii 1903, pp. 295–299.
28. —. Miscellanea Scorpologica. vi. Ueber einige *Buthus* Arten Centralasiens nebst ihrer geographischen Verbreitung (pp. 20–28). vii. Synopsis der russischen Skorpione (pp. 29–38). Op. cit. ix. (1904), pp. 20–38.
29. —. Bemerkungen über die Ordnung der Solifugen. i. Zur Classification der Familie Galeodidæ (p. 391). ii. Diagnosen neuer oder wenig bekannter Galeodes und Paragaleodes Arten (p. 394). iii. Bestimmungstabelle der mir bekannten central und Vorderasiatischen Galeodes Arten (p. 402). iv. Zur Kenntniss der postembryonalen Entwicklung der äusseren Körperform bei *Galeodes araneoides* Pal. (p. 405). v. Diagnosen neuer oder wenig bekannter *Dasia*, *Gluviopsis* und *Rhagodes* Arten (p. 406). T. c. pp. 391–416.
30. —. Sur un nouveau genre et une nouvelle espèce de Scorpion provenant d'Australie. Op. cit. viii (1903), Nouvelles p. xxxiii. (Russian, with Latin diagnose of n. g. and n. sp.)
31. —. Sur une nouvelle espèce de Scorpion provenant des Iles Aru. T. c. Nouvelles p. xxxiv. (Russian, with Latin diag. of n. sp.)
32. —. Sur un genre nouveau de Solifugæ provenant de Perse. T. c. Nouvelles p. xxxvi. (Russian, with Latin diag. of n. gen.)
33. BORELLI, ALF. Di alcuni Scorpioni della Colonia Eritrea. Boll. Mus. Torino xix, No. 463, pp. 1–5.
34. —. Intorno al alcuni Scorpioni di Sarawak (Borneo). T. c. No. 477, pp. 1–4.
35. BÖRNER, C. Beiträge zur Morphologie der Arthropoden. i. Ein Beitrag zur Kenntnis der Pedipalpen. Zoologica, Heft 42^I and 42^{II}. Stuttgart, 1904, pp. 1–174, 7 pls., 114 text-figg.
36. BRENNER, LEO. Meine Erfahrungen mit Skorpionen. Naturw. Wochenschr. xix, 1904, pp. 263–265.
37. CALMAN, W. T. Arachnida in Zool. Rec. xl, 1903.
38. CAMBRIDGE, OCTAVIUS PICKARD. On some new and interesting exotic spiders collected by MM. G. A. K. Marschall and R. Shelford, 1 pl. in Hope Reports iv, 1903 (reprinted from P. Zool. Soc. London, Jan. 25, 1901).
39. CAMBRIDGE, F. O. PICKARD. Arachnida Araneida ii, pp. 465–545, Opiliones p 546, pls. Biol. Centr.-Amer. Arachn.-Aran. ii.

40. CARPENTER, G. H. Araneida and Phalangida. [in Irish Field Club Union report of the fourth triennial conference and excursion held at Sligo, July 12-18, 1904]. Irish Natural. xiii, Sept. 1903, p. 198 (list of spp.).
41. CAVARA, F. & MOLLIKA, M. Intorno alla "Rugina bianca" dei limoni. Atti Ac. Gioen. (4) xvii, Mem. 2, 25 pp., 1 pl. [*Acarina*.]
42. CHAMBERLIN, R. V. Note on generic characters in the *Lycosidæ*. Canad. Ent. xxxvi, 1904, No. 5, pp 145-148 & 173.
43. —. Three new *Lycosidæ*. Ibid. No. 10, p. 286.
44. CHILTON, C. A species of *Ixodes* parasitic of the Grey Duck (*Anas superciliosa*). Tr. N. Zealand Inst. xxxvi, 1904, pp. 201 & 202 1 pl. (x).
45. CHRISTY, C. "Tick Fever" in Man, with note by R. I. Pocock. Thompson Yates Lab. Rep. v, part 1, pp. 187-189, pl. xv.
46. COLLINGE, W. E. Some recent investigations on the black-currant gall-mite, *Eriophyes ribis* (Nalepa). Reports on Economic Zoology No. 1, 8vo, 1904, 12 pp., 1 pl. [*Acarina*.]
47. COMSTOCK, J. H. A classification of North American Spiders. New York, 1903, pp. 1-56.
48. — & COMSTOCK, ANNA B. A manual for the study of insects. 5 edit. Ithaca, 1904, 1/8, 701 pp. pls. and text-fig. (Arachnida pp. 12-14, 48 text-figg.)
49. CORTI, ALFREDO. Una nuova specie di Acaro parassita. Zool. Anz. xxvii, pp. 427 & 428, 2 figg.
50. COSTANTIN, GÉROME ET LABROY. Sur la désinfection des serres du Muséum par le cyanure de potassium. Bull. Mus. Paris 1903, No. viii, p. 415.
51. COUPIN, HENRI. La chasse chez les animaux. Rev. Scient. Paris, pp. 274-277 (1903). (With ref. to an erroneous observation of the Dr Vinson on *Argiope* Web.)—Translated in Ann. Rep. Smithson. Inst. 1903 (1904), p. 567.
52. —. La destruction des parasites des serres (l'Araignée rouge) par l'acide cyanhydrique. Le Naturaliste, 15 June 1904, pp. 137 & 138.
53. CROSBY, CYRUS R. Notes on some Phalangids collected near Ithaca. J. N. York Ent. Soc. xii, No. 4, Dec. 1904, pp. 253-256, text-fig.
54. CSIKI, E. A szongáriai cselöpök (*Trochosa singoriensis* Laxm.) elterjedése Magyarországon. Allatt. Kozl. Magyar Tars. iii, pp. 290-294 & 303.
55. DAHL, FRIEDR. Ueber das System der Spinnen (Araneæ). SB. Ges. naturf. Berlin 1904, pp. 85-120.
56. DAWYDOFF, C. Les résultats d'un voyage scientifique à Java et les autres îles de l'archipel malais. I. Sur les organes excréteurs et la phagocytose éliminatoire chez le Thelyphonus de Java. Bull. Ac. St. Petersb. xviii, pp. 201-206.
57. DESMAISONS, H. Note sur les collections d'Araignées et sur le moyen d'y joindre les toiles. Bull. Soc. Nord France xvii, 1904, No. 360, pp. 107-110, 1 pl.
58. DUGÈS, ALFR. Las Garrapatas (Ixodidæ) de Mexico. Mem. Soc. Ant. Alzate xviii, pp. 187-194, 35 figg.

59. DU BUYSSON. Les chasses d'une Araignée. Rev. Sci. Bourbonnais 1904, Nos. 198 & 199, p. 135.
60. ELLINGSEN, EDV. Norske Pseudoscorpioner. II. Forh. Selsk. Christian. 1903, No. 5.
61. —. On some Pseudoscorpions from Patagonia, collected by Dr F. Silvestri. Boll. Mus. Torino xix, No. 480, pp. 1-7.
62. EMERTON, J. H. Change of marking in the male of a spider (*Pellenes cristatus*). Psyche xi, 1904, p. 32.
63. ENTZ, GÉZA. Die Fauna der kontinentalen Kochsalzwässer. Math. naturw. Ber. Ungarn xix (1901), publ. 1904, pp. 84-115 (p. 114 in list of spp. *Argyroneta aquatica* Cl. and *Lycosa entzei* Kulcz. cited).
64. ERDMANN, E. L. Spinnen-Seide (*Nephila madagascariensis*). Prometheus, Jahrg. x, 1899, pp. 219 & 220 and 233-235, 2 text-figg.
65. —. Seda de Arañas. Bol. Agric. Min. ind. Mexico, Año 9, No. 8, 1900, pp. 94 & 95 and pp. 120-129, 1 pl.
66. FABRE, J. H. Exode des Araignées. Rev. Quest. Sci. July 1903.
67. —. La toile des Epeires. Ibid. 1904, pp. 371-393.
68. —. Souvenirs entomologiques, études sur l'instinct et les mœurs des Insectes (Neuvième Série) 8vo, 375 pp. with illustrations. Paris, n. d. (1904).
69. FRANZ, VIKTOR. Ueber die Struktur des Herzens und die Entstehung von Blutzellen bei Spinnen. Zool. Anz. xxvii, 1904, pp. 192-204, 10 text-figg.
70. FRIES, —. Die Erntemilbe (*Leptus autumnalis*). Munchen. Med. Wochenschr. 41, pp. 363 & 364.
71. FRITSCH, ANTON. Bericht über die mit Unterstützung der Kaiserlichen Akademie unternommene Reise behufs des Studiums fossiler Arachniden. SB. Ak. Wien cxii, Abt. 1, Dec. 1903.
72. *—-. Palaeozoische, Arachniden. Prag, 1904. 1/4.
73. GEORGE, C. F. Lincolnshire Freshwater Mites. Naturalist 1904, pp. 100-102 and pp. 150 & 151, text-fig.
74. GILLOT, X. Emploi industriel des fils d'Araignées. Bull. Soc. Autun 1897, No. 10, pt. 2, pp. 292-294. (Omitt. 1897.)
75. GJORGJEVIC, Z. Prilozi za poznavan'e Srpska faune. II. [*Hydrachnidæ*]. Glas Srpska Ak. lxvii, pp. 153-189.
76. GREEN, E. E. & PERKINS, R. C. Symbiosis between Bees and Mites. Spolia Zeylan. i, part iv, p. 117.
77. GRIMSHAW, PERCY H. Chernetidea in Ayrshire. Ann. Scott. Nat. Hist. No. 51, July, p. 195.
78. GROS, H. Sur un Acarien parasite des *Anopheles*. C.R. Soc. Biol. lvi, 1904, p. 56.
79. HALBERT, J. N. Hydrachnidæ. [In Irish Field Club Union report of the fourth triennial conference and excursion held at Sligo, July 12-18, 1904.] Irish Natural. xiii (1903), p. 199. (List of spp. and n. spp. with a plate.)
80. —. Abstract of a work of J. N. Halbert on Irish Freshwater Mites in Zool. Anz. xxvi, p. 265. Month. J. Gen. Nat. Hist. xiii, 1904, p. 28.

81. HANSEN, H. J. & SORENSSEN, W. On two orders of Arachnida, Opiliones, especially the suborder Cyphophthalmi and Ricini, namely the family Cryptostemmatoideæ. (Published by aid of a subsidy from the Royal Society of London.) Cambridge, 1904, pp. 1-167, 9 pls.
82. HARTMANN, C. Variability in the number of teeth on the claws of adult spiders, showing their unreliability for systematic description. Biol. Bull. vi, pp. 191-197, 4 text-figg.
83. HEIM, F. & OUDEMANS, A. Sur deux nouvelles formes larvaires de *Thrombidium* parasites de l'homme. C.R. Ac. Sci. v, 138, 1^e sem. 1904, pp. 704-706, text-fig.
84. ——. Deux nouvelles espèces de *Thrombidium* de France. Bull. Soc. ent. France 1904, p. 91, text-fig.
85. HERRERA, A. L. Animales recogidos en la Cueva de Cacahuamilpa. Mem. Soc. Ant. Alzate v, 1891, pp. 218-220. (Arachn. p. 219, pl. iii, figg. 1-5, 7.)
86. HEYMONS, RICHARD. Die flügel förmigen Organ (Lateralorgane) der Solifugen und ihre Bedeutung. SB. Ak. Berlin 1904, pp. 282-294, 2 text-figg.
87. HOGG, H. R. On a new genus of spiders from Bounty Island with remarks on a species of N. Zealand. Ann. Nat. Hist. (7) xiii, pp. 65-70, 2 text-figg.
88. HOPKINSON, JOHN. Cheese-mites and some other mites. Tr. Hertfordsh. Soc. xii, pt. 2, p. 69.
89. KEW, H. WALLIS. *Chernes nodosus* at Louth (Linc.). Naturalist 1904, p. 292.
90. KOCH, ROBERT. Vorläufiger Bericht über das Rhodesische Rotwasser oder "Afrikanische Kastenfleber." Arch. Wiss. Prakt. Tierh. xxx, pp. 281-295.
91. ——. The Rhodesian Cattle disease (*Rhipicephalus*). Agric. J. Cape Good Hope xxiii, 1903, pp. 33-39.
92. ——. Rhodesian Redwater or African Coast fever (*Ixodes*). Op. cit. xxiv, 1904, pp. 33-43 and pp. 549-560.
93. KOENIKE, F. Noch ein neuer *Arrenurus* von Seeland. Zool. Anz. xxvii, p. 444.
94. KRAEPELIN, K. Zur Nomenklatur der Skorpione und Pedipalpen. Zool. Anz. xxviii, No. 6, pp. 195-204.
95. KULCZYŃSKI, VLADISLAUS. De Opilionibus observationes nonnullæ. Ann. Mus. Hungar. ii, 1904, pp. 76-84, 1 pl.
96. ——. Fragmenta Arachnologica. i. Bull. Ac. Cracovie, Dec. 1904, pp. 533-668, 1 pl.
97. KÜSTER, E. VON. Zur Morphologie der von *Eriophyes dispar* erzeugten Galle. Marcellia iii, fasc. 3, p. 60 (1904).
98. LABONNEFON, C. *Nephila madagascariensis*. L'intermed. Bombyc. Entom. ii, 1902, pp. 75-75.
99. LAHEE, FR. H. The calls of spiders (*Lycosa*). Psyche 1904, ii, p. 74.
100. LANKESTER, E. RAY. Structure of the Arachnida. Quart. J. Micr. Sci. (n. s.), No. 190. xlviii, part 2, 1904, pp. 165-269, 77 text-figg.

101. [LANKESTER, E. RAY.] The structure and classification of the Arthropoda. Arachnida in subphylum Arthropoda (p. 529), classification of Arachnida (pp. 567 & 574). Op. cit. No. 188, xlviii, No. 188, p. 523.
102. LARGAIOLLI, VITTORIO. Idracne del Trentino. Quarto contributo allo studio delle Idracne Italiane. Tridentum, Ann. 6, 1903, pp. 132-136.
103. LATTER, H. OSWALD. A note on the coloration of Spiders. Nature cxxi, No. 1827, Nov. 1904, p. 6.
104. LAVARRA, LEONARDO. Sopra una nuova specie di *Hæmaphysalis*. Boll. Soc. zool. Ital. xiii, 1904, pp. 255-258.
105. LAVERAN, A. Note sur un Acarien parasite des *Anopheles*. C.R. Soc. Biol. lvi, 1904, p. 57.
106. LÉCAILLON, A. Insectes et autres invertébrés nuisibles aux plantes cultivées et aux animaux domestiques. (Acariens, pp. 123-127.) 1 vol. 8vo, 182 pp., text-fig. Paris (Imp. Nat.).
107. —. Sur la biologie et la psychologie d'une Araignée (*Chiracanthium carnifex* Fabricius). Année Psychol. x, pp. 63-83, text-fig.
108. —. Sur les rapports des Theridions avec leurs cocons ovigères. C.R. Soc. Biol. lvii, No. 34, 1904, pp. 510-512.
109. —. Sur la manière dont se comportent les Theridions avec les cocons ovigères des autres individus de leur espèce, avec ceux d'espèces différentes et avec des cocons artificiels. T. c. No. 35, pp. 543-545.
110. —. Sur la manière dont les Araignées se comportent vis-à-vis de leurs œufs et de leurs petits. T. c. No. 36, pp. 568-570.
111. LENDL, AD. Die Gewebe der Radspinnen (Orbitelariæ). Math. naturw. Ber. Ungarn xix, 1904, pp. 395 & 396.
112. LESSERT, ROGER DE. Observations sur les Araignées du bassin du Léman et de quelques autres localités suisses. (Thèse présentée à la faculté des Sciences de l'Université de Genève.) Rev. Suisse Zool. pp. 269-450, 2 pls.
113. LINDROTH, J. IVAR. Neue und selten finnische Eriophyiden (nya och Sällsynta finska Eriophyider). Acta Soc. Faun. Fenn. xxvi, 1904, pp. 1-18.
114. LOUNSBURY, C. P. Report of the Government Entomologist for the year 1903 (ticks and fevers). Rep. Dep. Agric. Cape Good Hope 1903, pp. 7, pls.
115. —. Bryobia Mite Remedies for the "Red Spider pest." Agric. J. Cape Good Hope xxiii, 1903, pp. 179-184, 1 fig.
116. —. Transmission of African Coast Fever (*Rhipicephalus appendiculatus*). T. c. xxiv, pp. 428-432, 3 pls.
117. —. The Fowl tick: studies on its live cycle and habits (*Argas persicus*). T. c. xxiv, pp. 261-273, 3 pls.
118. —. Distribution of Coast Fever Ticks. T. c. xxv, 1904, pp. 268-270.
119. — & ROBERTSON, W. Persian Sheep and Heartwater (*Amblyomma*). T. c. xxv, 1904, pp. 175-186, 3 text-figs.
120. McCLENDON, J. F. On the anatomy and embryology of the nervous system of the Scorpion. Biol. Bull. viii, pp. 38-55, 13 figs.

121. MALLY, C. W. Notes on the so-called paralysis tick (*Ixodes pilosus*). Agric. J. Cape Good Hope xxv, 1904, pp. 291-296.
122. MARIANI, MARIO. Di una nuova specie di Acaro dell' ordine dei Metastigmata, gen. *Argas*. Zool. Anz. xxvii, pp. 704-706.
123. MÉGNIN, PIERRE. Sur la Biologie des Tiques ou *Ixodes*. J. Anat. Physiol. xl, pp. 569-589, 4 text-figg.
124. MELVILLE, THURSTON COOK. Galls and insects producing them. (Arachnida, p. 129, pls. i & v, figg. 8, 9, 10, 11, 43, 44, 45). Ohio Natural. v, No. 6, 1904, p. 125.
125. MINCHIN, E. A. Exhibition of a specimen of the Spider, *Heteropoda regia*, captured at University College, London. P. Zool. Soc. London l, ii, 1904.
126. MINGAUD, GALIEN. Le prétendu suicide du Scorpion. Bull. Soc. Nimes, t. 27, xxxvii & xxxviii, 1900. (Omitted 1900.)
127. MONTGOMERY, THOMAS H. Supplementary notes on Spiders of the genera *Lycosa*, *Pardosa*, *Pirata* and *Dolomedes* from the North-eastern United States. P. Ac. Philad., Oct. 1903, pp. 645-655, 1 pl.
128. —. Descriptions of North American Araneæ of the families *Lycosidae* and *Pisauridae*. T. c. March 1904, pp. 261-323, 3 pls.
- MOLLIKA, M. [See CAVARA, F.]
129. MONTI, RINA. Di un'altra nuova specie di *Lebertia* e di alcuna Idracne nuove per la fauna italiana. Rend. Ist. Lombardo 1904, ser. ii, xxxvii, pp. 240-251, 1 pl.
130. —. Limnologische Untersuchungen über einige italienische alpensee (Arachnida, p. 274). Forschber. Plon xi, 1904, p. 252.
131. NALEPA, A. Neue Gallmilben. 25 Fortsetzung. Anz. Ak. Wiss. 1904, No. 23, p. 335.
132. NERESHEIMER, E. Ueber *Lohmanella catenata*. Zeitschr. wiss. Zool. lxxvi, pp. 137-166, 2 pls., 6 figg.
133. NEUMANN, L. G. Note sur les Ixodidés. Arch. parasit. 1904, pp. 444-464, text-fig.
134. NOEL, P. L'Acarus telarius (*Tetranychus*). Le Naturaliste, June 1904, p. 131.
135. NOGUÉ, —. La soie d'Araignée. Bull. Econ. Madag. iv, pp. 279-287. Includes communications by J. MAROIS & J. TESTENOIRE.
136. NORDENSKIÖLD, ERIK. Hydrachniden aus Süd Amerika. Arkiv Zool. i, 1904, No. 3, pp. 395-397, 3 text-figg.
137. NOSEK, ANT. Tabellæ analyticae Araneorum Europæ centralis. Vestnik. Klub. Prostějove 1903, p. 3, pls. i & ii.
138. —. O snovačích činnosti Pavouků (les constructions d'Araignées). Otisk. z výroční čís. Král státního gymnasia v Čáslavi, pp. 47.
139. —. *Arachnoidea montenegrina*. Pavoukoviti členovci Černé Hory. SB. Bohmisch. Ges. 1903, No. 46, 4 pp.
140. NOWLIN, NADINE. The vitelline body in Spider eggs. Kansas Univ. Sci. Bull. ii, No. 10, 1904, pp. 281-302, 4 pls.
141. OUDEMANS, A. C. Notes on Acari, xiii^o Ser. Tijdschr. Ent. 1904 pp. 114-134, pls. 6-9.

142. [OUDEMANS, A. C.] Symbiose van Koptorthosoma en Greenia eene prioriteits. Kwestie. Ent. Ber. Nederland. No. 14, pp. 98 & 99.
143. —. Acarologische Aanteekeningen No. vii. T. c. No. 13, pp. 91 & 92.
144. —. Acarologische Aanteekeningen No. viii. T. c. No. 14, pp. 100–103.
145. —. Acarologische Aanteekeningen No. ix. T. c. No. 15, p. 119.
146. —. Acarologische Aanteekeningen No. 10. T. c. No. 16, p. 140.
147. —. Ibid. No. 11. T. c. No. 17, pp. 153 & 154.
148. —. Ibid. No. 12. T. c. No. 18, pp. 160–163.
149. —. Note on a new genus and species of parasitic Acari. Note VIII. Notes Leyden Mus. xxiv, 1902 (July, 1904), p. 216, text-fig.
150. —. *Laelaps versteegii*, a new species of parasitic mite. Note IX. T. c. pp. 223–231, text-figg.
 —. [See F. HEIM & OUDEMANS (83).]
 —. [See VOIGTS & OUDEMANS (223).]
151. PAVESI, P. Esquisse d'une faune Valdotaïne (Arachnida, pp. 62–68 [250–256]). Atti Mus. Milano xliii, 1904.
 PEARCE, N. D. F. [See WARBURTON & PEARCE (228).]
152. PEREZ, CH. Sur les larves d'Hydrachnes. C.R. Soc. Biol. lvi, 1904, pp. 263 & 264.
 PERKINS, R. C. [See E. E. GREEN & R. C. PERKINS (76).]
153. PIERSIG, RICHARD. Neues Verzeichnis der bisher im Sächsischen Erzgebirge aufgefundenen Hydrachnidenformen. II. Ber. Annaberg Ver. 1903, pp. 34–46, 2 pls.
154. —. Ueber eine neue Hydrachnide aus dem Böhmen Walde. Zool. Anz. xxvii, pp. 453 & 454, 1 fig.
155. —. Eine neue *Aturus* Art aus dem Böhmis. bayerischen Walde. T. c. pp. 471 & 472.
156. —. Verzeichnis der bisher von der biologischen Wolga-Station zu Saratow gesammelten Hydrachniden. Annuaire Mus. St. Petersb. ix, 1904, pp. 45–56, text-figg.
157. POCKOCK, R. I. On a new stridulating organ in Scorpions, discovered by W. J. Burchell in Brazil in 1828. Ann. Nat. Hist., Ser. 7, xiii, 1904, pp. 56–62, 1 pl.
158. —. Note on *Ixodes*. [See CHRISTY, C. (45).]
159. POLJANSKY, J. Zur Embryologie des *Scorpio indicus*, pp. 42–55 [in Russian], pp. 83–90 [in German]. Trudui St. Peterb. Obshch. xxxiii.
160. PRITCHETT, ANNIE H. Observations on Hearing and Smell in Spiders. Amer. Natural. xxxviii, pp. 859–867.
161. PURCELL, W. F. Descriptions of new genera and species of South African spiders. Tr. S. African Soc. xv, pt. iii, pp. 115–173, pls. x & xi.
162. —. On the species of *Opisthophthalmus* in the collection of the South African Museum, with descriptions of some new forms. Ann. S. African Mus. iv, pt. ii, pp. 133–180.

163. RAINBOW, W. J. Notes on the architecture, nesting habits and life histories of Australian Araneidæ, based on specimens in the Australian Museum. Rec. Austral. Mus. v, pt. 5, 1904, pp. 317-325.
164. —. Studies in Australian Araneidæ, No. 2. T. c. v, pt. 2, 1904, pp. 102-106, text-figg. Id. pt. 3, pp. 327-336, text-figg. and 2 pls.
165. RANKIN, J. *Glyciphagus spinipes* Koch. Tr. Glasgow Nat. Hist. Soc. vi, pp. 380 & 381.
166. REUTER, ENZIO. Hexenbesen und Eriophyiden. Medd. Soc. Faun. Fenn. (7) xi, pp. 34-47, figg.
167. —. Die Hypopiale Nympe von *Falculifer rostratus* (Buchh.) als Endoparasit der Taube. T. c. pp. 91-96.
168. RIBAYA, COSTANTINO. Gamasidi planticoli. Riv. Patol. Veg. x, 1901-1902 (1904), pp. 175-178.
169. RICHTERS, F. Nordische Tardigraden. Zool. Anz. xxvii, p. 168 (list of sp. and n. spp.).
170. —. Beitrag zur Verbreitung der Tardigraden in Südl. Skandinavien u. an der Mecklenburg Küste. T. c. pp. 373-377.
171. —. Die Eier der Tardigraden. Ber. Senckenberg. Ges. 1904, pp. 59-72, 3 pls.
172. —. *Echiniscus conifer* n. sp. T. c. pp. 73 & 74, pl. v, fig. 8.
173. —. Arktische Tardigraden. Fauna Arctica iii, Lief. 3, pp. 493-508, pls. xv & xvi.
174. ROBERTSON, T. Brailsford on the Sham-death reflex in Spiders. J. Physiol. xxxi, pp. 410-417, text-figg.
175. ROBERTSON, W. African Coast Fever (*Rhipicephalus appendiculatus*). Agric. J. Cape Good Hope xxv, pp. 262-268, 1 pl., 25 text-figg.
— [See C. P. LOUNSBURY & W. ROBERTSON (119).]
176. ROSSUM, A. J. VAN. Note on *Latrodectus hasselti*. Ent. Ber. Nederland. 1904, p. 166.
177. ROUSSEAU, E. Hydracnides de la Belgique. Ann. Soc. ent. Belgique xlvii, p. 321 and p. 305.
178. SANTINI DE RIOLS, E. N. Animaux mythologiques, légendaires, historiques etc.: l'Araignée. Naturaliste 1904, pp. 36-39 and pp. 45-48.
179. SCHEFFER, T. W. Four new spiders from Kansas. Ent. News Philad. xv, Oct. 1904, pp. 257-260, pl. xvii.
180. —. The Egg Cocoon of Triangle Spider (*Hyptiotes cavatus*). T. c. p. 278, text-fig.
181. —. The Cocoon of the Ray Spiders (*Theridiosoma gemmosum*). Canad. Ent. xxxvi, No. 6, p. 163, text-fig.
182. —. A new genus of Spiders. T. c. No. 10, p. 305, text-fig.
183. SCHIMKEWITSCH, W. Zur Embryologie der *Thelyphonidæ*. Trudui St. Peterb. Obsch. xxxiii, pp. 56-77 [in Russian] and pp. 93-110 [in German].
184. SIMON, E. Arachnides recueillis par M. A. Pavie en Indo-Chine. Mission Pavie en Indo-Chine 1879-1895. III. Recherches sur l'Histoire Naturelle de l'Indo-Chine orientale. Arachn. pp. 270-295, pl. xvi.

185. [SIMON, E.] Liste des Scorpions trouvés au Tucuman par M. G. A. Baer. Bull. Soc. ent. France 1904, No. 6, p. 120.
186. —. Étude sur les Arachnides recueillis au cours de la Mission du Bourg-de-Bozas en Afrique. Bull. Mus. Paris vii, 1904, pp. 442-448.
187. —. Descriptions de quelques Arachnides nouveaux. Rev. Suisse Zool. xii, fasc. 1, pp. 65-70.
188. —. Étude sur les Arachnides du Chili recueillis en 1900, 1901 et 1902 par MM. C. Porter, Dr Delfin, Barcey Wilson et Edwards. Ann. Soc. ent. Belgique xlviii, 1904, pp. 83-114, text-figg.
189. —. Arachnida (Supp.) in Fauna Hawaiiensis ii, pp. 329-344, text-figg.
190. SMITH, FRANK PERCY. The Spiders of Epping Forest, part iii. Essex Natural. xiii, pp. 209-218, pls. ix & x.
191. —. The Spiders of the *Erigone* Group. J. Quekett Club, ser. 2, ix, p. 9, pl. i, and pp. 109-116.
192. SOAR, C. R. Two new British Water-Mites. J. Quekett Club, ser. 2, ix, pp. 105-108, text-fig.
- SORENSEN, W. [See HANSEN, H. J. & SORENSEN, W. (81).]
193. —. Danmarks Færoernes og Islands Edderkopper med Undtagelse af Theridierne (Araneæ danicæ faroicæ et islandicæ, Theridioidis exceptis). Ent. Meddel. (2) heft. 1, pp. 240-246.
194. STAHL, ERNST. Die Schtzmittel der Flechten gegen Tierfrass (citation of Acari not determined p. 360). Denk. Ges. Jena 1904, p. 357.
195. STAMM, R. H. Om Musklerne Befæstelse til det ydre Skelet hos Leddyrene. Arachnider, p. 148. Danske Selsk. Skr. (Mém. Acad. roy. des sciences et lettres de Danemark), 7^e ser. sect. sc., 1, No. 2, p. 148.
196. STEGAGNO. Locatari dei Cecidozoi sin qui noti in Italia. Marcellia 1904, fasc. 1, p. 18, fasc. 11, p. 25.
197. STRAND, EMBR. *Theridiidæ*, *Argiopidæ* und *Mimetidæ* aus der Collett'schen Spinnensammlung. Norske Selsk. Skr. 1903, No. 7 (1904), pp. 1-9.
198. —. Die Dictyniden, Dysderiden, Drassiden, Clubioniden und Ageleniden der Collett'schen Spinnensammlung. Forh. Selsk. Christian. 1904, No. 5, pp. 1-16.
199. —. *Theridium bösenbergi* Strand, n. nom. Ent. Zeitschr. xviii, No. 23.
- SUTCLIFFE, W. H. [See BALDWIN, W. & SUTCLIFFE, W. H. (9).]
200. THEILER, A. Rhodesian Tick fever. Rep. S. Afric. Ass. ii, 1904, pp. 201-220.
201. THEVENIN, A. Sur une Araignée du terrain houillier de Valenciennes (Nord). Bull. Soc. Autun 1902, Pr.-verb. sc. pp. 195-203, text-figg.
202. THOMSON, A. E. Spiders. Tr. Manchester Micr. Soc. 1903, pp. 54-70. [Introductory sketch.]
203. THON, K. Ueber die in Montenegro von Dr Mrázek gesammelten Hydrachniden. SB. Böhmisch. Ges. 1903, No. 19, 7 pp., 1 pl.

204. THOR, SIG. Norwegische *Bdellidæ* 1, nebst Notizen über die Synonymie. Zool. Anz. xxviii, pp. 68-79.
205. —. Bemerkungen zur neueren Hydrachniden Nomenclatur. Nyt. Mag. Naturv. xli, 1903, pp. 65-68.
206. —. Eine Acarinologische Reise nach Schwarzbach bei Zweibrücken. T. c. xli, 1903, pp. 69-72.
207. —. Zwei neue Formen aus der alten Neuman'schen Typensammlung. T. c. xli, 1903, pp. 73-75, text-figg.
208. TIRABOSCHI, G. Gli animali propagatori della peste bubbonica. Acari, p. 96. Boll. Soc. zool. Ital. xiii, pp. 88-97.
209. —. Les rats, les souris et leurs parasites cutanés. v. Les Acariens, p. 319. Arch. parasit. 1904, pp. 311-349, text-figg.
210. TRÄGARDH, IVAR. Ueber die Identifizierung von *Raphignathus ruber* C. L. Koch und *Acarus denticulatus*. Zool. Anz. xxvii, pp. 565-568, 4 text-figg.
211. —. Die neue Acariden aus Kameron. Ent. Tidskr. xxv, pp. 151-160, 1 pl.
212. TROTTER, A. Osserv. sugli Acarodomazii. Bull. Soc. Bot. Ital., Firenze 1904, pp. 82-86.
213. TROUESSART, E. *Leiognathus blanchardi* n. sp., Acarien parasite de de la Marmotte des Alpes. Arch. parasit. 1904, p. 558, text-figg.
214. —. Sur la coexistence de deux formes d'hypopes dans une même espèce, chez les Acariens du genre *Trichotarsus*. C.R. Soc. Biol. lvi (Feb. 1904), pp. 234 & 235, text-figg.
215. —. Deuxième note sur les hypopes du genre *Trichotarsus*. T. c. (Feb. 1904), pp. 365 & 366.
216. —. Sur le mode de fécondation des Sarcoptides et des Tyroglyphides. Ibid. (Feb. 1904), p. 367.
217. TULLGREN, ALB. Om det vanliga Spinnkvalstret *Tetranychus telarius*. Ent. Tidskr. 1903, pp. 246-249.
218. ULMER. Hamburg, Eppendorfer Moor, *Hydrachnidæ* (list of spp.). Verh. Ver. Hamburg. naturw. xi, p. 20.
219. VIRÉ, AR. La faune souterraine du puits de Padirac, Arachnida, p. 827. C.R. Ac. Sci. t. 138, 1904, pp. 826-828.
220. VOIGTS, VAN HANS & OUDEMANS, A. C. Neue Milben aus der Umgegend von Bremen. Zool. Anz. 1904, pp. 651-656.
221. VOLK, W. H. Sulphur sprays for red spider. Bull. Agric. exp. Stat. California, No. 154, pp. 1-11, 3 figg.
222. WALLACE, LOUISE B. The function of the accessory Chromosome in the Spider. Amer. Natural. xxxviii, 1904, p. 506, text-fig.
223. Warburton, C. The Arachnida. [in] Handbook of the Natural History of Cambridgeshire, edit. by J. E. MARR and A. E. SHIPLEY (list of Chernetidæ, Phalangidea, Araneidea and Acari).
224. —. Mites. Popular Knowledge i, p. 104 and p. 134. (Article.)
225. — & PEARCE, N. D. F. Exhibition of Oribatid Mites taken in the neighbourhood of Cambridge. P. Cambridge Soc. xii, 1904, pp. 427-429.

226. WERJBITZKY, E. De Araneis regionis caucasiae. Mem. Soc. Kiev xvii, 1902, pp. 461-503, 1 pl. (2 n. spp. *Xysticus* and *Theridion*). [Omitted in Zool. Rec. 1902.]
227. WESTBERG, P. Der Steg und die Begattung der Kreuzspinnen (*Epeira*). KB. Ver. Riga, No. 4 (1901), p. 42. [Omitted in Zool. Rec. 1901.]
228. WILDEMAN (M. DE). Sur les Acarophytes. C.R. Ac. Sci. 6 Juin, 1904, pp. 1437-40.
229. —. Sur l'Acarophytisme chez les Monocotylédons. Ibid. 3 Oct. 1904, pp. 551-553.
230. WILSON, W. H. On the poison of spiders, with special reference to that of *Chaetopelma olivaceum*. Rec. Egypt. School Med. No. 1, 1901, pp. 141-150.
231. —. On the blood of *Chaetopelma olivaceum* with special reference to the presence of Hæmocyanin. T. c. No. 1, 1901, pp. 151-155.
232. —. The physiological action of scorpion venom. J. Physiol. xxxi, pp. xlviii & xlix.
233. —. The immunity of certain desert mammals to scorpion venom. T. c. xxxi, pp. l-lii.
234. —. On the venom of scorpions. Rec. Egypt. School Med. ii, pp. 7-41, pls. i-iii.
235. WITT, OTTO N. Die Spinnenseide von Madagascar. Prometheus Jahrg. 12, 1901, pp. 673-676, 3 figg. [Omitted 1901.]
236. WOLCOTT, ROBERT H. The North American species of *Limnesia*. Tr. Amer. Micr. Soc. xxiv, pp. 139-160, pls. xii & xiii.

II. BIOLOGY.

1. *Anatomy and Physiology.*

General morphology, anatomy and classification of Arachnoidea; LANKESTER (100, 101).

The muscle insertions in Arachnida; R. H. STAMM (198).

On the anatomy and embryology of the nervous system of the Scorpion; McCLENDON (120).

On a new stridulating organ, Scorpion; R. I. POCKOCK (157).

Morphology and anatomy of Pedipalpi; C. BÖRNER (35).

Phagocytose in *Thelyphonus*; C. DAWYDOFF (56).

The heart and circulation in Spiders; FRANZ (69).

The sham-death reflex in Spiders; T. ROBERTSON (176).

The function of the accessory chromosome in the Spiders; LOUISE R. WALLACE (222).

Structure and classification of Spiders, introductory sketch; THOMSON (202).

Stridulating organs in Theridiidæ; W. KULCZYNSKI (96).

On the lateral organs in the Solifugæ; R. HEYMONS (86).

Morphology of Opiliones Cyphophthalmi, and Ricinuli; H. J. HANSEN & W. SØRENSEN (82).

Observations on hearing and smell in Spiders; H. PRITCHETT (160).

Hæmocyanin in *Arachnida*; KOBERT, p. xxiii, SB. Ges. Rostock 1903.

2. *Reproduction and Development.*

- The vitelline body in spiders' eggs; NADINE NOWLIN (140).
 Copulation of *Epeira*; P. WESTBERG (227).
 Development of *Galeodes araneoides*; A. BIRULA (29).
 Embryology of *Scorpio indicus*; POLJANSKY (159).
 Embryology of *Thelyphonidæ*; SCHIMKEWITSCH (183).
 Metamorphosis, age and sexual characters in Opiliones; W. KULCZYNSKI (95).
 Metamorphosis of Hydrachnidæ; C. PEREZ (152).
 Fecundation in Sarcoptidæ and Tyroglyphidæ; E. TROUESSART (216).
 Metamorphosis of *Trichotarsus*; E. TROUESSART (214 & 215).
 Eggs of Tardigrada; F. RICHTERS (171).

3. *General Bionomics, Habitats, &c.*

- Habits of Spiders and bibliographical list of works on this subject; A. NOSEK (138).
 Habits of several Spiders and of one Scorpion of S. France: la Lycose de Narbonne (*Lycosa narbonensis*), p. 5; l'exode des Araignées, p. 49; l'Araignée Crabe (*Thomisus albus* Gm.), p. 68; les Epeires, p. 79; l'Araignée labyrinthe (*Agelena labyrinthica*), p. 192; l'Araignée Clotho (*Uroctea durandi* Latr.), p. 213; le Scorpion languedocien (*Buthus occitanus*), p. 223; J. H. FABRE (66-68).
 Architecture nesting, habits and life history of Australian Araneidæ; W. J. RAINBOW (163).
 Fabrication of Spiders' webs (Orbitelæ); AD. LENDL (111).
 Biology and psychology of *Chiracanthium carnifex*; LÉCAILLON (107).
 Relations between *Theridion* with their egg-cocoons; LÉCAILLON (108).
Theridion with their egg-cocoons, with the cocoons of other species and with artificial cocoons; LÉCAILLON (109).
 Spiders and their egg-cocoons and young; LÉCAILLON (110).
 Habits of *Linyphia* on their web; OSWALD H. LATTER (103).
 Hunting of one Spider; H. DU BUYSSON (59).
 Egg-cocoons of *Hyptiotes cavatus* and *Theridiosoma gemmosum*; T. W. SCHEFFER (180 & 181).
 Nest of *Spiroctenus pallidipes* Purcell and *pectiniger* E. Sim., figured; W. F. PURCELL (161).
 Habits of *Ectatosticta troglodytes* Higg. & Pett., a cave-spider of Tasmania; W. J. RAINBOW (164).
 Habits and biology of *Ixodes*; P. MEGNIN (123).
 Lemon, "ruginé bianca" and *Acarina*; CAVARA & MOLLIKA (41).
Glyciphagus spinipes and *G. ansor* infesting furniture; RANKIN (165).
Eriophyes ribis in England; COLLINGE (46).

4. *Symbiosis and Parasitism.*

- Symbiosis between *Greenia* and *Coptorthosoma* (Xylocopidæ); A. C. OUDEMANS (142).
 Symbiosis between Bees and Mites; GREEN & PERKINS (76).
 Thrombidion parasitic on man; F. HEIM & OUDEMANS (83).
 Acari parasitic on rats; G. TIRABOSCHI (209).
 Acari parasitic on *Arctomys marmota*; E. TROUESSART (213).
 Acari parasitic on *Tragulus meminna*; L. LAVARRA (104).
 Acari and *Anopheles*; H. GROS & LAVERAN (78 & 105).
 Acari commensal in Ants' nests; A. BERLESE (20 & 21).

Animals propagators of the bubonic plague (Acari, p. 96); G. TIRABOSCHI (208).

Tick and cattle fever in S. Africa; W. ROBERTSON (174 & 175); LOUNSBURY (114-119); R. KOCH (90-92); MULLY (121); THEILER (200); CHRISTY (45).

Galls of *Phytoptus*; MELVILLE THURTON COOK (124).

Galls of *Phytoptus* on *Aronia rotundifolia*; M. BEZZI (24).

Acari commensal in Eriophyes galls; STEGANO (196).

5. Miscellaneous.

The silk of *Nephila madagascariensis* for economic use; ERDMANN (64 & 65); O. WITT (235); C. LABONNEFON (98); X. GILLOT (74); ACLOQUE (3 & 4); NOGUÉ (135).

Mythological and historical animals "l'Araignée": E. N. SANTINI DE RIOIS (178).

Venom of Spiders; W. H. WILSON (230, 232-234). On the venom of Scorpions and immunity of certain desert mammals to Scorpion venom; W. H. WILSON (233).

Change of marking in the male of *Pellenes cristatus*; EMERTON (62).

On the coloration of Spiders; LATTE, H. OSWALD (103).

On the collection of Spiders and conservation of spiders' webs; H. DESMAISONS (57).

On the supposed suicide of the Scorpion; GALIEN MINGAUD (126).

Bryobia Mite, remedy for the Red Spider pest; LOUNSBURY, C. P. (115).

An abnormal female of *Edothorax agrestis*; R. DE LESSERT (112).

Means of destruction for *Tetranychus telarius*; P. NOEL (134), and for "Red spider"; COSTANTIN, GÉROME & LABROY (50).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

1. Europe and Mediterranean Islands.

Central Europe. *Araneæ*, keys to families and genera; NOSEK (137).

Denmark, Færoe Isl. and Iceland. *Araneæ*, list and keys to families, genera and spp.; W. SORENSSEN (193).

Norway. *Araneæ*, list and n. spp.; E. STRAND (197 & 198): *Chernetes*; ELLINGSEN, EDV. (60): *Bdellidæ* (Acari); THOR, SIG. (204). Norway Sept. and Spitzberg. *Tardigrada*, list and n. spp.; F. RICHTERS (169).

Russia. *Scorpiones*, synop. key to genera and spp.; BIRULA (28): Sosva, *Hydrachnidæ*; PIERSIG, R. (156): Caucasian reg. *Araneæ*; WERJBITSKY (226).

Iceland. *Tardigrada*; RICHTERS, F. (173).

Germany. *Araneæ* (note on some Spiders of Germany fauna); KULCZYNSKI (96). Bremen, *Acari*; VOIGTS (220). Hamburg, *Hydrachnidæ*, list of spp.; ULMER (218).

France. *Trombidion* n. spp.; HEIM & OUDEMANS (83 & 84): Padirac cave fauna *Arachnida*; A. VIRÉ (219).

Holland. *Arrenurus* n. spp.; KAENIKE (93): On *Azalea indica*, *Phyllocoptes* n. sp.; NALEPA (131).

Belgium. *Hydrachnidæ*; ROUSSEAU (177).

England. *Chernetes* (in Ayrshire); PERCY H. GRIMSHAW (77): *Chernes nodosus* (at Louth); H. W. KEW (89): *Araneæ* (in Epping Forest); F. P. SMITH (190): *Oribatidæ* (Acari); C. WARBURTON & PEARCE (225): *Hydrachnidæ*; C. R. SOAR (192); C. F. GEORGE (73).

- Ireland. *Araneæ* and *Opiliones*; G. H. CARPENTER (40): *Hydrachnidæ* n. sp.; J. N. HALBERT (79 & 80).
 Switzerland. Bassin du Léman *Araneæ*, list and n. sp.; R. DE LESSERT (112).
 Bohemia. *Hydrachnidæ*; R. PIERSIG (154).
 Hungary. *Trochosa singoriensis*; OSIKI (54).
 Servia. *Hydrachnid* fauna, ? n. spp.; GJORGEVIC (75).
 Italy. *Hydrachnidæ*; RINA MONTI (129). Valdotaine (Aosta), *Araneæ*; P. PAVESI (151). Trentino, *Hydrachnidæ*; LARGAIOLLI (102). Avellino, *Araneæ*; AGOSTINO (6). Italian Alps, *Tardigrada* and *Acari*; RINA MONTI (129).
 Montenegro. *Araneæ*; NOSEK (139): *Hydrachnidæ*; THON (203).
 Crete. *Scorpiones*; BIRULA (27).
 Cephalonia. *Scorpions* and *Araneæ*, brief list; SANGIORGI, Atti Soc. Modena xxxvi, p. 71.

2. *Africa.*

- N. Africa. *Scorpiones*, observ. and n. spp.; BIRULA (26).
 Erythrea. *Scorpiones*; BORELLI (33).
 Abyssinia and Congo. *Araneæ*, list and n. spp.; E. SIMON (186).
 Kameroun. *Acari* n. sp.; TRÄGARDH (211).
 S. Africa. *Araneæ* and *Scorpiones* n. spp.; PURCELL (160 & 161).
 Zoutpansberg. *Araneæ* n. spp.; E. SIMON (187).

3. *Asia.*

- Central Asia. *Buthus*, list and n. subsp.; A. BIRULA (28).
 Persia and Centr. Asia. *Galeodidæ*; A. BIRULA (29).
 W. Persia and Beluchistan. *Scorpiones*, list and n. spp.; A. BIRULA (25).
 Indo-China. *Arachnida*, list and descript.; E. SIMON (184).
 India. *Ixodes* on *Tragulidæ*; LAVARRA (104).

4. *Malay Archipelago.*

- Java. *Araneæ* n. sp.; E. SIMON (187): *Thelyphonus* (anatomy); DAWYDOFF (56).
 Sarawak. *Scorpiones*, list and n. sp.; BORELLI (34).
 Aru Island. *Scorpiones* n. sp.; A. BIRULA (31).

5. *Australia and Pacific Islands.*

- Australia (Bounty Island). *Araneæ* n. g.; H. R. HOGG (87).
 N. Australia (Gulf of Carpentaria). *Araneæ* n. sp.; RAINBOW (164).
 W. Australia. *Araneæ* n. spp.; RAINBOW (164).
 S. Australia. *Scorpiones* n. sp.; A. BIRULA (30).
 Tasmania. *Araneæ* (one cave spider); RAINBOW (164).
 Sandwich Islands. *Araneæ*; E. SIMON (189).
 New Zealand. *Araneæ* n. sp.; H. R. HOGG (87): *Ixodes* n. sp.; CHILTON (44).
 Gilbert Island. *Araneæ*; RAINBOW (164).

6. *North America.*

- N. America. A classification of N. American Spiders; COMSTOCK (47).
 N.-East United States. *Lycosidæ* and *Pisauridæ*, list and n. spp.; T. H. MONTGOMERY (127 & 128).

N. America. *Lycosidæ* n. spp.; CHAMBERLIN (42 & 43): *Limnesia* 2 n. spp.; WOLCOTT (236).

Kansas. *Aranææ* n. spp.; T. W. SCHEFFER (179-182).

New York. *Opiliones* n. spp.; C. R. CROSBY (53): *Acari* n. sp. (?); BEUTENMÜLLER (23).

Texas. *Lycosidæ* and *Pisauridæ*, syn. and n. spp.; T. H. MONTGOMERY (127 & 128).

Florida. *Aranææ*, *Scorpiones* and *Acari* n. spp.; BANKS (12).

California. *Aranææ*, *Opiliones* and *Acari* n. spp.; BANKS (15).

Bermuda Island. *Aranææ* and *Acari*, list of spp. and 3 n. spp. of *Aranææ* (*Oonops*, *Anyphæna* and *Eutichurus*); BANKS (10).

7. Central and South America.

Mexico. (Fauna of Cacahuamilpa caves) list of *Arachnida*; A. L. HERRERA (85): *Isodes*; A. DUGÈS (58).

Mexico and Central America. *Aranææ* and *Opiliones*; F. O. P. CAMBRIDGE (39).

Argentina. *Hydrachnidæ* n. sp.; NORDENSKIÖLT (136).

Tucuman. *Scorpiones*; E. SIMON (185).

S. Chili and Magellan. *Aranææ* n. spp.; E. SIMON (188).

Patagonia. *Chernetes*; ELLINGSEN (61).

B. GEOLOGICAL.

Palæontological Spiders; A. FRISCH (71 & 72).

Kreischeria wiedi Geinitz and *K. geinitzi* Brongniart, discussed and figured; A. THEVENIN (201).

†Rochdale Carboniferous, *Eoscorpious* sp. n., W. BALDWIN (8); also W. BALDWIN & W. H. SUTCLIFFE (9).

IV. SYSTEMATIC INDEX †.

General Classification of *Arachnida* (inclus. *Trilobites*, *Limulus* et *Pantopoda*):

Grade A. *Anomomeristica*.

Subclass. *Trilobitæ*.

Grade B. *Nomomeristica*.

Subclass i. *Pantopoda*.

Subclass ii. *Enarachnida*.

Grade (a) *Delobbranchia* n. nom. (*Hydropneusta* Pocock).

Ordo i. *Xiphosura*.

Ordo ii. *Gigantostraca*.

Grade (b). *Eulobobbranchia* n. nom. (*Æropneusta* Pocock).

Sectio (a) *Pectinifera*.

Ordo i. *Scorpionidea*.

Subordo. *Apoxyppoda*.

Subordo. *Dionychopoda*.

Ordo ii. *Pedipalpi*.

Subordo. *Uropygi*.

Trib. i. *Urotricha*.

Trib. ii. *Tartaridæ*.

† This sign when prefixed to a quotation indicates a fossil form or forms. Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- Ordo iii. *Araneæ*.
- Subordo. *Mesothelæ*.
- Subordo. *Opisthothelæ*.
- Ordo iv. *Palpigradi*.
- Ordo v. *Solifugæ*.
- Ordo vi. *Pseudoscorpiones*.
- Subordo. *Panctenodactyli*.
- Subordo. *Hemictenodactyli*.
- Ordo vii. *Podogona* **n. nom.** (= *Meridogastra*).
- Ordo viii. *Opiliones*.
- Subordo. *Cyphophthalmi*.
- Subordo. *Mecostethi*.
- Subordo. *Plagiostethi*.
- Ordo ix. *Rhynchostomi* (*Acarî*).
- Subordo. *Notostigmata*.
- Subordo. *Cryptostigmata*.
- Subordo. *Metastigmata*.
- Subordo. *Prostigmata*.
- Subordo. *Vermiformia*.
- Subordo. *Tetrapoda*;

E. RAY LANKESTER, Quart. J. Micr. Sci. (n. s.) No. 190, xlviii, pt. 2, pp. 165-269, 77 text-figg.

General Classification of Arachnida:

Subclass i. *Ctenophora* Pocock.

Ordo. *Scorpiones*.

Subclass ii. *Lipoctena* Pocock.

1. Sect. *Patellata* **n. nom.**

1. Subsect. *Megoperculata* Börner.

Ordo. *Pedipalpi*.

Ordo. *Araneæ*.

2. Subsect. *Cryptoperculata* Börner.

Ordo. *Meridogastra* Thorell.

Ordo. *Anthracomarti* Karsch (fossil).

Ordo. *Opiliones* Sund.

Ordo. *Acarina* Nitzsch.

2. Sect. *Haplocnemata* **n. nom.**

Ordo. *Chelonethi* Thorell.

Ordo. *Solifugæ* Sund.;

C. BÖRNER, Zoologia, Stuttgart, 1904.

General classification of the Arachnida Micrura, key to the orders (*Palpigradi*, *Pedipalpi*, *Araneæ*), p. 143; H. J. HANSEN & W. SORENSSEN, on two orders of Arachnida etc.

Brief account on classification of Arachnida; key to orders p. 14, key to spiders' families p. 26; J. H. COMSTOCK & ANNA B. COMSTOCK, a manual for the study of insects (Arachnida, pp. 12-14, 48 text-figg.).

I. SCORPIONES.

Close affinity of *Limulus* and Scorpion; LANKESTER, p. 205, Quart. J. Micr. Sci. (n. s.) No. 190, xlviii, No. 2.

Archisometrus shelfordi, Sarawak, p. 1; BORELLI, Boll. Mus. Torino xix, No 477, **n. sp.**

Butheolus melanurus Kessler and *B. melanurus persa* Birula, note on, pp. 74 & 75; BIRULA, Bull. Ac. St. Petersb. xix, No. 2 (1903).

Buthus occitanus maroccanus, Marocco, p. 106, **n. subsp.**, *B. occitanus berberensis* Pocock, *B. atlantis* Pocock, note on, pp. 106 & 107, *B.*

- acuteacarinatus abyssinicus*, Abyssinia (Kachenuha), p. 108, **n. subsp.**, *B. deserticola*, S. Algeria, p. 108, **n. sp.**, *B. amoureuxi* Savigny, note on, p. 110; BIRULA, Bull. Ac. St. Petersb. xix, No. 3 (Oct. 1903), **n. sp. & n. subsp.**
- B. doriae* Thorell, *B. eupeus thersites* C. Koch, *B. eupeus afghanus* Pocock, *B. eupeus kirmanensis* Birula, *B. caucasicus intermedius* Birula, *B. zarudnyi* Birula, note on, pp. 68-70, *B. zarudnyi sarghadensis*, Beluchistan, p. 70, **n. subsp.**, *B. palpator*, prov. Ssarghad, p. 72, **n. sp.**; BIRULA, t. c. No. 2 (1903), **n. sp. & n. subsp.**
- B. eupeus thersites* C. Koch, note on, p. 1, *B. eupeus barszczewskii*, Buchara, p. 2, **n. subsp.**, *B. kaznakovi*, prov. Schugnan, p. 2, **n. sp.**, *B. caucasicus intermedius* Birula, note on, p. 3, *B. caucasicus fuscus* Birula, note on, p. 4, *B. caucasicus przewalskii* Birula, note on, p. 5, *B. martensi* Karsch, note on, p. 6; BIRULA, Annuaire Mus. St. Petersb. ix (1904), **n. sp. & n. subsp.**
- B. gibbosus* Brullé, note on, p. 295; BIRULA, t. c. (1903).
- B. hottentota minax* L. Koch, from Abyssinia (riv. Niama) p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Centrurus hentzi*, Florida (Runnymede and Fort Reed), p. 142; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- †*Eoscorpium sparthensis*, Carboniferous of Rochdale, BALDWIN, p. 525, Tr. Manchester Geol. Soc. xxviii, **n. sp.**
- Euscorpium candiota*, Crete Isl. p. 295; BIRULA, Annuaire Mus. St. Petersb. viii, 1903, **n. sp.**
- Hemibuthus zarudnyi*, Makran, pr. Ge. p. 75; BIRULA, Bull. Ac. St. Petersb. xix, No. 2 (1903), **n. sp.**
- Hemihoplopous n. g.* (near *Urodacus*) *yaschenkoi*, South Australia; BIRULA, Annuaire Mus. St. Petersb. viii, No. 12, Nouvelles, **n. sp.**
- Hemiscorpion persicum*, Beluchistan (prov. Ssarbas), p. 77; BIRULA, Bull. Ac. St. Petersb. xix, No. 2, 1903, **n. sp.**
- Hemiscorpion tellini*, Halibaret (Col. Erythrea), p. 3; BORELLI, Boll. Mus. Torino xix, No. 463, **n. sp.**
- Jurus dufoureyus* Brullé, note on, p. 298; BIRULA, Annuaire Mus. St. Petersb. viii (1903).
- Opisthacanthus davydovi*, Aroe Island; BIRULA, t. c. No. 12, Nouvelles, **n. sp.**
- O. africanus* E. Sim., from Ababona forest, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Opisthophthalmus wahlbergi* Thorell, p. 139, *O. carinatus* Peters (= *O. anderssoni* and *histrion* Thorell + *Petrooicus furcatus* Sim.) p. 141, *O. schlechteri* Purc. p. 142, *O. granifrons* Pocock, p. 144, *O. leipoldti* Purc. p. 146, *O. capensis* Herbst (variations and synonym.), p. 147, *O. pallidipes* C. Koch, p. 151, *O. peringueyi* Purc. p. 153, *O. karrooensis* Purc. p. 153, *O. gigas* Purc. p. 154, *O. austerus* Karsch. p. 155, *O. chaperi* E. Sim. p. 156, *O. fossor* Purc. p. 157, *O. macer* Th. (= *O. fallax* Th. ♀), p. 158, *O. latimanus* C. K. (= *O. calvus* L. K.), p. 159, *O. pugnax* Thorell (= *O. curtus* Th. ♀), p. 161, *O. glabrifrons* Peters (= *O. laeviceps* and *prædo* Thorell), p. 161, *O. crassimanus*, Namaqualand, **n. sp.**, p. 164, *O. longicauda*, Great Bushmanland, **n. sp.**, p. 168, *O. pattisoni*, Sneeuwkop Mountain, **n. sp.**, p. 171, synopsis of the species of *Opisthophthalmus*, p. 175; W. F. PURCELL, Ann. S. African Mus. iv, pt. ii, **n. spp.**
- Parabuthus liosoma* Hempr. and Ehr., note on, p. 112, *P. liosoma dmitrievi*, Abyssinia (Kachenuha), p. 113; BIRULA, Bull. Ac. St. Petersb. xix, No. 3 (1903), **n. subsp.**
- P. villosus* Peters, *granimanus* Pocock, *heterurus* Pocock, from Centr. Abyssinia, p. 444; E. SIMON, Bull. Mus. Paris No. 7, 1904.
- Prionurus*, *Buthus*, *Archisometrus*, *Zabius*, *Tityus*, *Centrurus*, *Rhopalurus*,

- Scorpio*, *Heterometrus*, *Palamnaeus*, *Hemiscorpion*, *Opisthacanthus*, *Ischnurus*, *Bothriurus*, nomenclature notes, pp. 195–201; H. KRAEPELIN, Zool. Anz. xxviii, No. 6.
- Prionurus crassicauda orientalis* Birula, note on, p. 67, *P. mauritanicus* Pocock, note on, p. 105; BIRULA, Bull. Ac. St. Petersb. xix, Nos. 2 & 3 (1903).
- Rhopalurus borelli* Pocock, pl. iv, figg. 1–3, *R. junceus* Herbst, pl. iv, fig. 4, figured; R. I. Pocock, Ann. Nat. Hist. Ser. 7, xiii.
- Scorpio smithi* Pocock, from Somaliland, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- S. indicus*, embryology; POLJANSKY, Trudui St. Petersb. Obshch. xxxiii, pp. 42. etc.
- Tityus floridanus*, Florida (Key West), p. 142; BANKS, P. Ac. Philad. Jan. 1904, n. sp.
- Uroplectes occidentalis* E. Sim. & *U. fischeri* Karsch, from Centr. Abyssinia, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.

II. PEDIPALPI.

Pedipalpi, external morphology of Pedipalpi, pp. 6–22, internal morphology, pp. 24–139, systematic and phylogeny, pp. 141–157, bibliographical index, p. 158.

Systematic arrangement of Pedipalpi, p. 148 :

- I. Subordo *Palpigradi* Thorell (fam. *Kaenenidae* Grassi).
- II. Subordo *Uropygi* Thorell.
 - I. Tribu *Schizopeltidia* n. nov. (fam. *Schizonotidae*).
 - II. Tribu *Holopeltidia* C. Br. (fam. *Thelyphonidae* Lucas).
- III. Subordo *Amblypygi* Thorell (fam. *Tarantulidae*) ;
C. BÖRNER, Zoologica 1904, pp. 1–174, pls. and text-figg.

Damon medius Herbst, from Abyssinia (Anton Riv.) p. 443, E. SIMON, Bull. Mus. 1904, No. 7.

Thelyphonus caudatus, embryology, SCHIMKEWITSCH, pp. 56–77 and 93–110, Trudui St. Peterb. Obshch. xxxiii.

Trithyreus, *Phrynichus*, *Tarentula* and *Admetus*, nomenclature notes, pp. 201–204, K. KRAEPELIN, Zool. Anz. xxviii, No. 6.

III. PALPIGRADI.

Palpigradi, rapp. as suborder to *Pedipalpi*, external and internal morphology of *Kaenia mirabilis* Grassi; C. BÖRNER, Zoologica 1904, pp. 1–174, pls. & text-figg.

IV. ARANEÆ.

Classification of spiders, historical and systematical, new arrangement of suborders and families, key to suborders, p. 83.

1. Verticulatæ (Liphistiidae).
2. Tetraneurones (Aviculariidae, Atypidae, Hypochilidae).
3. Filistatidae (Uloboridae, Dictynidae (pars), Ecobiidae, Eresidae, Filistatidae, Sicariidae, Leptonetidae, Oonopidae, Dysderidae, Palpimanidae, Uroctidae, Phleidae, Theridiidae, Argiopidae, Mimetidae).
4. Chalinuræ (Hersiliidae).
5. Polytrichiae (Psechridae, Zoropsidae, Dictynidae (pars), Drassidae, Zodariidae (pars), Clubionidae, Agelenidae (pars), Pisauridae, Lycosidae, Oxyopidae, Senoculidae).

6. Stichotrichiæ (Dictynidæ (pars), Zodariidæ (pars)).
7. Saltigradæ (Salticidæ).
8. Laterigradæ (Thomisidæ).
9. Apneumones (Caponiidæ);

DAHL, F., SB. Ges. naturf. Berlin, pp. 85-120.

General synopsis of spiders' families of Central American fauna; FR. CAMBRIDGE, Arachn.-Aran. ii, Biol. Centr.-Amer., p. 541.

Variability in the number of teeth on the claws of adult spiders, showing their unreliability for systematic description; C. HARTMANN, Biol. Bull. vi, pp. 191-197, 4 text-figg.

Structure and classification of spiders, introductory sketch; A. E. THOMSON, Tr. Manchester Micr. Soc. 1903, pp. 54-70.

Aviculariidae.

Ancylotrypa cornuta, Cape Colony (Dumbrody), p. 119; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**

Bemmeris pardalina E. Sim. = *Harmachastes collinus* Pocock (Juv.), p. 121; PURCELL, t. c. (foot note).

Brachionopus pretoriae, Pretoria, p. 126; PURCELL, t. c. **n. sp.**

Cadmon **n. g.** (typ. *Moggridgea abrahami* Cb.), p. 143, *C. thoracica*, Cape peninsula, p. 144, pl. ix, fig. 1, *C. affinis*, Cape peninsula, p. 146, pl. ix, fig. 2, *C. congener*, Cape peninsula, p. 146, pl. ix, fig. 3, *C. dubia*, Cape peninsula, p. 147, pl. ix, fig. 4; O. P. CAMBRIDGE, Ann. S. African Mus. 1903, iii, pt. 5, **n. spp.** (Incompletely recorded, No. 24, Zool. Rec. 1903.)

Chilobrachys paviei E. Sim., p. 271, *C. dyscolus* E. Sim., p. 273, new description; E. SIMON, Mission Pavie iii.

Clitotrema **n. g.** p. 444, *zeltneri*, Abyssinia (Mt. Fické), p. 444; E. SIMON, Bull. Mus. Paris, No. 7, 1904, **n. sp.**

Ctenolophus **n. g.** (type *Acanthodon kolbei* Purcell), p. 117, key to species, p. 118; PURCELL, Tr. S. African Soc. xv, p. 111.

Ctenonemus pectiniger E. Simon = *Harmachastes* Juv., p. 121; PURCELL, t. c. (foot note).

Harpactirella schwarzi, Cape Colony (Willomore div.), p. 126; PURCELL, t. c. **n. sp.**

Idiops pungwensis, Pungwe river in Portuguese East Africa, p. 116; PURCELL, t. c. **n. sp.**

Melopæus albostriatus E. Sim., new description and fig., p. 270, pl. xvi, fig. 1; E. SIMON, Mission Pavie iii.

Migas paradoxus L. Koch, from Wanganui, New Zealand, note and text-fig., p. 68; H. R. HOGG, Ann. Nat. Hist. (7) xiii.

Moggridgea nigra, Cape Colony, p. 115; PURCELL, Tr. S. African Mus. xv, p. 111, **n. sp.**

Pelmatorycter pallidipes, Cape Colony (Matjesfontein), p. 120; PURCELL, t. c. **n. sp.**

Pisenor bicalcaratus, Centr. Abyss., p. 444; E. SIMON, Bull. Mus. Paris, No. 7, **n. sp.**

Pterinochilus junodi, Zoutpansberg, p. 66; E. SIMON, Rev. Suisse Zool. xiii, **n. sp.**

Spiroctenus pallidipes, Cape Colony (Worcester div.), p. 121, *S. latus*, Cape Colony (Wellington), p. 125; PURCELL, Tr. S. African Soc. xv, p. 111, **n. spp.**

Hypochilidae.

Ectatosticta australis E. Sim. 1902 = *Theridion troglodytes* Higgins and Petterd, p. 327; W. J. RAINBOW, Rec. Austral. Mus. v, pt. 5.

Uloboridae.

- Avellopsis* n. g. p. 128, *capensis*, Cape Colony, p. 128; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Hyptiotes cavatus Hentz, Eggs and Cocoon of, p. 278, text-fig.; T. H. SCHEFFER, Ent. News Philad. xv.
Menneus dromedarius, Cape Colony (King Williamstown), p. 127; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Miagrammopes constrictus, Natal, p. 130; PURCELL, t. c. **n. sp.**
M. rimosus E. Simon, new description, p. 273; E. SIMON, Mission Pavie iii.
Uloborus californicus, California (St Helena), p. 351, pl. 39, fig. 35; N. BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
U. geniculatus Oliv., from Bermuda Island, p. 273; N. BANKS, Tr. Connect. Ac. xi.

Dictynidae.

- Auximus schreineri*, Cape Colony (Hanover), p. 131, pl. x, fig. 1, *A. silvaticus*, Cape Colony, forest at the Knysna, p. 132, pl. x, fig. 2, *A. longipes*, Cape peninsula, p. 132, pl. x, fig. 3; PURCELL, Tr. S. African Soc. xv, p. 111, **n. spp.**
Dictyna calcarata, California (San Pedro), p. 342, pl. 40, fig. 42; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
D. floridana, Florida (Lake Worth), p. 125; BANKS, P. Ac. Philad., Jan. 1904, **n. sp.**
D. fuegiana E. Sim., supp. descrip., p. 84, *D. togata* Allen Gardiner, p. 85; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Dictynina n. gen. p. 342, *pallida*, California (Mt. Shasta), p. 342; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Dictyolathys californica, California (Palo Alto), p. 343, pl. 38, fig. 7, pl. 40, figg. 40 & 46; BANKS, t. c. **n. sp.**
Göldia obscura Keyserl. = (probably) *Titanoeca patellaris* E. S., p. 86; E. SIMON, Ann. Soc. ent. Belgique xlviii.
Heterodictyna nov. nom. for *Dictyna* pars, p. 118; F. DAHL, SB. Ges. naturf. Berlin 1904.
Macrobunus spinifer Tullgren = *Myropsis backhauseni* E. S., p. 86; E. SIMON, Ann. Soc. ent. Belgique xlvii.
Pseudauximus pallidus, Cape Colony (Hanover), p. 133, pl. x, fig. 4; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Thallumetus acanthochirus, Punta Arenas, p. 85, *T. colatus*, La Herradura, prov. Coquimbo, p. 85; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Eresidae.

- Adonea variegata*, Cape Colony, p. 137, pl. x, fig. 7; PURCELL, Tr. S. African Soc. xv, p. 111, **n. sp.**
Dresserus angusticeps, Cape Colony, p. 139, pl. x, fig. 9, *D. laticeps*, Cape Colony, Namaqualand div., p. 140, pl. x, fig. 10; PURCELL, t. c. **n. spp.**
Seothyra fasciata, Cape Colony, S. W. Kalahari, p. 138, pl. x, fig. 8; PURCELL, t. c. **n. sp.**
Stegodyphus canus, Cape Colony, Namaqualand div., p. 134, pl. x, fig. 5, *S. teutoricola*, Cape Colony (Hanover and Eierfontein), p. 135, pl. x, fig. 6; PURCELL, t. c. **n. spp.**

Filistatidae.

- Filistata hibernalis* Hentz, from Bermuda Island, p. 268; N. BANKS, Tr. Connect. Ac. xi.

Leptonetidae.

- Leptoneta californica*, California (Mt. Diablo, Contra-Costa County), p. 333, pl. 38, fig. 11; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Physoglenes n. g. p. 87, *P. vivesi*, Chili, Los Perales, p. 88, text-fig.; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Oonopidae.

- Oonops bermudensis*, Bermuda Islands, p. 269; N. BANKS, Tr. Connect. Ac. xi, text-fig. **n. sp.**

Sicariidae.

- Drymusa silvicola*, forest at Knysna, p. 152, pl. xi, figg. 24 & 25, *D. producta*, forest on the mountain side at Swellendam, p. 153, pl. xi, fig. 26, key of the species, p. 154; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**
Loxosceles spinulosa, Cape Colony (Swellendam div.), p. 140; PURCELL, t. c. **n. sp.**
Scytodes montana, Cape peninsula, p. 141, pl. x, fig. 11, *S. lycosella*, Natal (Rietvlei), p. 142, pl. x, fig. 12, *S. triangulifera*, Prince Albert village, p. 143, pl. x, fig. 13, *S. leipoldti*, Clanwilliam, p. 143, *S. flagellata*, Caledon div., p. 144, pl. x, fig. 15, *S. arenacea*, Orange River, p. 145, *S. testudo*, Cape peninsula, p. 145, pl. x, fig. 17, *S. gooldi*, Cape Colony, p. 146, pl. x, fig. 18, *S. subulata*, St. Helena Bay, p. 147, *S. lyriformis*, Hanover, p. 148, *S. karrooica*, Matjesfontein, p. 148, *S. silvatica*, Knysna forest and Port Elizabeth, p. 148, *S. caffra*, Zululand, p. 149, pl. x, fig. 20, *S. cedri*, Clanwilliam div., p. 149, pl. x, fig. 21, *S. lanceolata*, Hanover, p. 150, pl. x, fig. 22, *S. elizabethæ*, Port Elizabeth, p. 150, pl. x, fig. 23, key to the South African species, p. 151; PURCELL, t. c. **n. spp.**
Scytodes longipes Lucas and *S. fusca* Walck., from Bermuda Island, pp. 268 & 269; N. BANKS, Tr. Connect. Ac. xi.

Dysderidae.

- Ariadna dentigera*, Cape Town, p. 154, *A. lightfooti*, Caledon div., p. 155, *A. jubata*, Namaqualand div. (Tsabis), p. 156, *A. kolbei*, Kentani dist. (Transkei), p. 157, *A. bilineata*, Cape Colony, p. 158, *A. karrooica*, Cape Colony, p. 159, *A. capensis*, Cape Pen. (Wynberg Hill), p. 160, *A. segestrioides*, Dumbrody, p. 161, *A. umtalica*, Mashonaland and Bechuanaland, p. 162, *A. scabripes*, Hanover, p. 162, synopsis of the South African species, p. 164; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**
Dysdera crocata C. Koch, from Bermuda Island, p. 269; N. BANKS, Tr. Connect. Ac. xi.
Harpactes drassoides E. Simon, new descript. and fig., p. 280, pl. v, figg. 1 & 2; R. DE LESSERT, Observ. Ar. du bassin du Léman.
Segestriella n. gen. p. 164, *S. gryllotalpa*, Cape Colony, St Helena Bay, p. 105; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. sp.**
Stalita mrázeki, Montenegro (Lipska pecina cave), p. 2; NOSEK, Arachn. Montenegrina, SB. Bohmisch. Ges. 1903, No. 46, **n. sp.**

Caponiidae.

- Caponia spiralifera*, Cape Colony (Hanover), p. 166, pl. xi, fig. 28, *C. karrooica*, Matjesfontein, p. 166, pl. xi, fig. 30, *C. forficifera*, Worcester

- div. (Brandvlei) and Knysna Forest, p. 167, pl. xi, fig. 31, *C. braunsi*, Willowmore, p. 167, pl. xi, fig. 32, *C. capensis*, Cape Peninsula, p. 168, pl. xi, fig. 33, *C. hastifera*, Willowmore, p. 168, pl. xi, fig. 34, *C. simoni*, Worcester, p. 168, pl. xi, fig. 35, key of the species of *Caponia*, p. 169 ; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**
Diploglena **n. g.** p. 169, *D. capensis*, Cape Colony, p. 170, pl. xi, fig. 36 ; PURCELL, t. c. **n. sp.**

Prodidomidæ.

- Prodidomus capensis*, Cape Town, Dumbrody, p. 170, pl. xi, fig. 39, *P. purpurascens*, Cape Penins., p. 171, pl. xi, fig. 40, *P. scaber*, Cape Colony (Prince Albert), p. 172, pl. xi, fig. 42 ; PURCELL, Tr. S. African Soc. xv, pt. iii, **n. spp.**

Drassidæ.

- Note on genera *Laronia*, *Callilepis* and *Pterotricha* ; KULCZYŃSKI, Fragmenta i, p. 548.
 Key to Chilian *Drassidæ* ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, p. 88.
Drassinella **n. g.** p. 335, *D. modesta*, California (Santa Catalina Island), p. 335, pl. 39, fig. 33 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Drassodes californica (sic.), California (Downieville), p. 338, pl. 38, fig. 8, pl. 39, fig. 28 ; BANKS, t. c. **n. sp.**
D. heeri Pavesi, note and synonymy., p. 283, pl. v, fig. 5 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
Gnaphosa californica, California (Claremont), p. 335, pl. 38, fig. 10 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
G. islandica W. Sor., new descript. and observ. ; W. SÖRENSEN, Ent. Meddel. 1904 (2), 1 heft.
G. pseudolaponica, Norway, p. 6 ; E. STRAND, Forh. Selsk. Christian. 1904, No. 5, **n. sp.**
G. utahana, Utah, p. 110 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
Herpyllus angustus, California (San Pedro), p. 337, pl. 40, fig. 43 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
H. californicus, California (Lakeside), p. 110 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
Megamyrmeleon gayi, Chili (Penaflor), p. 89 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Melanophora porteri, Chili (Los Perales), p. 89 ; E. SIMON, t. c. **n. sp.**
Prosthesina præfica L. Koch, note and syn., p. 289, *P. fortuita* E. Sim., p. 290, pl. v, fig. 4, *P. exigua* Müller, pl. v, fig. 3 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
P. tenera, Denmark, p. 280 ; W. SÖRENSEN, Ent. Meddel. 1904 (2) 1 heft. **n. sp.**
Sergiolus cyaneiventris E. Simon, note on, p. 122 ; BANKS, P. Ac. Philad., Jan. 1904.
Zelotes aprilius, Maryland, p. 110 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
Z. femoralis, California, p. 336, pl. 38, fig. 1, *Z. maculata*, California (Claremont), p. 336, pl. 40, fig. 38, *Z. pacifica*, California (Santa Rosa Island), p. 336, pl. 39, fig. 15 ; BANKS, P. Calif. Ac. iii, No. 13, **n. spp.**

Zodariidæ.

- Capheris decorata*, Zoutpansberg, p. 66; E. SIMON, Rev. Suisse Zool. xii, 1904, **n. sp.**
Diores simoni, Cape Penins., p. 147, pl. 9, fig. 5, *D. cognata*, Cape Penins., p. 149, pl. 9, fig. 6; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**

Hersiliidæ.

- Hersilia siamensis* E. Sim., new descript., p. 274; E. SIMON, in Mission Pavie iii.

Pholcidæ.

- Pholcus tipuloides* L. Koch, from Bermuda Island, p. 271; N. BANKS, Tr. Connect. Ac. xi.

Theridiidæ.

- Stridulating organs in several genera of Theridiidæ (Rhomphæa, Argyrodes, Theridion), p. 559, pl. 14, figg. 24-29; KULCZYŃSKI, Fragmenta i.
Ariamnes corniger E. Sim., descript. of male, p. 339, text-fig.; E. SIMON, Fauna Hawaiensis iii.
Coleosoma floridana (sic) **nov. nom.** for *Coleosoma blandum* Keyserling nec Cambridge; BANKS, P. Ac. Philad., Jan. 1904, p. 128.
Coscinida triangulifera, Java, p. 68; E. SIMON, Rev. Suisse Zool. 1904, **n. sp.**
Dipoena erythropus E. Simon, supp. descript. p. 306; R. DE LESSERT, Observ. Ar. du bassin du Léman.
D. pictipes, California (Claremont), p. 345; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Enoplognatha maritima E. Simon, supp. descript., p. 39, pl. v, fig. 7; R. DE LESSERT, Observ. Ar. du bassin du Léman.
E. molesta, Cape Colony, p. 149, pl. x, fig. 1, *E. inornata*, Cape Col. (Clanwilliam), p. 151, pl. x, fig. 11; O. P. CAMBRIDGE, Ann. S. African Mus. iii, p. 5, **n. spp.**
Episinus truncatus Latr. and *lugubris* E. Sim., note on, p. 549; KULCZYŃSKI, Fragmenta i.
Euryopis californica, California (Los Angeles), p. 345, pl. 39, fig. 23 & 26; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Latrodectus concinnus, Cape Penins., p. 151, pl. 10, figg. 3 & 4, *L. indistinctus*, Cape Penins., p. 154, pl. 11, fig. 1; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**
L. tredecim-guttatus Rossi, from Mt. Fické Abyss.; E. SIMON, Bull. Mus. Paris, No. 7, p. 442.
L. geometricus C. Koch, from Bermuda Island, p. 272; N. BANKS, Tr. Connect. Ac. xi.
Mæro **n. g.** p. 156, *M. quadrimaculata*, Cape Town, p. 157, pl. 11, fig. 4; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. sp.** (incompletely Recorded 1903, No. 24)*.
Rhomphæa longa, Herzegovina, p. 533, pl. 14, fig. 1 & 2, KULCZYŃSKI, Fragmenta i, **n. sp.**
Sphyrrotinus delphini, Punta Arenas, p. 92; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**

* *Mæro quadrimaculata* Cambr. is certainly synonymous with *Cyatholipus quadrimaculatus* E. Simon, Hist. Nat. Ar. t. 1, p. 713.—(Note of Recorder.)

- Teutana lepid*a, Cape Penins., p. 154, pl. 11, fig. 2, *T. connexa*, Cape Penins., p. 156, pl. 11, fig. 3; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**
- Theridion auberti*, Zoutpansberg, p. 67; E. SIMON, Rev. Suisse Zool. 1904, **n. sp.**
- T. bertkawi* Bösenberg, def. and fig., p. 303, pl. v, fig. 11, 12, 13 & 16; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- T. bösenbergi* **n. nom.** for *T. bertkawi* Bösenberg præocc.; E. STRAND, Ent. Zeit. xviii, No. 3.
- T. delicatum*, Cape Penins., p. 157, pl. 11, fig. 5, *T. dedux*, Durban, p. 158, pl. 12, fig. 1, *T. purcelli*, Cape Town, p. 159, pl. 12, fig. 2; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. spp.**
- T. floridensis* (sic) **n. nom.** for *Th. lyra*, Keyserling non Hentz; BANKS, P. Ac. Philad., Jan. 1904, p. 125.
- T. californicum*, California (Mill Valley), p. 344, pl. 39, fig. 34; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- T. fuegianum* Allen Gardiner, p. 90, **n. sp.**, *T. attritum* and *spinipes* Nicolet, observ. and descript., pp. 91 & 92; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904.
- T. tepidariorum* C. K., *studiosum* Hentz and *rufipes* Lucas, from Bermuda Island, p. 272; N. BANKS, Tr. Connect. Ac. xi.
- Tricantha tricornis* E. Sim., new descript., p. 150; FR. CAMBRIDGE, Biol. Centr.-Amer. Arachn.-Aran. ii.

Argiopidae.

- Acacesia*, new defin., p. 502, *A. foliata*, p. 502, pl. 48, figg. 1 & 2; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Acrosoma calcaratum* O. P. Cambr. = *Keyserlingia cornigera* O. P. Cambr., p. 532; FR. CAMBRIDGE, t. c.
- Amamra* O. P. Cambr. = *Vixia*, p. 485, *A. nigromaculata* O. P. Cambr. = *Epeira clavispina* O. P. Cambr., p. 509; FR. CAMBRIDGE, t. c.
- Araneus* (*Epeira*) *ulrichi* Hahn, p. 363, pl. v, fig. 25, *A. (Singa) pygmæus* Sund., p. 370, suppl. descript.; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Aranea nephiloides*, p. 511, pl. 48, fig. 22, *A. smithi*, p. 511, pl. 49, fig. 1, *A. sargi*, p. 511, pl. 49, fig. 2, *A. gravabilis*, p. 511, pl. 49, fig. 4, *A. aculifera*, p. 512, pl. 49, fig. 5, *A. incerta*, p. 512, pl. 49, figg. 7 & 8, *A. dilatata*, p. 513, pl. 49, fig. 9, *A. helveola*, p. 513, pl. 49, fig. 10, *A. pallidula*, p. 514, pl. 49, fig. 13, *A. septemmammata*, p. 514, pl. 49, fig. 15, *A. spinigera*, p. 515, pl. 49, fig. 16, *A. rufipes*, p. 515, pl. 49, fig. 17, *A. detrimentosa*, p. 515, pl. 49, fig. 18, *A. cylindrica*, p. 515, pl. 49, figg. 19 & 20, *A. laticeps*, p. 516, pl. 49, fig. 21, *A. nigropustulata*, p. 516, pl. 49, fig. 22, *A. veniliae*, p. 516, pl. 49, figg. 23 & 24, *A. championi*, p. 517, pl. 50, figg. 1 & 2, *A. mormon*, p. 517, pl. 51, fig. 1, *A. grafica*, p. 518, pl. 51, fig. 2, *A. flava*, p. 518, pl. 51, fig. 3, *A. fasciolata*, p. 519, pl. 51, fig. 5, new descript. and fig., *A. sinistra*, Mexico, p. 510, pl. 48, fig. 21, *A. concolorata*, Panama, p. 511, pl. 49, fig. 3, *A. glabrata*, Panama, p. 512, pl. 49, fig. 6, *A. dilatata*, Guatemala, p. 513, pl. 49, fig. 9, *A. nigrocincta*, Panama, p. 513, pl. 49, figg. 11 & 12, *A. anguinifera*, Mexico, p. 514, pl. 49, fig. 14, *A. cyrtophoroides*, Mexico, p. 518, pl. 51, fig. 4; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, **n. spp.**
- Araneus rufipalpis* Lucas, *theisi* Walck., *cereolus* and *strupifer* E. Simon, from Centr. Abyssinia; E. SIMON, Bull. Mus. Paris 1904, No. 7, p. 443.
- A. exsertus*, Gulf of Carpentaria (Mornington Island), p. 102, figg. 26 & 27; RAINBOW, Rec. Austral. Mus. v, pt. 2, **n. sp.**

- A. singæformis*, Kansas, p. 259, pl. 17, figg. 4, 5, & 6; T. H. SCHEFFER, Ent. News Philad. xv, **n. sp.**
- Argiope lordi* Cambr., from Harrar, *A. flavipalpis* Lucas, from Belg. Congo; E. SIMON, Bull. Mus. Paris 1904, No. 7, p. 442.
- Argyropeira hortorum* Hentz, from Bermuda Island, p. 273; N. BANKS, Tr. Connect. Ac. xi.
- Bathyphanes pallidula* (sic), California (Claremont), p. 346, pl. 40, fig. 45; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Carepalxis*, note on, p. 520; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Centromerus balteatus* E. Simon, suppl. descrip., p. 335, pl. v, fig. 21; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Cnephalocotes subæqualis* Westring = *Walckenæra fortuita* O. P. Cambr., *Lophomma laudatum* Kulczynski et *Cnephalocotes fuscus* O. P. Cambridge, p. 315; R. DE LESSERT, t. c.
- Cornicularia cuspidata* Bl., p. 9, pl. i, fig. 3; F. P. SMITH, J. Quekett Club 1904, ser. 2, t. ix.
- Coryphæus glabriceps* Fr. Cambridge = *Gongylidium distinctum* E. Simon; F. P. SMITH, p. 111, J. Quekett Club, ser. 2, t. ix.
- Cyclosa*, def. and key of the Centr.-Amer. spp. p. 491, *C. conica*, p. 493, pl. 46, figg. 19 & 20, *C. tuberculifera*, p. 493, pl. 47, fig. 1, *C. culta*, p. 493, pl. 47, fig. 2, *C. lacerta*, p. 494, pl. 47, fig. 3, *C. caroli*, p. 494, pl. 47, fig. 4, *C. furcata*, p. 494, pl. 47, fig. 6, *C. trifida*, p. 495, pl. 47, fig. 7, *C. bifurca*, p. 495, pl. 47, fig. 8, *C. walckenæri*, p. 495, pl. 47, fig. 9, *C. diversa*, p. 496, pl. 47, fig. 12, *C. clara*, p. 497, pl. 47, fig. 13, *C. fusiformis*, p. 497, new notes and figg., *C. conigera*, Mexico, p. 494, pl. 47, fig. 5, **n. sp.**; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- C. fissicauda* O. P. Cambr. = *Cyclosa bifurca* McCook, p. 495; FR. CAMBRIDGE, t. c.
- C. cervicula* McCook = *Cyclosa walckenæri* O. P. Cambr., p. 496; FR. CAMBRIDGE, t. c.
- C. caudata* Hentz, from Bermuda isl., p. 273; N. BANKS, Tr. Connect. Ac. xi.
- Cyrtarachne mexicana* and *C. dugesi* O. P. Cambridge = *Marxia stellata*, p. 481; FR. CAMBRIDGE, t. c.
- C. walleri* Blackw., from Tourkouana, p. 442; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- C. decentuberculata* O. P. Cambr., referred to the gen. *Glyptogona*; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, p. 523.
- Cyrtophora citricola* Forsk., from river Dongou, p. 442; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Diplocephalus fuscipes* Blackw., figured, p. 9, pl. i, fig. 4; F. P. SMITH, J. Quekett Club 1904, ix.
- Dicyphus cornutus* Blackw., figured, p. 9, pl. i, fig. 2; F. P. SMITH, t. c.
- Edricus*, def. p. 499, *E. spinigerus*, p. 500, pl. 49, fig. 25, *E. productus*, p. 500, pl. 49, fig. 26, *E. crassicauda*, p. 500, pl. 47, fig. 21; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Enidia* **n. nom.** for *Dicyphus* Menge præocc. p. 115; F. P. SMITH, J. Quekett Club, Ser. 2, ix.
- Entelecara acuminata* Wid., figured, p. 9, pl. i, fig. 1; F. P. SMITH, t. c.
- Epeira bifurcata* Keyserl. = *Cyclosa walckenæri* O. P. Cambr., p. 496, *E. cambridgei* Keyserl. = *E. illicita* O. P. Cambr., p. 506, *E. nava* O. P. Cambr. = *E. scutigera* O. P. Cambr., p. 508, *E. fecunda* O. P. Cambr. = *E. incerta* O. P. Cambr., 512, *E. nigrohumeralis* O. P. Cambr. = *E. detrimentosa* O. P. Cambr., p. 515, *E. destrecta* O. P. Cambr. = *E. conseqna* O. P. Cambr., p. 518; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- E. floridensis*, Florida (Miami), p. 129; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**

- E. emertoni*, North America, p. 111; BANKS, J. N. York Ent. Soc. June, 1904, **n. sp.**
- E. excelsa* Banks = *Ep. pacifica* McCook, p. 348; BANKS, P. Calif. Ac. iii, No. 13.
- E. mitifica* E. Simon, new description, p. 280; E. SIMON, in Mission Pavie iii.
- Erigoneæ*, spiders of the Erigone Group, list of British spp., p. 109; F. P. SMITH, J. Quekett Club, Ser. 2, vol. ix.
- Erigone aries* Kulcz. = *Scotinotylus antennatus* (Cambr.), var., p. 552; KULCZYNSKI, Fragmenta ii.
- E. californica*, California, p. 347, pl. 38, fig. 3; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Erigonidium n. gen.*, type *Erigone graminicola* Sund., p. 112; F. P. SMITH, J. Quekett Club, Ser. 2, vol. ix.
- Falconeria n. gen.*, type *Neriene cornuta* Blackw., p. 115; F. P. SMITH, t. c.
- Eustala*, def. and key of the Centr.-Amer. spp., pp. 503 & 504, *E. fuscovittata*, p. 505, pl. 48, figg. 3 & 4, *E. illicita*, p. 506, pl. 48, figg. 5 & 6, *E. anastera*, p. 506, pl. 48, figg. 7 & 8, *E. scutigera*, p. 508, pl. 48, figg. 11 & 12, *E. latebricola*, p. 508, pl. 48, fig. 15, *E. vegeta*, p. 509, pl. 48, figg. 16 & 17, *E. fragilis*, p. 509, pl. 48, fig. 18, *E. clavispina*, p. 509, pl. 48, fig. 19, *E. semifoliata*, p. 510, pl. 48, fig. 20; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- E. bijida*, Costa-Rica, p. 507, pl. 48, figg. 9 & 10, *E. guttata*, Mexico, Guatemala, Panama, p. 508, pl. 48, figg. 13 & 14; FR. CAMBRIDGE, t. c.
- Gasteracantha*, def. and key of the Cent.-Amer. spp., p. 524, *G. cancriformis*, p. 525, pl. 51, fig. 14, *G. kochi*, p. 525, pl. 51, fig. 15; FR. CAMBRIDGE, t. c.
- G. scapha* Gerst., from Choa and Tourkouana, *G. hildebrandti* Karsch, from Madi and Niam-Niams reg.; E. SIMON, Bull. Mus. Paris 1904, No. 7, p. 442.
- G. arcuata* Fabr., pl. 16, fig. 4, *G. propinqua* Cambr., pl. 16, fig. 5, *G. leucomelas* Dol., pl. 16, fig. 3, figured; E. SIMON, in Mission Pavie iii.
- Glyptogona*, note on, p. 523; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Gongylidiellum simoni*, Genève, p. 329, pl. 5, figg. 14 & 15; R. DE LESSERT, Observ. Ar. du bassin du Léman, **n. sp.**
- Hentzia*, new defin. p. 523, *H. trivittata*, p. 523, pl. 51, figg. 12 & 13; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Kaira*, def. and key of the Centr.-Amer. spp., p. 522, *K. gibberosa*, p. 522, pl. 51, fig. 9, *K. altiventer*, p. 522, pl. 51, fig. 10, *K. dromedaria*, p. 522, pl. 51, fig. 11; FR. CAMBRIDGE, t. c.
- Landana*, note on the genus, p. 95, *L. edwardsi*, Chili (los Perales), p. 94; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Larinia chloreis* Aud., from Herrer valley, p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Lepthyphantes zebrinus* Menge and *L. zimmermanni* Bertk., note on, p. 553, pl. 14, figg. 19 & 20, *L. frigidus* E. Simon, pl. 14, figg. 5, 13, 14, *L. annulatus* Kulcz. pl. 14, fig. 4, *L. kotulai* Tirol, p. 536, pl. 14, figg. 9 & 10, *L. (?) armatus* Tirol, p. 540, pl. 14, figg. 7, 8, 11; W. KULCZYNSKI, Fragmenta i, **n. spp.**
- L. nodifer* E. Sim., p. 343, pl. 5, figg. 22 & 23, *L. notabilis* Kulcz., p. 345, pl. 5, figg. 26 & 27, supp. descript.; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Leucauge unguolata* Karsch, from Belg. Congo, p. 442; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Linyphia interpolis*, Cape Colony (Clanwilliam), p. 161, pl. 12, fig. 3; O. P. CAMBRIDGE, Ann. S. African Mus. iii, p. 5, **n. sp.**

- L. limatula*, Chili (La Herradura), p. 93; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Lophocarenum frontalis*, North Amer., p. 111; BANKS, J. N. York Ent. Soc. June 1904, **n. sp.**
- L. fasciatum*, California (Claremont), p. 347, pl. 39, figg. 20, 21, 24; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Lucrinus n. g.*, p. 162, *L. putus*, Cape Colony (Clanwilliam), p. 162, pl. 12, fig. 4; O. P. CAMBRIDGE, Ann. S. African Mus. iii, pt. 5, **n. sp.**
- Mahadiva reticulata* O. P. Cambr. = *Verrucosa arenata*, p. 482; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.
- Mangora*, def. and key of the Centr.-Amer. spp., p. 477, *M. bimaculata*, p. 479, pl. 45, figg. 10 & 11, *M. picta*, p. 479, pl. 45, figg. 14 & 15, *M. mobilis*, p. 479, pl. 45, figg. 16 & 17, *M. passiva*, p. 480, pl. 45, fig. 19, *M. trilineata*, p. 480, pl. 46, fig. 20; FR. CAMBRIDGE, t. c.
- M. calcarifera*, Mexico, Guatemala, p. 479, pl. 45, figg. 12 & 13, *M. spinula*, Mexico, p. 480, pl. 45, fig. 18; FR. CAMBRIDGE, t. c. **n. spp.**
- Marxia*, def. p. 481, *M. stellata*, p. 481, pl. 45, figg. 21 & 22; FR. CAMBRIDGE, t. c.
- Metazygia n. g.* (type *Epeira wittfeldæ* McCook), def. and key of spp., p. 501, *M. wittfeldæ*, p. 501, pl. 47, figg. 22 & 23, *M. gregalis*, p. 501, pl. 47, figg. 24; FR. CAMBRIDGE, t. c.
- Microthema*, def. and key of the Centr.-Amer. spp., pp. 525 & 526, *M. gracilis*, p. 528, pl. 50, fig. 3, pl. 51, fig. 16, *M. mamillata*, p. 529, pl. 50, fig. 4, *M. longicauda*, p. 530, pl. 50, fig. 5, *M. brevipes*, p. 531, pl. 50, fig. 8, *M. obtusospina*, p. 531, pl. 50, fig. 9, *M. cornigera*, p. 532, pl. 50, fig. 10, *M. vitiosa*, p. 532, pl. 50, fig. 11, *M. parallela*, p. 533, pl. 50, fig. 13, *M. patruelis*, p. 533, pl. 50, figg. 15 & 16, *M. duodecim-spinosa*, p. 535, pl. 51, fig. 18, *M. schreibersi*, p. 536, pl. 51, fig. 19, *M. sagittata*, p. 536, pl. 50, figg. 20 & 21, *M. gladiola*, p. 537, pl. 51, figg. 22, *M. bimucronata*, p. 538, pl. 51, fig. 23, *M. mitrata*, p. 538, *M. reduviana*, p. 539, *M. furcula*, p. 539, pl. 51, fig. 25, *M. fericula*, p. 539; FR. CAMBRIDGE, t. c.
- M. striata*, Guatemala, p. 530, pl. 50, fig. 6, *M. spinulata*, Mexico, p. 530, pl. 50, fig. 7, *M. granulata*, Mexico, p. 532, pl. 50, fig. 12, *M. uncata*, Guatemala, p. 533, pl. 50, fig. 14, *M. triserrata*, Guatemala, p. 534, pl. 50, fig. 17, *M. quadriserrata*, Guatemala, p. 534, pl. 50, fig. 18, *M. serrata*, Panama, Chiriqui, p. 534, pl. 50, fig. 19, *M. inæqualis*, Guatemala, p. 535, pl. 50, fig. 20, *M. subspinosa*, Guatemala, p. 535, pl. 51, fig. 17, *M. catenulata*, Guatemala, p. 538, pl. 51, fig. 24; FR. CAMBRIDGE, t. c. **n. spp.**
- Micryphantes corniger* Blackw., suppl. descrip., p. 337, pl. 5, fig. 18; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Neoscona*, def. and key of the Centr.-Amer. spp., p. 466, *N. oaxacensis*, p. 468, pl. 44, figg. 4 & 5, *N. benjamina*, p. 470, pl. 44, fig. 8, *N. theisi*, p. 470, pl. 44, figg. 9 & 10, *N. arabesca*, p. 472, pl. 44, figg. 13 & 14, *N. cooksoni*, p. 473, pl. 44, fig. 16, *N. volucripes*, p. 473, pl. 14, fig. 18, *N. conifera*, Mexico, Costa Rica, p. 469, pl. 44, figg. 6 & 7, *N. minima*, Mexico, Guatemala, p. 471, pl. 44, figg. 11 & 12, *N. amulensis*, Mexico, p. 472, pl. 44, fig. 15, *N. orizabensis*, Mexico, p. 473, pl. 44, fig. 17; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, **n. spp.**
- Neosconella n. g.*, def. and key of spp., p. 474, *N. solersoides*, p. 475, pl. 45, figg. 3 & 4, *N. lineatipes*, p. 476, pl. 45, figg. 5 & 6, *N. expleta*, p. 476, pl. 45, fig. 7, *N. habilis*, p. 477, pl. 45, fig. 8; FR. CAMBRIDGE, t. c.
- N. styligera*, Guatemala, p. 475, pl. 45, fig. 1, *N. guttata*, p. 477, pl. 45, fig. 9; FR. CAMBRIDGE, t. c. **n. spp.**
- Nephila femoralis* Lucas, *senegalensis* Walck., *pilipes* Lucas, *cruentata* Fabr. from Abyssinia and Congo, p. 442; E. SIMON, Bull. Mus. Paris 1904, pp. 442.
- N. clavipes* Fabr., from Bermuda isl., p. 273; N. BANKS, Tr. Connect. Ac. xi.

- Oedothorax agrestis* Blackw., an abnormal female, p. 328, pl. 5, fig. 8 ; R. DE LESSERT, *Observ. Ar. du bassin du Léman*.
- Paphlagon beatus* Cambr. = *Pronous tuberculifer* Keyserl. p. 541 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran.* ii.
- Parawixia* **n. g.** (type *Epeira destricta* Cambr.), def. and key of spp., p. 487, *P. destricta*, p. 488, pl. 46, fig. 9 & 10, *P. armata*, p. 489, pl. 46, fig. 11, *P. hypocrita*, p. 489, pl. 46, fig. 12, *P. guatemalensis*, p. 489, pl. 46, fig. 14, *P. hoaxa*, p. 490, pl. 46, fig. 15, *P. honesta*, p. 490, pl. 46, fig. 17, *P. rigida*, p. 491, pl. 46, fig. 18 ; FR. CAMBRIDGE, t. c.
- P. hamata*, Costa Rica, p. 489, pl. 46, fig. 3, *P. tredecimnotata*, Guatemala, p. 490, pl. 46, fig. 16 ; FR. CAMBRIDGE, t. c. **n. spp.**
- Pocadicnemis pumilus* Blackw., figured, pl. 1, fig. 5 ; F. P. SMITH, J. Quekett Club 1904, t. ix.
- Poltyx salebrosus*, W. Australia (Fremantle), p. 104, figg. 28 & 29 ; RAINBOW, *Rec. Austral. Mus.* v, p. 2, **n. sp.**
- P. turriger* E. Simon, figured, pl. 16, fig. 6 ; E. SIMON, *Mission Pavie* iii.
- Priperia* **n. g.**, p. 340, *P. bicolor*, Sandwich Isl., p. 340 ; E. SIMON, *Fauna Hawaiiensis* iii, **n. sp.**
- Scoloderus*, key of the Centr.-Amer. spp., p. 521, *S. americanus*, p. 521, pl. 51, fig. 6, *S. nigriceps*, p. 521, pl. 51, fig. 7, *S. tuberculiferus*, p. 521, *S. gibber*, p. 521, pl. 51, fig. 8 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran.* ii.
- Singa lutea* O. P. Cambr. = *S. flava* O. P. Cambr., p. 518 ; FR. CAMBRIDGE, t. c.
- Sphecozone dentimana* E. Sim., new descript., p. 277 ; E. SIMON, *Mission Pavie* iii.
- Tetragnatha nitens* Aud., from Madi and Niam-Niams reg., p. 442 ; E. SIMON, *Bull. Mus. Paris* 1904, No. 7.
- Theridiosoma gemmosum*, eggs cocoon figured, p. 163 ; T. H. SCHEFFER, *Canad. Ent.* xxxvi, No. 6.
- Turckheimia scelestia* Cambr. = *T. diversa* Cambr., p. 496, *T. armata* Cambr. = *Epeira spicata* Cambr., p. 499 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arach.-Aran.* ii.
- Verrucosa*, def. and key of the Centr.-Amer. sp., p. 481, *V. arenata*, p. 482, pl. 45, figg. 23 & 24, *V. undecim-variolata*, p. 483, pl. 45, figg. 25 & 26 ; FR. CAMBRIDGE, t. c.
- Wagneriana* **n. nom.** for *Wagneria* McCook præocc., def. and key of the Centr. Amer. spp., p. 497, *W. tauricornis*, p. 498, pl. 47, figg. 14 & 15, *W. undecimtuberculata*, p. 498, pl. 47, figg. 17 & 18, *W. spicata*, p. 499, pl. 47, figg. 19 & 20, *W. carinata*, Guatemala, p. 498, pl. 47, fig. 16 ; FR. CAMBRIDGE, t. c.
- Walckenaera acuminata* Blackw., figured, pl. 1, figg. 7 & 8 ; F. P. SMITH, J. Quekett Club 1904, t. ix.
- W. inflexa* Westr. (*W. westringi* Strand), note and new descript. ; E. STRAND, *Norske Selskr. Sk.* 1903 (1904), No. 7.
- Wideria antica* Wid., figured, pl. 1, fig. 6 ; F. P. SMITH, J. Quekett Club 1904, t. ix.
- Wixia*, def. and key of the Centr.-Amer. sp., p. 484, *W. gibbifera*, p. 485, pl. 46, fig. 1, *W. bituberosa*, p. 485, *W. clivosa*, p. 485, pl. 46, figg. 2 & 3, *W. rufa*, p. 486, pl. 46, fig. 5, *W. turrigera*, p. 486, pl. 46, fig. 7 ; FR. CAMBRIDGE, *Biol. Centr.-Amer. Arachn.-Aran.* ii.
- W. globosa*, Mexico, p. 486, pl. 46, fig. 5, *W. subrufa*, Guatemala, p. 486, pl. 46, fig. 6, *W. sicala*, Mexico, p. 487, pl. 46, fig. 8 ; id. t. c. **n. spp.**

Mimetidae.

- Ero tuberculata* de Geer and *aphana* Walck., note on, p. 556, pl. 14, fig. 23, *E. ligurica*, Liguria (San Remo), p. 543, pl. 14, fig. 3 ; KULCZYNSKI, *Fragmenta* i, **n. sp.**

- E. nicoleti*, Chili (la Herradura prov. Coquimbo), p. 96 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Mimetus maculosus, New Zealand (Jenolan Caves dist.), p. 330, figg. 40, 41, 42 ; RAINBOW, Rec. Austral. Mus. v, **n. sp.**

Thomisidæ.

- Apollophanes (Cleocnemis) texana*, Texas, p. 113 ; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
Coriarachne nigrostriata E. Sim., new descript., p. 283, E. SIMON, Mission Pavie iii.
Dicaa multimaculata, W. Australia (Perth), p. 106, figg. 30 & 31 ; RAINBOW, Rec. Austral. Mus. v, pt. 2, **n. sp.**
Mecaphesa perkinsi, Sandwich Islands, p. 342 ; E. SIMON, Fauna Hawaiiensis iii, **n. sp.**
Misumessus n. g. (type *Misumena oblonga* Keyserl.), p. 112, *M. pallidulus*, p. 112 ; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
Moneses paradoxus Lucas, from Centr. Abyss., p. 443 ; E. SIMON, Bull. Mus. Paris 1904, No. 7.
Philodromoides n. gen., p. 305, *P. pratariæ*, N. America, p. 305, text-fig. ; T. H. SCHEFFER, Canad. Ent. xxxvi, No. 10, **n. sp.**
Philodromus floridensis, Florida (Lake Worth), p. 133 ; BANKS, P. Ac. Philad., Jan. 1904, **n. sp.**
P. moestus, California (Santa Clara County), p. 353, pl. 39, figg. 26-30 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
Synæma rufithorax, Sandwich Islands, p. 342 ; E. SIMON, Fauna Hawaiiensis iii, **n. sp.**
S. opulentum E. Sim., new descript. and fig., p. 283, pl. 16, fig. 7 ; E. SIMON, Mission Pavie iii.
Thomisus caffer, Zoutpansberg, p. 69 ; E. SIMON, Rev. Suisse Zool. 1904, **n. sp.**
T. albobirtus E. Sim., from Herrer valley, p. 443 ; E. SIMON, Bull. Mus. Paris 1904, No. 7.
Tibellus vossioni E. Sim., from Dagota valley, p. 443 ; E. SIMON, t. c.
Tmarus minutus, Washington, p. 112 ; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
Xysticus texanus, Texas (San Antonio), p. 112 ; BANKS, t. c. **n. sp.**
X. modestus, Kansas, p. 257, pl. 17, fig. 1 ; T. H. SCHEFFER, Ent. News Philad. xv, **n. sp.**

Clubionidæ.

- Agræca lusatica* L. Koch, synonym. and descript., p. 393 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
Anahita unifasciata, Belg. Congo, p. 445 ; E. SIMON, Bull. Mus. Paris 1904, No. 7, **n. sp.**
Anyphæna accentuata var. *obscura* Lebert, descript., p. 390 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
A. verrilli, Bermuda Isl., p. 270, text-fig. ; N. BANKS, Tr. Connect. Ac. xi, **n. sp.**
Aysha orlandensis Tullgren = *Anyphæna gracilis* Hentz, p. 121 ; BANKS, P. Ac. Philad., Jan. 1904.
Clubiona deterrima, Norway, p. 10 ; E. STRAND, Forh. Selsk. Christian. 1904, No. 5, **n. sp.**
C. stagnalis n. nom. for *Cl. grisea* Thorell, Menge, Cambr., E. Simon, p. 557, *C. tridens* Menge = *C. reclusa* Cambr. ; KULCZYNSKI, Fragmenta i.
Cluilius see *Philisca*.

- Corinnomma formiceforme*, near Sydney, p. 335, pl. 46, figg. 10, 11, 12 ; W. J. RAINBOW, Rec. Austral. Mus. v, pt. 5, 1904, **n. sp.**
- Eutichurus insulanus*, Bermudas and Hayti, p. 270 ; N. BANKS, Tr. Connect. Ac. xi, **n. sp.**
- Gayenna californica*, California (Mill Valley, Palo Alto), p. 338, pl. 38, fig. 2 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- G. trimaculata*, Chili, la Herradura prov. Coquimbo, p. 102 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904.
- Heteropoda pressula* E. Simon, new descript., p. 285 ; E. SIMON, Mission Pavie iii.
- H. venatoria* L. (*regia* Fabr.), from Bermuda Islands, p. 274 ; N. BANKS, Tr. Connect. Ac. xi.
- Micaria norvegica*, Norway, p. 13 ; E. STRAND, Forh. Selsk. Christian. 1904, No. 5, **n. sp.**
- Micrommata vittigerum* E. Simon, from Abyssinia (Gofa), p. 443 ; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Edignatha sima* E. Sim., new descript., p. 286 ; E. SIMON, Mission Pavie iii.
- Olbophthalmus* **n. nom.** for *Olbus* E. Simon (Hist. Nat. Ar., nec *Olbus* E. Simon 1880), p. 98 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904.
- Olbus*, note on genus, p. 98 (foot note) ; E. SIMON, t. c.
- Philisca*, note on gen. *Philisca* and *Cluilius*, p. 100, *P. (Cluilius) chilensis* Nic., new descript., p. 100, *P. (Cluilius) accentifera*, la Herradura prov. Coquimbo, p. 101 ; E. SIMON, t. c. **n. sp.**
- Pæcilipta venusta*, near Sydney, p. 333, pl. 46, figg. 7, 8, 9 ; W. J. RAINBOW, Rec. Austral. Mus. v, pt. 5, 1904, **n. sp.**
- Polybetes delfini*, Punta Arenas, p. 99 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Syspira pallida*, New Mexico, p. 111 ; BANKS, J. N. York Ent. Soc., June 1904, **n. sp.**
- Terapis* **n. gen.**, p. 103, *T. bicolor*, Chili, la Herradura prov. Coquimbo, p. 103 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Thargalia floridana* Banks, suppl. descript., p. 124 ; BANKS, P. Ac. Philad., Jan. 1904.
- Torania gloriosa*, suppl. descript. and fig., p. 285, pl. 16, fig. 2 ; E. SIMON, Mission Pavie iii.
- Trachelas californica*, California (Mill Valley, Palo Alto), p. 339, pl. 40, fig. 47 ; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Trachelas*, key to Chilean spp., p. 106, *T. altiformis* Nicolet, new descript., p. 104, *T. longitarsis*, Punta Arenas, p. 104, *T. virgatus*, la Herradura prov. Coquimbo, p. 105, text-fig. ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. spp.**

Agelenidae.

- Cybæus minor*, California (Claremont), p. 341, pl. 38, fig. 4, pl. 40, fig. 44 ; BANKS, P. Calif. Ac. iii, No. 3, **n. sp.**
- Mevianes* **n. gen.**, p. 110, *M. delfini*, Punta Arenas, p. 111, *M. wilsoni*, Allen Gardiner, p. 111 ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. spp.**
- Pacificana* **n. gen.**, p. 65, *P. cockayni*, Bounty isl., p. 66, text-fig. ; H. R. HOGG, Ann. Nat. Hist. (7) xiii, **n. sp.**
- Pionaces* **n. gen.**, p. 107, *P. major*, Punta Arenas, p. 108, text-fig. ; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Porteria* **n. g.**, p. 109, *P. albopunctata*, Punta Arenas, p. 109, text-fig. ; E. SIMON, t. c. **n. sp.**
- Tegenaria urbana* E. Simon, suppl. descript., p. 402, pl. v, fig. 29 ; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- T. domestica* Cl. (*Derhami* Scopl.) from Bermuda Isl., p. 271 ; N. BANKS, Tr. Connect. Ac. xi.

Pisauridæ.

- Pisauridæ*, key to North Amer. genera, p. 313; MONTGOMERY, P. Ac. Philad. March 1904.
- Dolomedes sexpunctatus* Hentz, suppl. descript., p. 654, pl. 29, fig. 5; MONTGOMERY, t. c. Oct. 1903.
- Dolomedes*, key to North Amer. spp., p. 314, *D. sexpunctatus* Hentz, p. 314, pl. 20, fig. 34, *fontanus* Emerton, p. 316, pl. 20, figg. 35-37, *urinator* Hentz (= *tenebrosus* Hentz, Emerton, Stone), p. 317, *idoneus* Montg., suppl. descript. and synon., p. 319; MONTGOMERY, t. c. 1904.
- Euprosthenops bayoanianus* Br. Cap., from Belg. Congo, p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Pisaurina mira* Walckenaer, suppl. descript. and synon., p. 320, MONTGOMERY, P. Ac. Philad. March 1904.

Lycosidæ.

- Lycosidæ*, key to North American genera, p. 264; MONTGOMERY, P. Ac. Philad. March, 1904.
- Allocosa* n. g. (type *Lycosa funerea* Hentz), p. 113; BANKS, J. N. York Ent. Soc. xii, June, 1904.
- A. degesta*, Louisiana, p. 287; CHAMBERLIN, Canad. Ent. 36, n. sp.
- Aulonia humicola* Montg., suppl. descript. p. 265, pl. 20, fig. 33; MONTGOMERY, P. Ac. Philad. March, 1904.
- Geolycosa* n. gen. (type *G. latifrons*), p. 292, key to N. Amer. spp. p. 293, *G. baltimoriana* Keyserl. p. 297, *arenicola* Scudd. (= *L. nidifex* Marx), p. 299, *carolinensis* Walck. p. 299, suppl. descript. and synon., *G. texana*, Texas, p. 293, pl. 18, figg. 13 & 14, *latifrons*, Texas, p. 295, pl. 19, figg. 15-18; MONTGOMERY, t. c. n. spp.
- Lycosa* (*Trochosa*) *personata* L. Koch, p. 416, pl. 6, figg. 37 & 38, *L. renidens* E. Simon, p. 420, pl. 6, fig. 46, suppl. descript.; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- L. terricola* var. *pallida*, Montenegro (Bukovica), p. 3; A. NOSEK, Arachn. Monteneg. n. var.
- L. urbana* Cambr., from Madi-Bari and Niam-Niams reg., p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- L. inominata* E. Simon, new descript. p. 287; E. SIMON, in Mission Pavie iii.
- L. perkinsi*, Sandwich islds., p. 343; E. SIMON, Fauna Hawaiiensis iii, n. sp.
- L. sepulchralis* Montg., p. 645, pl. 19, fig. 1, *charonoides* Montg., p. 646, pl. 19, fig. 7, *nidicola* Emert., p. 647, *avara* Keyserl., p. 650, pl. 19, fig. 2, *pratensis* Emert., p. 651, pl. 19, fig. 8, suppl. descript. and fig., *L. contestata*, Woods Hole, p. 649, pl. 19, fig. 4; MONTGOMERY, P. Ac. Philad. Oct. 1903, n. spp.
- Lycosa*, key to North Amer. spp., p. 277, *L. nigra* Stone, p. 285, *charonoides* Montg., p. 286, *lepida* Keyserl. (= *L. communis* Emert.), p. 287, *punctulata* Hentz, p. 288, *ocreata* Hentz (= *L. stonei* Montg. nec *L. rufa* Keyserl.), p. 288, *scutulata* Hentz, p. 289, *bilineata* Emerton (= *L. ocreata pulchra* Montg.), p. 290, *L. inhonesta* Keyserl. (= *L. nidicola* Emert. and *L. tigrina* McCook), p. 290, *L. relucens* Montg. (= *L. verisimilis* Montg.), p. 292, suppl. descript. and synonyms, *L. enepigynata*, Texas, p. 279, pl. 18, figg. 1 & 2, *insopita*, Texas, p. 280, pl. 18, figg. 3 & 4, *antelucana*, Texas, p. 282, pl. 18, figg. 5 & 6, *McCooki*, Texas, p. 283, pl. 18, fig. 11; MONTGOMERY, P. Ac. Philad. March, 1904, n. spp.
- L. wacondana*, Kansas, p. 260, pl. 17, fig. 7; T. H. SCHEFFER, Ent. News Philad. xv, n. sp.

- L. nidicola* = *L. helluo* Walck., *L. kochi* Emert. and Banks (non Keyserling) = *L. pulchra* Keyserl., *L. purcelli* Montgomery = *L. kochi* Keyserl., synonyms, *L. permunda*, Kansas, p. 286; R. V. CHAMBERLIN, Canad. Ent. 36, **n. sp.**
- L. angusta* Tullgren = *L. lenta* Hentz, *L. albopuncta* Tullgren = *L. riparia* Hentz, *L. (Pirata) loennbergi* Tullgren = *Sosippus floridanus* E. Simon, p. 121; BANKS, P. Ac. Philad. Jan. 1904.
- L. scutata* Hentz = *L. rabida* Walckenaer, *L. babingtoni* Blackwall = *L. helluo* Walckenaer, synonyms, p. 134, *L. posticata*, Florida, p. 134, *L. hentzi*, Florida, p. 135; BANKS, t. c. Jan. 1904, **n. spp.**
- L. baltimoriana* Keyserl. and *L. lenta* Hentz, note on, p. 114, *L. apicata*, Arizona and Texas, p. 114; N. BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
- L. pacifica*, California, p. 354, pl. 38, fig. 6; N. BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. sp.**
- L. atlantica* Marx, from Bermuda Isl., p. 274; N. BANKS, Tr. Connect. Ac. xi.
- L. porteri*, Chili (Los Perales), p. 112, *L. delfini*, Chili (Los Perales), p. 113; E. SIMON, Ann. Soc. ent. Belgique xlvi, 1904, **n. spp.**
- Ocyale atalanta* Aud., from Abyssinia (Mt. Fické), p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Pardosa (Lycosa) danica*, Denmark, p. 321; W. SORESENSEN, Ent. Meddel. 1904 (2), heft 1, **n. sp.**
- P. pedestris* E. Simon, supp. descript., p. 427, pl. 6, fig. 34, *P. schenkeli*, Valais (Arolla), p. 429, pl. 6, figg. 42-44; R. DE LESSERT, Observ. Ar. du bassin du Léman, **n. sp.**
- P. irretita* E. Simon, new descript., p. 288; E. SIMON, in Mission Pavie iii.
- P. lapidicina* Emerton, p. 262, pl. 19, fig. 6, and *P. pallida* Emerton, p. 653, pl. 19, fig. 3, supp. descript.; MONTGOMERY, P. Ac. Philad., Oct. 1903.
- Pardosa*, key to N. Amer. spp., p. 267, *P. pallida* Emert. p. 271, *lapidicina* Emert. p. 272, *scita* Montg. p. 272, *minima* Keyserl. p. 273, *glacialis* Thorell, p. 274, *groenlandica* Thorell, p. 274, *tachypoda* Thorell, p. 275, *nigripalpis* Emert., p. 275, supp. descript., *P. pauxilla*, Texas, p. 268, pl. 19, figg. 21-23, *P. mercurialis*, Texas, p. 270, pl. 19, figg. 20 & 21; MONTGOMERY, P. Ac. Philad. March, 1904.
- P. bilobata* Tullgren = (probably) *Pirata insularis* Emert. p. 148, *P. emertoni* **n. nom.** for *P. pallida* Emert., præocc., p. 175, *P. banksi* **n. nom.** for *P. littoralis* Banks, præocc., p. 175; R. V. CHAMBERLIN, Canad. Ent. xxxix.
- P. bilobata* Tullgren = *Lycosa milvina* Hentz, p. 121, *P. floridana*, Florida (Entreprise), p. 136; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- P. parvula*, Florida, p. 114, *texana*, Texas, p. 115; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. spp.**
- P. atromedia*, California, p. 355, pl. 39, fig. 32; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. sp.**
- Pirata liber* Montg., supp. descript., p. 654; MONTGOMERY, P. Ac. Philad. Oct. 1903.
- Pirata*, key to N. Amer. spp., p. 309, *P. marxi* Stone (= *P. piraticus* Emerton nec Clerk), p. 309, *elegans* Stone, *nigromaculatus* Montg., p. 310, *liber* Montg., p. 311, supp. descript. and syn., *P. sedentarius*, Texas, p. 312, pl. 19, figg. 28 & 29; MONTGOMERY, P. Ac. Philad. March, 1904, **n. sp.**
- P. vacourana* Scheffer = *P. agilis*, p. 148; R. V. CHAMBERLIN, Canad. Ent. xxxvi.
- P. aspirans*, Virginia and N. Carolina, p. 286; R. V. CHAMBERLIN, t. c. **n. sp.**

- P. californica*, California (Coulterville), p. 356, pl. 39, fig. 13; BANKS, P. Calif. Ac. 3, No. 13, **n. sp.**
- Scaptocosa* **n. gen.** type *Lycosa arenicola* Scudder, p. 113; BANKS, J. N. York Ent. Soc. xii, June, 1904.
- Schizocosa* **n. gen.** type *Lycosa ocreata* Hentz, p. 177, incl. also *L. venustata* Hentz (= *Pardosa bilineata* Emert. and *Lycosa ocreata pulchra* Montg.), and *L. humuli* Banks; R. V. CHAMBERLIN, Canad. Ent. 36 (p. 148).
- Trochosa singoriensis*, distribution in Hungary; CSIKI, pp. 290-294 & 303, Allatt. Kozl. Magyar Tars. iii.
- Trochosa*, key to N. Amer. spp., p. 301, *T. pratensis* Emert., p. 303, *contestata* Montg., p. 303, *avara* Keyserl., p. 304, *purcelli* Montg. (= *Lycosa kochi* Emert. nec Keyserling + *L. nigraurata* Montg.), *cinerea* Fabr., p. 305, *frondicola* Emert., p. 306, *sepulchralis* Montg., p. 307, *rubicundula* Keyserl. (= *polita* Emert.), p. 307, *sublata* Montg., p. 308, supp. descript. and synonyms, *T. noctambula*, Texas, p. 301, pl. 38, figg. 9 & 10; MONTGOMERY, P. Ac. Philad. March, 1904, **n. sp.**
- Trabæa aurantiaca* Emert., supp. descript., p. 266, pl. 20, figg. 31 & 32, MONTGOMERY, t. c.

Oxyopidæ.

- Peucetia arabica* E. Sim., from Abyssinia (Dagota) and *P. casseli* E. Sim., from Congo (Iribou), p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Oxyopodon rufocaligatum* E. Sim., from Ogaden, p. 443; E. SIMON, t. c.
- Oxyopes dubourgi*, Madi-Bari and Niam-Niams reg., p. 446; E. SIMON, t. c. **n. sp.**
- O. laminatus* Tullgren = *O. scalaris* Hentz, p. 121; BANKS, P. Ac. Philad. Jan. 1904.
- O. salticus* Hentz, from Bermuda Isl., p. 274; N. BANKS, Tr. Connect. Ac. xi.

Salticidæ.

- Anoka (Wala) vernalis* Peckh., from Bermuda Isl. p. 274; N. BANKS, Tr. Connect. Ac. xi.
- Attulus histrio* E. Simon, supp. descript. and fig., p. 437, pl. 6, figg. 47 & 48; R. DE LESSERT, Observ. Ar. du bassin du Léman.
- Dendryphantès gallicus* **n. nom.** for *D. medius* C. Koch and *D. rudis* E. Simon; W. SORENSSEN, Ent. Meddel. 1904 (2), heft. 1.
- D. floridanus*, Florida (Altoona), p. 138; BANKS, P. Ac. Philad. Jan. 1904. **n. sp.**
- D. guttatus*, California (Santa Rosa Isl.), p. 358, pl. 41, fig. 51; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. sp.**
- Epiblemum palpalis* (sic), California (Palo Alto), p. 360, pl. 39, fig. 31; BANKS, t. c. **n. sp.**
- Eremattus* **n. gen.** type *Marpissa albopilosa* Banks, p. 117; BANKS, J. N. York Ent. Soc. June 1904.
- Evophrys lætata*, Chili (Los Perales) p. 114; E. SIMON, Ann. Soc. ent. Belgique xlviii, 1904, **n. sp.**
- Heliophanus dubourgi*, Dougon Valley, p. 446, figg. 1 & 2 (p. 445), *H. didieri*, Madi-Bari and Niam-Niams reg., p. 447, figg. 3 & 4 (p. 446); E. SIMON, Bull. Mus. Paris 1904, No. 7, **n. spp.**
- Icius floridanus* Banks = *Icius wickhami* Peckham, p. 138; BANKS, P. Ac. Philad. Jan. 1904.
- I. texanus*, Texas, p. 116; BANKS, J. N. York Ent. Soc. xiii, June 1904, **n. sp.**

- Menemerus (Tapinattus) melanognathus* Lucas, from Bermuda Isl., p. 275; N. BANKS, Tr. Connect. Ac. xi.
- Metacymba similis*, California (Los Angeles), p. 360, pl. 38, fig. 9; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. sp.**
- Myrmarachne manducator* Westw., pl. xvi, fig. 8, *M. paviei* E. Sim., new descript. p. 290; E. SIMON, Mission Pavie iii.
- Partona africana*, Centr. Abyss., p. 447; E. SIMON, Bull. Mus. Paris 1904, No. 7, **n. sp.**
- Pellenes pacifica*, California (S. Francisco), p. 359, pl. 39, fig. 37, *P. speciosa*, California (Claremont), p. 359, pl. 40, fig. 39; BANKS, P. Calif. Ac. 3, No. 13, 1904, **n. spp.**
- P. calcaratus*, N. America, p. 117, *P. californicum* (sic), California (San Diego), p. 117, *P. arizonensis*, Arizona, p. 118, *P. tarsalis*, California (San Pedro), p. 118; BANKS, J. N. York Ent. Soc. xii, June, 1904, **n. spp.**
- P. cristatus*, change of marking in the male, p. 32; EMERTON, Psyche xi, 1904.
- Phidippus ferrugineus*, Kansas, p. 258, pl. 17, figg. 2 & 3; T. H. SCHEFFER, Ent. News Philad. 15, **n. sp.**
- Ph. clarconensis* Tullgren = *insolens* Hentz, p. 121, *P. oaklandensis* Tullgren = *cardinalis* Hentz, p. 121; BANKS, P. Ac. Philad. Jan. 1904.
- P. basalis*, Arizona, p. 115; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. sp.**
- Plexippus paykulli* Aud. from Bermuda Island, p. 275; BANKS Tr. Connect. Ac. xi.
- Saitis barbipes* E. Simon, p. 545, p. 14, figg. 15 & 16, new descript. and fig., *S. græca*, Græcia (Patras and Corfu), p. 545, pl. 14, fig. 17, *S. taurica*, S. Russia, p. 546, pl. 14, fig. 18; W. KULCZYNSKI, Fragmenta i, **n. spp.**
- Sidusa arizonensis*, Arizona, p. 116, *S. borealis*, New York, p. 116; BANKS, J. N. York Ent. Soc. xii, June 1904, **n. spp.**
- Thyene squamata* E. Sim. and *T. bucculenta* Gerst. from Centr. Abyss., p. 443; E. SIMON, Bull. Mus. Paris 1904, No. 7.
- Viciria scoparia* E. Sim., new descript., p. 291; E. SIMON, Mission Pavie iii.

V. SOLIFUGÆ.

- Dæsia*, key to Asiat. spp., p. 410, *D. rossica*, transcasp. Reg., p. 406, *D. zarudnyi*, S. Persia, p. 408, *D. persica*, S. Persia, p. 409, *D. dmitrievi*, Abyssinia, p. 410, *D. magnifrons*, N. E. Africa, p. 411; A. BIRULA, Annuaire Mus. St. Petersb. ix, 1904, **n. spp.**
- Galeodidae*, classif. of family, p. 391, key to genera, p. 393; BIRULA, t. c.
- Galeodes*, key to Centr.-Asia spp., p. 402, *G. bacillifer* Pocock, n. descript. p. 395, *G. schach*, Teheran, p. 394, *G. caspius przewalskii*, Chinese Turkest., p. 396, *G. bacillatus*, W. Persia, p. 397, *G. setipes*, Centr. As. (Margelhan), p. 398, *G. auronitens*, W. Persia, p. 399, *G. lævipalpis*, Ferghanathal, p. 400; BIRULA, t. c. **n. spp.** and **n. subsp.**
- Galeodopsis* **n. gen.** (near *Paragaleodes*), typ. *Galeodes cyrus* Pocock, p. viii; BIRULA, t. c. Nouv. No. 12.
- Gluiopsis rufescens persica*, S.W. Persia, p. 412, *nigrocincta*, W. Persia, p. 413; BIRULA, t. c. **n. subsp.** and **n. sp.**
- Paragaleodes fulvipes*, S. Persia, p. 400, *P. melanopygus*, N. Persia, p. 401; BIRULA, t. c. **n. spp.**
- Rhagodes aureus* Pocock, new descript. p. 414, *R. aureus setipes*, W. Persia, p. 415, *R. leucopygus*, W. Persia, p. 415; BIRULA, t. c. **n. subsp.** and **n. sp.**

VI. CHERNETES (Pseudoscorpiones).

- Atemnus floridanus* Tullgren = *A. elongatus* Banks, p. 141; BANKS, P. Ac. Philad. Jan. 1904.

- Chelifer cimicoides* Fabr., p. 6, *C. cyrneus* L. Koch, p. 8, *C. cancrooides* L., p. 11, synonym and descript.; ELLINGSEN, Norske Pseudosc. ii, 1903.
C. cancrooides L. from Abyssinia, p. 444; E. SIMON, Bull. Mus. Paris 1904, No. 7.
C. michaelsoni E. Simon, note on p. 4, *C. echinatus*, S. Patag. p. 2; ELLINGSEN, Boll. Mus. Torino xix, No. 480, **n. sp.**
Chernes nodosus, note on, p. 292; KEW WALLIS, Naturalist 1904.
Garypinus patagonicus, Patag. (Rio Sta Cruz), p. 5; ELLINGSEN, Boll. Mus. Torino xix, No. 480, **n. sp.**
Ideobisium, list and observ., p. 4, *I. strandi* Ell., supp. descript., p. 12; ELLINGSEN, Norske Pseudosc. ii, 1903.
Obisium muscorum Leach, note on, p. 13, *O. brevifemoratum*, Norway, p. 13; ELLINGSEN, t. c. **n. sp.**

VII. OPILIONES.

The Order *Opiliones* particularly the suborder *Cyphophthalmi*; general structure of Opiliones with special regard to *Cyphophthalmi* pp. 4-67. Systematic part pp. 75-110; H. J. HANSEN and W. SORESENSEN, On two orders of Arachnida.

Opiliones, synopsis of order, groups and families of Central American fauna; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii, p. 548.

Op. cyphophthalmi.

Cyphophthalmi (suborder), characterization of suborder, p. 86, family *Sironoidæ*, p. 87, subfam. *Stylocellini* consp. gen. p. 88, gen. *Stylocellus* Westw. and consp. spp., p. 88 & 89, *S. beccarii* Th. p. 90, pl. i, fig. 1, *S. thorelli* **n. sp.**, Sumatra, p. 91, pl. i, fig. 2, *S. weberi* **n. sp.**, Sumatra, p. 92, pl. ii, fig. 1, *S. modestus* **n. sp.**, Celebes, p. 93, pl. ii, fig. 2, *S. sulcatus*, Java, p. 94, pl. ii, fig. 3, *S. sumatranus* Westw. p. 96, pl. ii, fig. 4, *S. pococki* **n. sp.**, Borneo, p. 97, pl. ii, fig. 5, gen. *Miopsalis* Thorell, p. 99, *Ogovia* **n. gen.**, p. 99, *O. grossa* **n. sp.**, Ogoué, p. 100, pl. ii, fig. 6, pl. iii, fig. 1, gen. *Pettalus* Thorell, p. 102, *P. cimiciformis* Cambr. p. 102, pl. iii, fig. 2, *P. brevicauda* Pocock, p. 104, pl. iii, fig. 3, *Purcellia* **n. gen.**, p. 105, *P. illustrans* **n. sp.**, p. 106, pl. iii, fig. 4, pl. iv, fig. 1, gen *Siro* Latr., p. 107, *S. rubens* Latr., p. 108, pl. iv, fig. 2, *S. duricorius* Joseph, p. 109, pl. iv, fig. 3, pl. v, fig. 1, *Parasiro* **n. gen.**, p. 110 (typ. *Siro corsicus* E. Sim.), *P. corsicus* E. Simon, p. 111, pl. v, fig. 2; *Gibocellum sudeticum* Stecker, species non existens, pp. 67-75; H. J. HANSEN & W. SORESENSEN, On two orders of Arachnida etc. Cambridge, 1904.

Op. mecostethi.

Cosmetidæ (fam.), divided into two subfamilies: *Discosominæ* **nov.** et *Cosmetinæ* **nov.**, p. 549; FR. CAMBRIDGE, Biol. Centr.-Amer. Arach.-Aran. ii.

Cosmetinæ subfam., key to genera of Centr.-Amer. fauna; id. t. c. p. 550.

Cynorta, def. and key to Centr.-Am. spp., pp. 554 & 555, *C. albipunctata*, Costa Rica, p. 556, pl. 52, fig. 9, *C. bipunctata*, Costa Rica, p. 556, pl. 52, fig. 10, *C. biguttata*, Costa Rica, p. 557, pl. 52, fig. 11, *C. bituberculata*, Guatemala, p. 557, pl. 52, fig. 12, *C. longipes*, Costa Rica, p. 557, pl. 52, fig. 13, *C. longispina*, Costa Rica, p. 558, pl. 52, fig. 14, *C. dentipes*, Guatem., Costa Rica, p. 558, pl. 52, fig. 15, *C. annulipes*, Guatemala, p. 558, pl. 52, fig. 16, *C. conigera*, Costa Rica, p. 559, pl. 52, fig. 17; FR. CAMBRIDGE, t. c. **n. spp.**

- Erginoides* n. g. (*Cosmetidæ*) p. 553, *E. tarsalis*, Costa Rica, p. 554, pl. 52, fig. 7; FR. CAMBRIDGE, t. c. n. sp.
- Erginus* E. Sim., def. and key to Centr.-Amer. spp., p. 559; FR. CAMBRIDGE, t. c.
- Metacynorta* n. g. (*Cosmetidæ*) p. 554, *M. gracilipes*, Guatemala, p. 554, pl. 52, fig. 8; FR. CAMBRIDGE, t. c. n. sp.
- Metavonones*, n. gen. (*Cosmetidæ*) p. 553, *M. hispidus*, Mexico, p. 553, pl. 52, fig. 6; FR. CAMBRIDGE, t. c. n. sp.
- Paravonones* n. g. (*Cosmetidæ*), *P. biserratus*, Mexico, p. 551, pl. 52, fig. 1, *P. quadratus*, Mexico, p. 551, pl. 52, fig. 2, *P. claviger*, Mexico, p. 552, pl. 52, fig. 3, *P. compressus*, Guatem., Costa Rica, p. 552, pl. 52, fig. 4, *P. incrassatus*, Mexico, p. 553, pl. 52, fig. 5; FR. CAMBRIDGE, t. c. n. spp.
- Sitalces californica* (sic) Banks, pl. 38, fig. 18; BANKS, P. Calif. Ac. iii, No. 13, 1904.
- Systemocentrus quinquedentatus* E. Simon, new descript., p. 295; E. SIMON, Mission Pavie iii.

Op. plagiostethi.

- Acantholophus horridus* Panz. = *A. hispidus* Herbst juv., p. 80, *A. annulipes* L. Koch = *A. dentiger* C. Koch juv., p. 80, *A. kochi* n. nom. for *A. hispidus* E. Simon (non *Phal. hispidum* Herbst), p. 80 (foot-note); W. KULCZYNSKI, Ann. Mus. Hungar. ii, 1904.
- Amopaum* Sor. = *Dicranolasma* juv., p. 77; W. KULCZYNSKI, t. c. 1904.
- Astrobus argentatus* L. Koch = *A. helleri* Auss. juv., p. 79; KULCZYNSKI, t. c. 1904.
- Caddo glaucopsis*, N. York, p. 254, fig. 4, *C. boopis*, N. York, p. 255; C. R. CROSBY, J. N. York Ent. Soc. xii, No. 4, n. spp.
- Dendrolasma mirabilis* Banks, pl. 38, fig. 17; BANKS, P. Calif. Ac. iii, No. 13, 1904.
- Dicranolasma scabrum* Herbst, age characters, p. 77, pl. 9, figg. 1 & 2; W. KULCZYNSKI, Ann. Mus. Hungar. ii, 1904.
- Egæus ictericus* C. Koch = *E. tibialis* C. Koch juv., p. 80, *E. clairi* E. Sim. = *E. sinister* E. Sim. juv., p. 80; KULCZYNSKI, t. c.
- Gagrella*, sexual and age characters, p. 82, pl. 9, figg. 9, 10 & 11; KULCZYNSKI, t. c.
- Ischyropsalis manicata* L. K., age characters, p. 78, pl. 9, figg. 5 & 6; KULCZYNSKI, t. c.
- Liobunum agile* Canestr = *L. doræ* Can. juv., p. 79; KULCZYNSKI, t. c.
- L. calcar* Wood, note on, p. 256; C. R. CROSBY, J. N. York Ent. Soc. xii, No. 4.
- Metopoctea* E. Sim. = *Trogulus* juv.; KULCZYNSKI, Ann. Mus. Hungar. ii, 1904, p. 77.
- Nemastoma bicuspidatum* C. Koch, age characters, p. 78, pl. 9, figg. 7 & 8; KULCZYNSKI, t. c.
- N. gigas* Sör. var. *montenegrina*, p. 4; A. NOSEK, Arachn. Montenegrina, n. var.
- Oligolophus cinerascens* C. Koch and *O. rhododendri* L. Koch = *O. alpinus* Herbst juv., p. 80; KULCZYNSKI, Ann. Mus. Hungar. ii, 1904.
- Ortholasma rugosa* (sic) Banks, pl. 38, fig. 16; BANKS, P. Calif. Ac. iii, No. 13, 1904.
- Phalangium brevicorne* C. K. = *P. opilio* L. juv., p. 79, *P. werneri* n. nom. for *Platybunus strigosus* Kulczynski (Ar. in As. Min. etc. nec *P. strigosus* L. Koch), p. 82 (foot-note), pl. 9, fig. 14; W. KULCZYNSKI, Ann. Mus. Hungar. ii, 1904.
- Platybunus triangularis* Herbst = *P. corniger* Herm. juv., p. 80, *P. bucephalus* C. Koch, age characters, p. 84, pl. 9, figg. 3 & 4; KULCZYNSKI, t. c.

- Protothophus tuberculatus* Banks, pl. 38, fig. 19 ; BANKS, P. Calif. Ac. iii, No. 13, 1904.
- Sclerosoma romanum* L. Koch = *S. quadridentatum* Cuv. juv., p. 73 ; W. KULCZYNSKI, Ann. Mus. Hungar. ii, 1904.

VIII. RICINULI.

Ricinuli (family *Cryptostemmatidae*), general structure of this order, pp. 115-134, systematic position, pp. 136-143, characterization of order and family, p. 144, key to genera, p. 145, gen. *Cryptostemma* Guérin, def. and key to spp., p. 146, *C. crassipalpe* n. sp., Centr. Afr., p. 147, pl. 7, fig. 1, *C. plebejum* n. sp., Centr. Afr., p. 148, pl. 7, fig. 2, *C. westermanni* Guérin, p. 149, pl. 7, fig. 3, pl. 8, fig. 1, *C. afzeli* Thorell, p. 150, pl. 8, fig. 2, *C. sjöstedti* n. sp., Centr. Afr., p. 151, pl. 8, fig. 3, *C. karschi* n. sp., Centr. Afr., p. 153, pl. 8, fig. 4, pl. 9, fig. 1, gen. *Cryptocellus* Westw., p. 154, *C. fœdus* Westw., p. 155, pl. 9, fig. 2, *C. simoni* n. sp., Brazil, p. 156, pl. 9, fig. 3 ; H. J. HANSEN & W. SÖRENSEN, On two orders of Arachnida etc., Cambridge, 1904.

IX. ACARI.

Morphology and classification of *Acari* ; BANKS, A treatise of the Acarina or mites, P. U. S. Mus. xxvii, pp. 1-114.

Acaropediculoides ventricosus, note on, p. 16 ; L. DE LA BARREDA, Com. parasit. Agr. Mexico 1904.

Acaropsis, Moquin-Tandon (typus *Tyroglyphus laboulbeni*), note on, p. 154 ; OUDEMANS, Ent. Ber. Nederland. No. 17.

A. eruditus Oudm., note on, p. 163 ; OUDEMANS, t. c. No. 18.

Acarus denticulatus L., synonymy. note, p. 505 ; TRÄGARDH, Zool. Anz. xxvii.

A. serotinae, New York, p. 124 ; BEUTENMULLER, Amer. Mus. J. iv, (?) n. sp.

Acheles n. gen. (*Cheletinae*) p. 101, *A. mirabilis* Nederl., p. 101 ; OUDEMANS, Ent. Ber. Nederland. No. 14, n. sp.

Actineda agilis Banks, from Bermuda Island, p. 275 ; N. BANKS, Tr. Connect. Ac. xi.

Aleurobius farinae L., note on, p. 102 ; OUDEMANS, t. c.

Allothrombium n. gen. (typus *Acarus tinctorius* L.), p. 251, *A. pergrande*, Italy, p. 252 ; A. BERLESE, Redia i, fasc. ii, n. sp.

Ameroseius n. gen. (type *Seius echinatus* Koch), p. 258, *A. lœlaptoides*, Italy, p. 259, *borealis*, Norvegia, p. 259 ; A. BERLESE, t. c. n. spp.

Analgesidae, key to genera, p. 87 ; BANKS, A treatise on the Acarina.

Angelia thori, Norvegia, p. 275, *A. mamillaris*, Italia, p. 275 ; A. BERLESE, Redia i, fasc. ii, n. spp.

Anætus sumatrensis, Sumatra, on *Sphaeridium dimidiatum*, p. 103, *A. discrepans*, Bremen, on *Halictus 4-notatus*, p. 103 ; OUDEMANS, Ent. Ber. Nederland. No. 14, n. spp.

A. discrepans Oudem., p. 132, pl. 9, figg. 61-64, *A. sumatrensis* Oudem., p. 134, pl. 9, figg. 65 & 66, n. descript. and fig. ; OUDEMANS, Tijdschr. Ent. 1904.

Antennophoridae, key to genera, p. 387, *Antennophorus*, charact. and key to spp., pp. 387-390, text-figg., *A. uhlmanni*, p. 391, *A. grandis*, Russia, p. 392, pl. 12, fig. 95, pl. 13, fig. 95, pl. 14, fig. 99 and text-figg. (n. sp.), *A. pubescens*, p. 393, pl. 13, fig. 98, pl. 14, figg. 101 & 102 and text-fig., *A. foreli*, p. 395, pl. 13, figg. 96 & 97 ; A. BERLESE, Redia i, fasc. ii, n. sp.

- Antennocelæno* **n. subg.** of genus *Celænopsis*, type *C. braunsi* Wasmann ; A. BERLESE, t. c. p. 268.
- Antennurella* **n. gen.** (*Antennophoridae*) p. 267, type *A. trouessarti*, Brasilia, on *Passalus*, p. 268 ; A. BERLESE, t. c. **n. sp.**
- Argas andresi*, Italy, p. 704 ; MARIANI MARIO, Zool. Anz. xxvii, **n. sp.**
- A. mombata*, characters, synonymy &c. ; CHRISTY & POCKOCK, Thompson Yates Lab. Rep. v, pp. 187-189, pl. xv.
- Arrhenurus longiusculus*, England, p. 150 ; C. F. GEORGE, Naturalist 1904, **n. sp.**
- A. anodosus*, Seeland, p. 444 ; KOENIKE, Zool. Anz. xxvii, **n. sp.**
- A. moebeli* Piersig, note on, p. 201, pl. 10, fig. 3 ; J. H. HALBERT, Irish Natural. xiii.
- A. neumani* Piersig, note on, p. 245 ; R. MONTI, Rend. Ist. Lombardo, Ser. ii, xxxvii.
- Atractides octoporus*, Bohème, p. 453 ; R. PIERSIG, Zool. Anz. xxvii, **n. sp.**
- Aturus spatulifer*, Bohème, p. 471 ; R. PIERSIG, t. c. **n. sp.**
- Bdellidae*, key to genera, p. 16 ; BANKS, A treatise on the Acarina.
- B.*, synon. notes, pp. 69-79 ; THOR, SIG., Zool. Anz. xxviii.
- Bdella californica*, California (Claremont), p. 366, pl. 41, fig. 60 ; BANKS, P. Calif. Ac. iii, No. 13.
- Brachypodopsis* **n. gen.** p. 34, *B. gracilis*, Germany, p. 34 ; R. PIERSIG, Ber. Annaberg Ver. 1903, **n. sp.**
- Cephaluropoda* **n. gen.** for *Uropoda berlesiana* Berl. + *U. carinata* et *cribraria*, p. 248 ; A. BERLESE, Redia i, fasc. ii.
- Chelenotus* Trouessart, note on, p. 163 ; OUDEMANS, Ent. Ber. Nederland. No. 18.
- Cheletes eruditus* (Schrank), note on, p. 101 ; OUDEMANS, t. c. No. 14.
- Cheletes* Latreille (type *Acarus eruditus*), note on, p. 154, *C. saccardianus* Berl. 1886 = *C. ornatus* Can. et Fans. 1877, p. 154, *C. berlesi* **n. nom.** for *C. ornatus* Berlese (non Canestrini), p. 154 ; OUDEMANS, t. c. No. 17.
- C. sœvus* **n. nom.** for *C. eruditus* protonympha Oudem., p. 160, *C. stenurus* **n. nom.** for *C. eruditus*, femina monstrosa, Oudem., p. 160, *C. schneideri* Oud., note on, p. 160, *C. ferox* Berl. and Trouessart, on *Cercopis bercklegi*, p. 162, *C. trouessarti* Oud., note on, p. 162, *C. prumptus*, N. Guinea, p. 160, *C. fortis*, N. Guinea, p. 160, *C. audax*, N. Guinea, p. 162, *C. alacer*, Colombia, p. 162, *C. acer*, Colombia, p. 162 ; OUDEMANS, t. c. No. 18, **n. spp.**
- Cheletia* Haller, typ. *C. laureata* Haller = *Acarus squamosus* de Geer, note on, p. 154, *C. flabellifera* Michel, note on, p. 162 ; OUDEMANS, t. c. Nos. 17 & 18.
- Cheletoides* **n. gen.** type *Syringophilus uncinatus* Haller, p. 154 ; OUDEMANS, t. c. No. 17.
- Cheletomimus* **n. gen.** p. 163, type *C. trux*, p. 163 ; OUDEMANS, t. c. No. 18, **n. sp.**
- Cheletomorpha* **n. gen.** for *Cheletes venustissimus* C. Koch, p. 162 ; OUDEMANS, t. c. No. 18.
- Cheletophanes* **n. gen.** for *Cheletes montandoni* Berl., p. 162, *C. montandoni* on *Aradus varius* in Valachia, p. 162 ; OUDEMANS, t. c. No. 18.
- Cheletopsis*, **n. gen.** type *Cheletes norneri* Popp. p. 163, *C. major* Trouessart on *Dendrochelidon mystacea* of N. Guinea, p. 163 ; OUDEMANS, t. c. No. 18.
- Cheyletidæ*, key to genera, p. 19 ; BANKS, A treatise on the Acarina.
- Chirithoptes* (corrig. *Crithocoptes*) *monounguiculolus* Geber, note on, p. 163 ; OUDEMANS, Ent. Ber. Nederland. No. 18.
- Chromotydeus* **n. gen.** (type *Penthaleus ovatus* Koch) ; A. BERLESE, Redia i, fasc. ii, p. 252.
- Cillibano* Heyden, gen. characters, key to subgen. and species, p. 329,

- C. comata* Leon, p. 330, pl. 7, fig. 3, *C. hirticoma* Berl., p. 331, pl. 7, fig. 6; A. BERLESE, t. c.
- Cosmolaelaps* **n. subgen.** of *Laelaps*, pp. 13 & 14, *C. sculpiger* Berl., new descript., p. 19; A. BERLESE, Zool. Anz. 1904.
- Cyrtolaelaps nemorensis* K., synon. note, p. 276, *C. herculeanus*, p. 240, *C. aurantiacus*, p. 241, *C. (vel Gamasellus) iphidiformis*, p. 261, *C. punctum*, Italy, p. 262; A. BERLESE, Redia i, fasc. ii, **n. spp.**
- Dameosoma corrugatum*, p. 273, *bellum*, p. 274, *asperatum*, p. 274, Italia; A. BERLESE, t. c. **n. spp.**
- Demodex musculi* Oud., parast. on rats, p. 324; G. TIRABOSCHI, Arch. parasit. 1904.
- Dinychus tetraphyllus*, p. 247, *D. carinatus*, p. 247, *D. fimicolus*, p. 248, Italia; A. BERLESE, Redia i, fasc. ii.
- Discopoma hirticoma*, Texas, in nets of *Eciton schmitti*, p. 246, *D. pulcherrima*, Italy, p. 247, *D. splendida* Kram. var. *porticensis*, Italy, p. 247; A. BERLESE, t. c. **n. sp.** and **n. subsp.**
- D.*, p. 332, *splendida* Kram., p. 333, pl. 7, fig. 11; A. BERLESE, t. c.
- Disparipes silvestrii*, Italy, p. 22, *silvestrii* var. *rotundata*, p. 23, *circularis*, Italy, p. 23; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Echinomegistus* **n. gen.** (typus *Antennophorus wheeleri* Wasm.), p. 266; A. BERLESE, Redia i, fasc. ii.
- Echinomegistus*, charact., p. 396, text-fig., *E. wheeleri*, p. 398, pls. 13, fig. 103, 14, figg. 103 & 104; A. BERLESE, t. c.
- Echinoseius* **n. gen.** (type *Seius hirsutigenus* Berl.) p. 177; RIBAYA COSTANTINO, Riv. Patol. Veg. x.
- Emeus inexpectatus*, Borkum isl., p. 91, *E. major*, Holl., p. 100; OUDEMANS, Ent. Ber. Nederland. Nos. 13 & 14.
- Epitrimerus anthrisci*, on *Anthriscus silvestris*, p. 16; LINDROTH, Acta Soc. Faun. Fenn. xxvi, No. 4, **n. sp.**
- Eremes confervæ* Schrank, note on, p. 102; OUDEMANS, Ent. Ber. Nederland. No. 14, id. p. 125, pl. 7, figg. 46 & 47, id. Tijdschr. Ent. 1904.
- E. floridanus*, Florida, p. 145; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- E. varius* **n. nom.**, p. 656; VOIGTS & OUDEMANS, Zool. Anz. 1904.
- Eriophyidae*, key to genera, p. 104; BANKS, a treatise on the Acarina.
- Eriophyes linderæ*, India (Kursong), p. 427, fig.; A. CORTI, Zool. Anz. xxvii
- E. gossypii*, California, p. 55, pl. 2, fig. 4; BANKS, J. N. York Ent. Soc. xii, **n. sp.**
- E. dispar*, morphology of, p. 60; KÜSTER, Marcellia iii, fig. 3.
- Eriophyes campanulæ*, on *Campanula rotundifolia*, p. 4, fig., *E. dianti*, on *Dianthus deltoides*, p. 12, *E. leontodontis*, on *Leontodon autumnale*, p. 14, **n. spp.**, *E. pini* Nal. p. 7, *tenuis* Nal. p. 8, *drabæ*, p. 8, *quadri-setus* F. Thom., p. 7, *similis* Nal. p. 8, *ribsaameni* Nal. p. 9, *galiobius* Can. p. 9, *centaureæ* Nal. p. 10, *pilosellæ* Nal. p. 11, *ribis* Nal. p. 11, *longisetus*, p. 12, *salicobius*, p. 17, note on; LINDROTH, Acta Soc. Faun. Fenn. xxvi, 1904.
- Erythreus ignotus*, p. 91, *E. glaber*, p. 92, *E. flavus*, p. 92, Borkum Isl.; OUDEMANS, Ent. Ber. Nederland. No. 13, **n. spp.**
- E. germanicus* Oud. p. 122, pl. 7, figg. 28 & 29; OUDEMANS, Tijdschr. Ent. 1904.
- Erythrocheylus* **n. gen.** for *Pseudocheylus erythroides* Leon. (from America), p. 27, *E. littoralis*, Italy, p. 27; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Eugamasus epsilon*, Bremen, p. 654; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Eulaelaps* **n. subgen.** of *Laelaps* (type *Laelaps stabularis* Can.), p. 13; A. BERLESE, Zool. Anz. 1904.
- Eulais (Eylais)* gener. characters, p. 101 and text-fig.; C. F. GEORGE, Naturalist 1904, p. 101.
- E. mrázeki*, Montenegro; THON, SB. Bohmisch. Ges. 1903, No. 19, **n. sp.**

- E. angustifrons* Choperi, p. 47, fig. 1, *E. skorikovi*, p. 49, fig. 2, *E. saratovi*, p. 50, fig. 3, *E. elliptica*, p. 52, fig. 4, *E. krendovski*, p. 53, fig. 5, *E. gigas*, p. 55, fig. 6, Russia gov. of Saratov; R. PIERSIG, Annuaire Mus. St. Petersb. ix, **n. spp.**
- Eupodidae*, key to genera, p. 13; BANKS, a treatise on the Acarina.
- Eviphis* **n. gen.** p. 242, *E. uropodinus*, Italia, p. 243, *E. tubicolus*, Cape Colony in nidis termitis, p. 243, *E. (?) or new gen. Iphidozercon* *gibbus* Italy, p. 246; A. BERLESE, Redia i, fasc. ii, **n. spp.**
- Eylais bicornuta*, Irish, p. 200, pl. 10, figg. 1 & 2; J. N. HALBERT, Irish Natural. xiii, No. 9, **n. sp.**
- E. nulliporus*, p. 73; S. THOR, Nyt Mag. Naturv. t. 41, **n. sp.**
- Falculifer rostratus* Buchh., hypopial Nymphe, p. 91; E. REUTER, Medd. Soc. Faun. Fenn. 7, xi, 1903 (1904).
- Feltria minuta* Koenike, note on, p. 347; R. MONTI, Rec. ist. Lombardo, ser. ii, t. xxxvii.
- Gamasidae*, key to genera, p. 56; BANKS, A treatise on Acarina.
- G. myrmecophili*, characters of the, pp. 205-323, text-fig.; A. BERLESE, Redia i, fasc. ii.
- Gamasolaspis* **n. subg.** of *Holostaspis* (type *H. gamasoides* Berl.); A. BERLESE, t. c. p. 265.
- Gamasiphis* **n. gen.** (type *Gamasus pulchellus* Berl.), p. 261; A. BERLESE, t. c.
- Gamasus* (*Pergamasus*) *noster*, p. 236, *G. theseus* (*Gamasus crassipes adultus* Berlese olim) var. *alpina*, p. 236, *G. alpestris*, p. 236, *G. pugilator*, p. 236, *G. parvulus*, p. 237, *G. misellus*, p. 237, *G. oxygynellus*, p. 237, *G. runcatellus*, p. 237, *G. decipiens*, p. 238, *G. (Hologamasus) pollicipatus*, p. 238, *G. (Amblygamasus) sagitta*, p. 238, *G. fimetorum*, p. 238, *G. distinctus*, p. 239, *G. neglectus*, p. 239, *G. intermedius*, p. 240, *G. hortivagus*, p. 240, *G. reticulatus*, p. 240, Italy, *G. thoni*, p. 239, *G. obesus*, p. 239, Corfu; A. BERLESE, t. c. **n. spp.**
- G. (Eug.) immanis*, Norway, p. 262, *G. (Eug.) chortophilus*, Italy, p. 262, *G. (Eug.) excurrens*, Norway, p. 263, *G. (Pergamasus) runciger*, Norway, p. 263, *G. crassipes* L. *brevicornis*, Norway, p. 263; A. BERLESE, t. c. **n. spp.** and **n. var.**
- G. pusillus* Berl., note on, p. 278, A. BERLESE, t. c.
- G. californicus*, California (Claremont), p. 368, pl. 41, figg. 54, 55 & 58; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Glycyphagus cadaverum* (vulgo *spinipes*), note on, p. 102, *G. setosus* C. L. Koch, note on, p. 102, *G. sculptilis* Meg. (type of *G. domesticus*), p. 102, *G. troupeau* **n. nom.** for *G. sp.* Troupeau 1879, p. 102, *G. michaeli* **n. nom.** for *G. spinipes* Michael, p. 103, *G. domesticus concretipilus*, Holl. p. 102, *G. domesticus unisetus*, Holl. p. 102, *G. burchanensis*, Borkum Isl., p. 103, *G. privatus*, Holl. p. 102, *G. fustifer*, Holl. p. 103; OUDEMANS, Ent. Ber. Nederland. No. 14, **n. subspp.** and **n. spp.**
- G. setosus* C. Koch, p. 127, pl. 8, figg. 51-53, *G. fustifer* Oudem. p. 129, pl. 8, figg. 54-56, *G. burchanensis* Oudem. p. 131, pl. 9, figg. 57-60, OUDEMANS, Tijdschr. Ent. 1904.
- Glycyphagus spinipes* and *ansor* infesting furniture; RANKIN, pp. 380 & 381, Tr. Glasgow Soc. vi.
- Greenia sjöstedti*, Kameroun, p. 152, pl. 2, figg. 11-15; TRÄGARDH, Ent. Tidskr. xxv, **n. sp.**
- G. perkinsi* and *alfkeni*, symbiosis between these Mites and *Cophorthosoma*, pp. 137-139; OUDEMANS, Zool. Anz. xxvii, 1903.
- Halacaridae*, key to genera, p. 41; BANKS, A treatise on Acarina.
- Hemaphysalis aculeata* on *Tragulus meminna* of India, p. 255; L. LAVARRA, Boll. Soc. zool. Ital. xiii, **n. sp.**
- Holaspulus* **n. subg.** of *Holostaspis* (type *H. tenuipes* Berl.), p. 265; A. BERLESE, Redia i, fasc. ii.

- Holostaspella* **n. subgen.** for *Holostaspis sculpta*, Cape Colony, in nidis *Termitidis tubicolæ*, p. 241 ; A. BERLESE, t. c. **n. sp.**
- Holostaspis mandibularis*, p. 263, *H. posteroarmatus*, p. 263, *H. subbadius*, p. 264, *H. penicilliger*, p. 264, Italy, *H. longispinosus* Kr. *asper*, Corfu, p. 264, *H. longulus hortorum*, Italy, p. 265, *H. (Gamosholaspis) gamasoides*, Italia, p. 265, *H. (Holaspulus) tenuipes*, Italia, p. 266 ; A. BERLESE, t. c. **n. spp** and **n. var.**
- H. pisentii* Berl., note on, p. 279 ; A. BERLESE, t. c.
- Hoplotoderma phyllophorum*, p. 275, *H. clavigerum*, p. 275, Italy ; A. BERLESE, t. c. **n. spp.**
- Hoplotelaps* **n. subgen.** of gen. *Laelaps* (typ. *Laelaps hermaphrodita* Berl.), p. 14 ; A. BERLESE, Zool. Anz. 1904.
- Hoplomegistus* **n. gen.** (type *Megistanus armiger*), p. 266 ; A. BERLESE, Redia i, fasc. ii.
- Hydrachnidae*, the Servian, with descriptions, in Servian, of certain species that may be new (*Limnesia serbica*, *dentata* etc.) though not so indicated ; GJORGJEVIC, Ghlas Srpska Ak. lxvii, pp. 153-189.
- Hydrachnidae*, key to genera, p. 37 ; BANKS, A treatise on the Acarina.
- Hydrachnidae*, nomencl. rem. ; THOR, Nyt Mag. Naturv. xli.
- Hydrachna distincta* Koen., p. 200, pl. 10, fig. 4 ; J. H. HALBERT, Irish Natural. xiii, No. 9.
- H. tectocervix*, Borkum Isl., p. 92 ; OUDEMANS, Ent. Ber. Nederland. No. 13, **n. sp.**
- Hydrogamasus silvestrii*, Italy, p. 27 ; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Hydryphantes*, p. 74 ; S. THOR, Nyt Mag. Naturv. xli, **n. var.**
- H. jujuyensis*, Rep. Argent. prov. Jujuy, p. 395, figg. 1 & 2 ; E. NORDENSKIÖLD, Arkiv Zool. i, **n. sp.**
- Hygrobatas dodecaporus*, Rep. Argent. prov. Jujuy, p. 396 ; E. NORDENSKIÖLD, t. c. **n. sp.**
- Hypoaspis* Canestr., note on, p. 14 ; A. BERLESE, Zool. Anz. 1904.
- H. pavidus* (Koch) Oudem. and *H. cossi* (Dugès) Oudem., synonymy. note, p. 276 ; A. BERLESE, Redia i, fasc. ii.
- H. ometes* Holl., p. 100 ; OUDEMANS, Ent. Ber. Nederland. No. 14, **n. sp.**
- H. lubrica*, Bremen, p. 654 ; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Hypochthonius minutissimus*, Italy, p. 252 ; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Imparipes histicrinus*, Italy, p. 24 ; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Iphidioides* **n. nom.** for *Iphis* C. L. Koch (præocc. Leach 1817) et *Eumæus* C. L. Koch (præocc. Hubner 1816) et *Emeus* Mégnin (lapsus for *Eumæus*), type *Iphis ostrinus* C. L. K., p. 140, *I. concentricus* (loc. ?), p. 140 ; OUDEMANS, Ent. Ber. Nederland. No. 16, **n. sp.**
- Iphidiopsis* instead of *Iphiopsis* Berlese, p. 140 ; OUDEMANS, t. c.
- Iphidulus* **n. gen.**, p. 176, *I. communis*, Italy, p. 176, *I. communis hederæ*, p. 176, *I. longicuadus*, Italy, p. 176 ; RIBAYA C., Riv. Patol. Veg. x, **n. spp.** and **subsp.**
- Ixodidae*, biology of, p. 569, 4 text-figg. ; P. MÉGNIN, J. Anat. Physiol. xl.
- Ixodidae*, key to subfam. and gen., pp. 45-47 ; BANKS, A treatise on the Acarina.
- Ixodidés*, note sur les, I. Sur la classification des *Ixodidae*, p. 444, II. Note sur des espèces connues, p. 450, *I. thoracicus* K. *euryptidis* Markell, *fodiens* Murray, p. 451, *ovatus* Neum. p. 452, *bifurcatus* Neum., *brunneus* K. p. 455, III. Espèces nouvelles, *I. australiensis*, Austr. occid. (on *Canis*) p. 457, *I. boliviensis*, Bolivia (on *Speothas venaticus*), p. 458, *I. japonicus*, Tokio, p. 458, *I. nitens*, Christmas Isl. (on *Mus macleari*) p. 459, *I. rubicundulus*, Cape Colony (on *Oris*), p. 461, *I. sculptus*, California, p. 462 ; L. G. NEUMANN, Arch. parasit. 1904, text-fig., **n. spp.**
- Ixodes ricinus*, p. 335, *tenuirostris* Neum. p. 336, *acuminatus* Neum. p. 336 parasit. on rats ; G. TIRABOSCHI, Arch. parasit. 1904, text-fig.
- I. pilosus*, note on, p. 291 ; MALLY, Agric. J. Cape Good Hope, t. xxv.

- I. anatis*, N. Zeal. (on *Anas superciliosa*), p. 201, pl. 10; CHILTON, Tr. N. Zealand Inst. xxxvi, **n. sp.**
- I. californicus*, California, Claremont (on *Toxostoma crissale*), p. 269, pl. 41, fig. 57; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Laelaps elegantulus*, Italy, p. 241 (in nidis *Tapinomadis erratici*); A. BERLESE, Redia i, fasc. ii, **n. sp.**
- L. maximus*, Montevideo (on *Hesperomys vulpinus*), p. 259, *L. spiniferus*, W. Africa, p. 260, *L. pontiger*, Italy, p. 260, *L. stabularis* var. *proxima*, Norvegia (on *Lemmus*), p. 260; A. BERLESE, t. c. **n. spp.** and **n. var.**
- Laelaptidae*, key to genera, p. 401, *Laelaps*, charact. and key to subgen., pp. 402-404, text-fig., subgen. *Hypoasis*, key to spp. p. 405, *L. laevis*, p. 406, pls. 15, fig. 116, 16, figg. 126 & 127, 20, fig. 116, *L. myrmecophilus*, p. 409, pls. 16, figg. 128 & 129, 20, fig. 128, *L. myrmophilus*, p. 410, pls. 15, figg. 117-119, 20, fig. 117, *L. canestrinii*, p. 412, pl. 15, figg. 120-122, *L. acutus*, p. 413, pls. 14, fig. 111, 15, figg. 112 & 113, *L. elegantulus*, p. 414, pl. 16, figg. 130-132, subgen. *Cosmolaelaps*, key to spp. p. 416, *L. cuneifer*, p. 416, pls. 15, figg. 123 & 124, 16, fig. 125, var. *americana*, Connecticut, p. 418 (**n. var.**), *L. vacuus*, p. 419, pls. 14, fig. 107, 15, fig. 114, var. *ensigera*, p. 420, pl. 14, fig. 108, var. *scalpiger*, p. 421, pl. 14, fig. 110, Italy (**n. var.**), *L. ornatus*, p. 421, pls. 18, fig. 164, 19, figg. 164 & 165, subgen. *Laelaspis*, key to spp. p. 422, var. *equitans*, p. 423, pl. 17, figg. 137-139, var. *longitarsa*, Italy, p. 424 (**n. var.**), *L. humeratus*, Russia, p. 425, pl. 18, figg. 151-153 (**n. sp.**), *L. finitimus*, p. 426, pl. 17, figg. 143 & 144, *L. ovisugus*, p. 427, pl. 17, figg. 145-147, subgen. *Oolaelaps*, key to spp. p. 428, *L. oophilus*, p. 428, pl. 17, figg. 140-142, *L. montanus*, Italy, p. 430, pls. 17, fig. 148, 18, fig. 149 (**n. sp.**), *L. parvulus*, Russia, p. 431, pls. 16, fig. 135, 18, fig. 150 (**n. sp.**), subgen. *Androlaelaps*, p. 432, *L. karavaiewi*, Russia, p. 432, pl. 16, figg. 133 & 134; A. BERLESE, t. c. **n. spp.** and **var.**
- Laelaps versteegi*, Surinam, parasitic on *Mus*, p. 160; OUDEMANS, Ent. Ber. Nederland. No. 18, **n. sp.**
- L. versteegi*, Surinam, p. 223, text-fig.; OUDEMANS, Notes Leyden Mus. xxiv, **n. sp.** (?)
- L. pilosula*, California (Sta Rosa Isl.), p. 368, pl. 41, fig. 49; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- L. stabularis* Koch, *L. echidninus* Berl. p. 342, *L. agilis* Koch. p. 344, parasitic on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- L. stabularis* K., on *Mus decumanus*, *L. echidninus* Berl., on *Mus rattus* and *decumanus*, pp. 88-97; G. TIRABOSCHI, Boll. Soc. zool. Ital. xiii.
- Laelaspis n. subgen.* of *Laelaps* (typ. *Laelaps astronomicus* Koch), pp. 13 & 14, *L. ovisugus*, Italy, p. 14, *finitimus*, Italy, p. 15; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Lebertia pavesii* R. Monti, new descript., p. 240, *L. papillosa* Piersig, observ., p. 245, *L. longipes*, from Lago Devero (Italy) p. 242, pl.; R. MONTI, Rend. Ist. Lombardo, ser. 2, t. xxxvii.
- Leiognathus blanchardi*, Europa, on *Arctomys marmotta*, p. 558; TROUESSART, Arch. parasit. viii, No. 4, **n. sp.**
- Leptus autumnalis*, note on, p. 363; FRIES, Munchen Med. Wochenschr. 51.
- Liacarus alatus*, Italy, p. 273; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- L. modestus*, California (Los Angeles), p. 365, pl. 41, figg. 53 & 59; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Limnesia cornuta*, p. 143, *paucispina*, p. 152, N. America; WOLCOTT, Tr. Amer. micr. Soc. xxiv, **n. spp.**
- Listrophorus leukarti* Pagenst., p. 327, parasitic on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Lohmanella paradoxa n. nom.* for *Lohmannia* Neresheimer (nec Michael), p. 137, *L. catenata*, p. 137; NERESHEIMER, Zeitschr. wiss. Zool. t. 76.

- Macrocheles tridentinus* Can. and *vagabundus* Oudem. synonymy. note, p. 277; A. BERLESE, Redia i, fasc. ii.
- Megalolalaps hirtus*, Brazil on *Neleus interruptus*, p. 261; A. BERLESE, t. c. **n. sp.**
- Megistanus medius*, p. 266, *grandis*, p. 267, W. Africa, A. BERLESE, t. c. **n. spp.**
- Megisthanus floridanus*, Florida, p. 145; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- Melichares* Hering, note on, p. 140, *M. agilis* Hering, note on, p. 140; OUDEMANS, Ent. Ber. Nederland. No. 16.
- Metaparasitus suboles* Bremen, p. 655; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Mideopsis crassipes*, England, p. 107; C. D. SOAR, J. Quekett Club, Nov. 1904.
- M. spinipes*, Rep. Argent. (prov. Jujuy), p. 296, fig. 3; E. NORDENSKIÖLD, Arkiv Zool. i, **n. sp.**
- Myobia musculi* Schrank, p. 332, *affinis*, *ensifera* Popp. *lemnisca* C. Koch, p. 332; G. TIRABOSCHI, Arch. parasit. 1904.
- Myocoptes musculus* Clap., p. 327, *M. tenax* Meg. p. 328, parasitic on rats; G. TIRABOSCHI, t. c.
- Myonyssus* **n. gen.**, p. 337, *M. decumani*, p. 337; G. TIRABOSCHI, t. c. **n. sp.**
- Myrmecoleichus*, p. 434, *M. coronatus*, p. 435, pl. 18, figg. 154 & 155; A. BERLESE, Redia i, fasc. ii.
- Myrmoleichus* **n. gen.**, p. 244, for *M. coronatus*, Italy (in nidis formicarum), p. 244; A. BERLESE, t. c. **n. sp.**
- Myrmonyssus* **n. gen.**, p. 16, *M. diplogenus*, Italy, p. 16, *M. brachiatus*, Italy, p. 17, *M. acuminatus*, Italy, p. 18; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Myrmonyssus*, charact. and key to spp., pp. 436 & 437, *M. diplogenus*, p. 438, pl. 18, figg. 162 & 163, *M. antennophoroides*, p. 439, pls. 17, fig. 158, 18, fig. 158, 19, fig. 161, *M. flexuosus*, p. 440, 16, fig. 136, *M. brachiatus*, p. 441, 18, figg. 156 & 157, 19, fig. 156, *M. acuminatus*, p. 441, pls. 17, fig. 166, 19, figg. 166-168; A. BERLESE, t. c.
- M. antennophoroides*, Italy, on *Comptonotus aethiops*, p. 244; A. BERLESE, t. c. **n. sp.**
- Myrmozercon*, p. 444, *M. brevipes*, p. 445, pls. 18, fig. 169, 19, figg. 169-172, 20, fig. 169; A. BERLESE, t. c.
- Neoberlesia*, p. 442, *N. equitans*, p. 443, pls. 19, fig. 182, 20, figg. 182-184; A. BERLESE, t. c.
- Neopodocinum vosi* Oud., p. 117, pl. 6, figg. 5-10, *N. nederveeni* Oud., p. 118, pl. 6, figg. 11-17, *N. (Lalaps) jaspersi* Oud., p. 119, pl. 6, figg. 18-20; OUDEMANS, Tijdschr. Ent. 1904.
- Neopocinum* Oud., note on, p. 100, *N. vosi* on *Catharsius molossus* from Sumatra, p. 100; OUDEMANS, Ent. Ber. Nederland. No. 14, **n. sp.**
- Neoseius* **n. gen.** (type *Uroseius novus* Oud.); OUDEMANS, t. c. No. 14.
- Nephrophages sanguinarius* Miyake et Scriba, note on, p. 153; OUDEMANS, t. c. No. 17.
- Notaspis voigtsi* Oud., p. 126, pl. 8, figg. 48-50; OUDEMANS, Tijdschr. Ent. 1904.
- Notoedres alepis* Raillet, p. 325, parasit. on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Ololalaps* **n. gen.** (type *Lalaps venetus* Berl.), p. 260, *O. confinis*, Norvegia, p. 261; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Oribatida*, key to genera, p. 71; BANKS, A treatise on the Acarina.
- Oribata californica*, California (Mt. Shasta), p. 367, pl. 41, fig. 52; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Oribatula connexa*, Italy, p. 273; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Oribates myrmobates*, Italy, p. 25; A. BERLESE, Zool. Anz. 1904, **n. sp.**

- Pachylaelaps*, charact. and key to subgen. with text-figg. 450 & 451, *Onchodellus* (**n. subgen.**), *reticulatus*, Italy, p. 452, pls. 19, figg. 173-175, 20, fig. 179; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- P. angulatipes*, Corfu, p. 245; A. BERLESE, t. c. **n. sp.**
- Parasitus*, note on several species recently described by Dr Oudemans, pp. 279 & 280; A. BERLESE, t. c.
- P. poppei* Oud., note on, p. 114, pl. 4, figg. 1 & 2; OUDEMANS, Tijdschr. Ent. 1904.
- P. minor* Berl., note on, p. 100, *P. primitivus*, p. 140, *P. delta*, *P. iota*, *P. cappa*, p. 153; OUDEMANS, Ent. Ber. Nederland. Nos. 14-17, **n. spp.**
- P. bremensis*, p. 651, *consanguineus*, p. 651, *eta*, p. 652, *congener*, p. 652, *beta*, p. 652, *alpha*, p. 653, *theta*, p. 653, *zeta*, p. 653, *setosus*, p. 653, *consors*, p. 654, Germany (Bremen); VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. spp.**
- Pergamasus gamma*, Bremen, p. 654; VOIGTS & OUDEMANS, t. c. **n. sp.**
- Pediculoides histricinus*, Italy, p. 24, *P. modestus*, Italy, p. 24; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- Phaulocylliba* **n. gen.**, p. 270, *P. ventricosa*, Norvegia, p. 270; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Phaulodinychus* **n. gen.** (type *P. repletus* Berl.), p. 269, *P. repletus*, Norvegia, p. 269, *P. simplex*, Italy, p. 269; A. BERLESE, t. c. **n. spp.**
- Phthiracarus cryptopus*, California (Claremont), p. 367, pl. 41, fig. 50; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- Phyllocoptes azaleæ*, Holland, on *Azalea indica*; NALEPA, Anz. Ak. Wiss. 1904, p. 335, **n. sp.**
- Phytoptus*, galls of phyt. with pl.; MELVILLE THURSTON COOK, Ohio Natural. v, No. 6.
- Physalozercon* **n. gen.** for *Antennophorus raffrayi* Wasmann; A. BERLESE, Redia i, fasc. ii, p. 246.
- Physalozercon*, charact. text-fig., p. 399, *P. raffrayi*, p. 400, pls. 13, fig. 105, 14, fig. 105; A. BERLESE, t. c.
- Phytoseius* **n. gen.** (type *Seius plumifer* Can. et Fanz.), p. 177, *P. horridus*, Italy, p. 178, *P. finitimus*, Italy, p. 178; RIBAYA C., Riv. Patol. Veg. x, **n. spp.**
- Pionia carnea* C. Koch, note on, p. 245; RINA MONTI, Rend. Ist. Lombardo, Ser. ii, t. xxxvii.
- Pæcilocheirus* Canestrini 1882 = *Iphidiosoma* Berl. 1892 (type *Holoaspis fimetarius* Muller), p. 140, *Pæcilocheirus* Berlese (type *Acarus fucorum* de Geer.), p. 140; OUDEMANS, Ent. Ber. Nederland. No. 16.
- Polyaspis patavinus repandus*, Italy, p. 273; A. BERLESE, Redia i, fasc. ii, **n. var.**
- Pseudofeltria* **n. gen.**, p. 105, *P. scourfieldi*, England, p. 105, text-fig. 1; C. D. SOAR, J. Quekett Club, Nov. 1904, **n. sp.**
- Psorogates simplex* Tyrrel, p. 330, parasit. on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Rhaphignathus ruber* C. L. Koch = *Acarus denticulatus* L., p. 565; TRÄG-ARDH, Zool. Anz. xxvii.
- Rhipicephalus appendiculatus* and other species, conveying cattle fever in Africa; THEILER, Rep. S. Afric. Ass. ii, pp. 201-220.
- R. hæmatophysaloides* Supino, p. 454, *R. perpulcher* Gerst. p. 455, note on, *R. nitens*, Cape Colony, p. 462, *P. ziemani*, Cameroon, p. 464; L. NEUMANN, Arch. parasit. 1904, **n. spp.**
- Rhyncholophus gracilipes*, California (Santa Rosa Island), p. 265, pl. 41, fig. 56; BANKS, P. Calif. Ac. iii, No. 13, **n. sp.**
- R. punctatus*, Florida, p. 143; BANKS, P. Ac. Philad. Jan. 1904, **n. sp.**
- Sarcoborus* **n. nom.** for *Sarcopterus* Giebel (1871), p. 154; OUDEMANS, Ent. Ber. Nederland., No. 17.
- Sarcoptidæ*, key to genera, p. 97; BANKS, A treatise on the Acarina.

- Sarcoptidæ*, on the fecondation of, p. 367; TROUESSART, C.R. Soc. Biol. Feb. 1904.
- Scutovertex schneideri*, Borkum Island, p. 92; OUDEMANS, Ent. Ber. Nederland. No. 13, **n. sp.**
- Sebaia n. gen.* (near *Pachygnathus*), p. 101, *S. rosacea*, Holl., p. 102; OUDEMANS, t. c. No. 14, **n. sp.**
- S. rosacea* Oud., note on, p. 122, pl. 7, figg. 28-37; OUDEMANS, Tijdschr. Ent. 1904.
- Seiulus levis*, Bremen, p. 654; VOIGTS & OUDEMANS, Zool. Anz. xii, 1904, **n. sp.**
- S. plumosus* Oudem., synonym. note, p. 276; A. BERLESE, Redia i, fasc. ii.
- S. curtipilus*, Italy, p. 175, *S. soleiger*, Italy, p. 176; RIBAYA C., Riv. Patol. Veg. x, **n. spp.**
- Serrarius longicornis*, Italy, p. 252, *S. major*, Corfu, p. 252; A. BERLESE, Redia i, fasc. ii, p. 252, **n. spp.**
- Sperchon glandulosus* Koenike, note on, p. 246; RINA MONTI, Rend. Ist. Lombardo, Ser. ii, p. xxxvii.
- Sphærolaelaps n. gen.* (*Laelaptidæ*) type *Laelaps holotyroides*, p. 243; A. BERLESE, Redia i, fasc. ii.
- Sphærolaelaps*, p. 447, *S. holothyroides*, p. 448, pl. 20, figg. 180 & 181, *S. calcariger*, p. 449, pl. 19, fig. 176, pl. 20, figg. 177 & 178; A. BERLESE, t. c.
- Sphæroseius n. gen.*, type *S. ecitonis*, p. 433, *S. ecitonis*, p. 433, pl. 18, figg. 159 & 160; A. BERLESE, t. c.
- Tarsonemidæ*, key to subf., p. 75; BANKS, A treatise on the Acarina.
- Tarsonemus latus*, California, p. 55, pl. 2, fig. 3; BANKS, J. N. York Ent. Soc. xii, **n. s.**
- Tectocephus minor*, Italy, p. 252; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Tenuipalpus californicus*, California, p. 55, pl. 2, fig. 2; BANKS, J. N. York Ent. Soc. xii, **n. sp.**
- T. cuneatus*, injuries to lemons in Sicily; CAVARA & MOLLIKA, Atti Acc. Gioen. (4) xvii, Mem. 2, 25 pp., 1 pl.
- Tetranychidæ*, key to genera, p. 23; BANKS, A treatise on the Acarina.
- Tetranychoides n. g.*, p. 54, *T. californica*, California, p. 54, pl. 2, fig. 1; BANKS, J. N. York Ent. Soc. xii, **n. sp.**
- Tetranychus telarius*, note on, p. 246; A. TULLGREN, Ent. Tidskr. 1903.
- Thrombidium striaticeps*, French, pp. 704 & 705, figg. 1-4, *T. poriceps*, French, p. 704, figg. 5-9; F. HEIM & O. OUDEMANS, C.R. Ac. Sci. t. 138, 1904, **n. spp.**
- T. striaticeps*, p. 91, *T. poriceps*, p. 93; HEIM & OUDEMANS, Bull. Soc. ent. France 1904, **n. spp.**
- T. holosericeum* L., *poriceps* Oudm., *tectovertix* Oudm. and *striaticeps* Oudm., larva, p. 119; OUDEMANS, Ent. Ber. Nederland. No. 15.
- Thrombus n. gen.*, p. 91, *T. gymnus*, Borkum Isl., p. 91; OUDEMANS, t. c. No. 13, **n. sp.**
- Trachytes lamda*, Italy, p. 272; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- Trachyuropoda*, note on, p. 248, *T. wasmanniana*, Luxemburg in nidis *Lasii mixti*; A. BERLESE, t. c. **n. sp.**
- T. cristiceps* (Cn.), *T. imperforata*, Italy, p. 271; A. BERLESE, t. c. **n. var.**
- T.*, charact. and key to subgenus, pp. 350 & 351, subgen. *Janetiella n. subgen.*, p. 352, key to species, p. 354, *T. cristiceps*, p. 354, pl. 9, figg. 46, 47 & 48, *T. coccinea*, p. 356, pl. 10, figg. 49 & 50, pl. 11, fig. 72, var. *sinuata n. var.*, p. 357, pl. 10, figg. 51 & 52, *T. excavata*, p. 358, pl. 10, figg. 53, 54, 55, 56 & 57, *T. laminosa*, p. 360, pl. 11, figg. 60, 61, 62, 63, 64, *T. wasmanniana*, p. 362, pl. 10, figg. 58 & 59, *T. magna*, p. 363, pl. 9, figg. 41, 42, 43, 44 & 45, *T. bostocki*, p. 366, pl. 11, figg. 65 & 66, pl. 12, fig. 73, subgen. *Leonardiella n. subgen.*, p. 367, *T. canestriniana*, p. 368, pl. 11, figg. 67, 68 & 69, var. *septentrionalis*

- n. var.**, Russia, p. 369, pl. 11, fig. 70, var. *insularis* Corsica, p. 369, *T. riccardiana*, p. 370, pl. 12, figg. 74-78; A. BERLESE, t. c.
- Trichæcius brevipes* Canestr., p. 328, parasit. on rats; G. TIRABOSCHI, Arch. parasit. 1904.
- Trichotarsus*, note on, p. 234, pp. 265 & 266, text-fig., *T. ludwigi*, and *T. osmice*, figured, p. 235; TROUESSART, C.R. Soc. Biol. lvi.
- T. simplex*, Kameroun, p. 156, pl. 2, figg. 17 & 18; TRÄGARDH, Ent. Tidskr. xxv, **n. sp.**
- Trombella otiorum*, Italy, p. 126, text-fig.; A. BERLESE, Riv. Patol. Veg. ix, **n. sp.**
- Trombidium*, *Celæno* and *Cheyletus*, synonymy and orthographical note; A. BERLESE, Redia i, fasc. ii, p. 277.
- Trombidion bipectinatum*, Kameroun, p. 158, pl. 2, fig. 16; TRÄGARDH, Ent. Tidskr. xxv, **n. sp.**
- T. vagubundum*, Italy, p. 28; A. BERLESE, Zool. Anz. 1904, **n. sp.**
- Trouessartia rosteri* Berlese, note on, p. 163, *T. trouessarti* (loc. ?), p. 163; OUDEMANS, Ent. Ber. Nederland. No. 18, **n. sp.**
- Tyroglyphida*, key to genera, p. 81; BANKS, A treatise on the Acarina.
- Tyroglyphides*, on the fecundation in, p. 367; TROUESSART, C.R. Soc. Biol. Feb. 1904.
- Urodinychus* **n. gen.** (type *Uropoda carinata* Berl.), p. 270, *U. karawaiewi*, in nidis formicæ *Myrmica scabrinodis*, p. 270, **n. sp.**, *U. ovalis* Kram. thozianus, Norway, p. 271, **n. var.**; A. BERLESE, Redia i, fasc. ii, **n. sp.**, and **n. var.**
- U.*, charact. and key to spp., pp. 372-375, *U. carinatus*, p. 376, pls. 12, figg. 79 & 80, pl. 13, figg. 87-89, *U. janeti* French, p. 378, pls. 12, figg. 81-84, 13, fig. 90, *U. karawaiewi*, p. 380, pl. 12, figg. 85 & 86; A. BERLESE, t. c. **n. sp.**
- Urodiscella*, charact. and key to spp., p. 339, *U. ricasoliana*, p. 340, pl. 8, figg. 21 & 22, *U. alophora*, p. 341, pl. 8, fig. 23, *philoctena*, p. 342, pl. 8, figg. 19 & 20; A. BERLESE, t. c.
- Urotrophis* **n. gen.**, p. 245, *U. striatus*, p. 245, *U. scabratus*, p. 245, Italy; A. BERLESE, t. c. **n. spp.**
- Uropoda leonardiana*, Italy, p. 20, *distinguenda*, Italy, p. 21; A. BERLESE, Zool. Anz. 1904, **n. spp.**
- U.*, Latr., note on, p. 248; A. BERLESE, Redia i, fasc. ii.
- U. alfkeni*, on *Prosopis brevicornis*, in Bremen, p. 101; OUDEMANS, Ent. Ber. Nederland. No. 14.
- U. alfkeni* Oud., p. 120, pl. 7, figg. 21-27; OUDEMANS, Tijdschr. Ent. 1904.
- U. (Urosternella) foraminifera*, Italy, p. 251; A. BERLESE, Redia i, fasc. ii, **n. sp.**
- U. brasiliensis*, Brasilia, p. 271, *U. alpina*, p. 272, *pilosella*, p. 272, Italy; A. BERLESE, t. c. **n. spp.**
- U. levisetosa*, Bremen, p. 655; VOIGTS & OUDEMANS, Zool. Anz. 1904, **n. sp.**
- Uropodida*, key to genera, p. 63; BANKS, A treatise on the Acarina.
- U.*, structure and key to genera, pp. 325-328, text-fig.; A. BERLESE, Redia i, fasc. ii.
- Uroobovella* **n. gen.** (type *Uropoda obovata* C. et B.), p. 249, *U. notabilis*, in nidis formicæ *Lasius niger*; A. BERLESE, t. c. **n. sp.**
- U. obovata*, p. 337, pl. 8, figg. 16, 17 & 18, *notabilis*, p. 338, pl. 8, figg. 24 & 25; A. BERLESE, t. c.
- Uropitella* **n. gen.** (type *Uropoda paradoxa* Berl.), p. 249, *U. oculata*, p. 250, *U. conspicua*, Italy, *U. minutissima*, Italy and Nederland in nidis formicæ *Lasius niger* and *Tapinoma erraticum*, p. 250, *U. pennsylvanica*, Pennsylvania, in nidis *Formicæ subsericeæ* et *rubræ*, p. 251; A. BERLESE, t. c. **n. spp.**

- U. minutissima villosella*, Russia on *Lasius flavus*, p. 272; A. BERLESE, t. c. **n. var.**
- U.*, charact. and key to spp., pp. 343 & 344, *U. leonardiana*, p. 345, pl. 8, figg. 28 & 29, *U. ovatula*, p. 346, pl. 8, figg. 26 & 27, *U. pennsylvanica*, p. 347, pl. 9, figg. 39 & 40, *U. minutissima*, p. 348, pl. 9, figg. 35, 36, 37 & 38, *U. villosella*, Italy, p. 349, pl. 9, fig. 31 (**n. var.**); A. BERLESE, t. c.
- Uropolyaspis*, p. 384, *U. hamuliferus* Mich. p. 385, pl. 13, figg. 93 & 94; A. BERLESE, t. c.
- Urotrachytes* **n. gen.** (type *Glyphopsis formicarie* Michael), p. 271; A. BERLESE, t. c.
- U.*, p. 381, *formicarius* Lubbo. p. 382, pl. 13, figg. 91 & 92; A. BERLESE, t. c.
- Varroa* **n. gen.** (*Laelaptinae*), p. 160, *V. jacobsoni*, on *Apis indica* in Java, p. 160; OUDEMANS, Ent. Ber. Nederland. No. 18, **n. sp.**
- V.*, **n. gen.** (?), p. 216, *V. jacobsoni*, Java, p. 217, text-fig.; OUDEMANS, Notes Leyden Mus. xxiv, **n. sp.** (?).
- Zercon trigonus*, p. 268, *Z. ornatus*, p. 269, Italy, *Z. triangularis perforatulus*, p. 269, Italy; A. BERLESE, Redia i, fasc. ii, **n. spp.** and **n. var.**

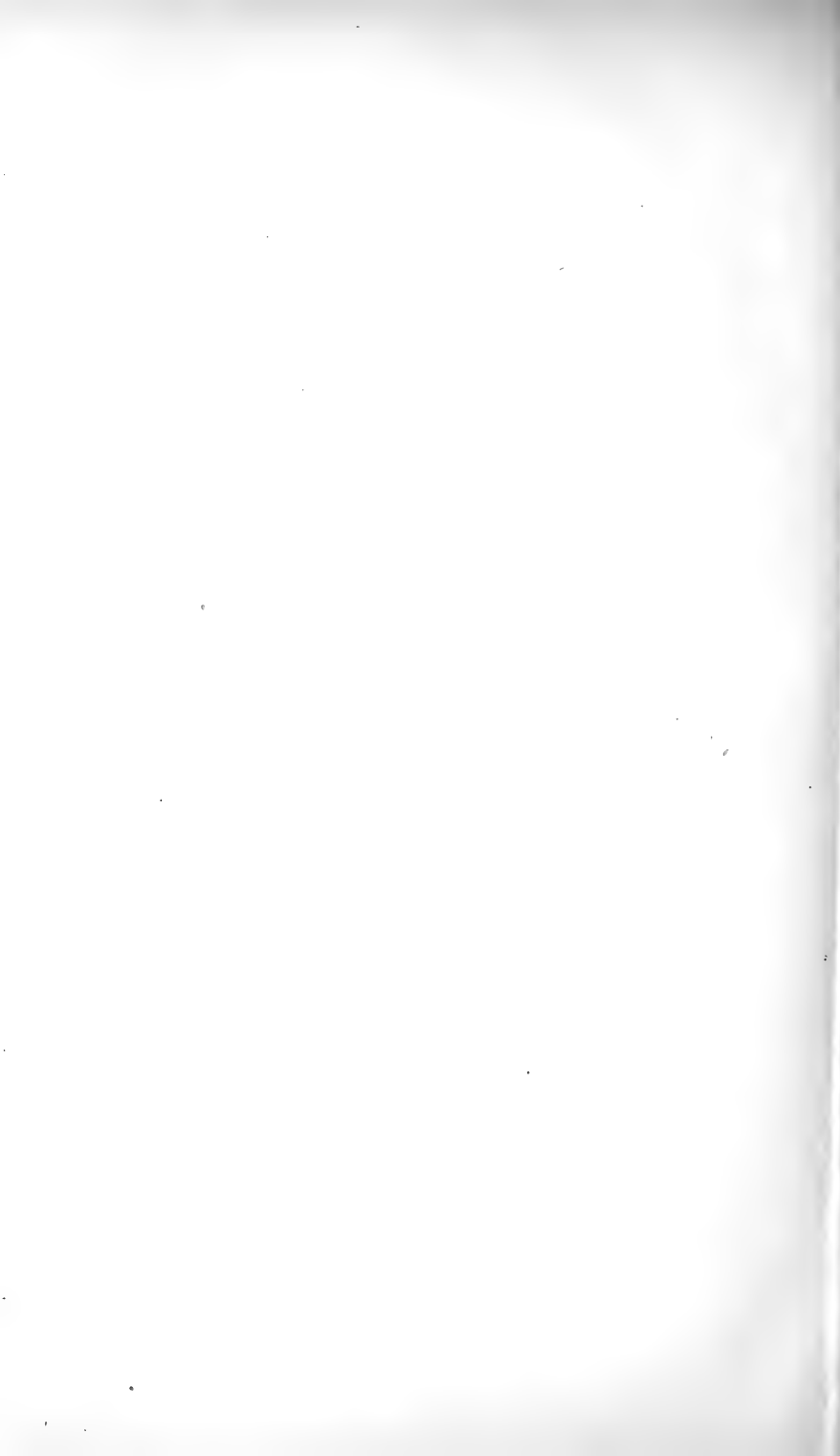
X. TARDIGRADA.

Eggs of Tardigrada; RICHTERS, Ber. Senckenberg Ges. 1904.

- Diaphascon spitzbergense*, Spitzberg, p. 172; RICHTERS, Zool. Anz. xxvii, **n. sp.**
- Echiniscus conifer*, Lugano, p. 73, pl. 5, fig. 8; RICHTERS, Ber. Senckenberg. Ges. 1904, **n. sp.**
- E. blumi*, Spitzberg, p. 172, *E. wendti*, Spitzberg, p. 172, *E. oihonnæ*, Spitzberg, p. 172; RICHTERS, Zool. Anz. xxvii, **n. spp.**
- Macrobotus coronifer*, Tromsø, p. 171, *M. coronifer*, p. 171, and *M. echinogenitus*, p. 169, Spitzberg; RICHTERS, t. c. **n. spp.**

XI. PENTASTOMIDA.

[Vacant.]



XII. MYRIOPODA AND PROTO- TRACHEATA.

BY

F. SILVESTRI.

CONTENTS.

| | Page | | Page |
|--|------|--|------|
| MYRIOPODA. | | 8. South and Central America and West Indies | 8 |
| I. TITLES | 2 | 9. Australasia | 8 |
| II. BIOLOGY. | | 10. Atlantic Islands | 9 |
| 1. Morphology & Classifi- cation | 6 | 11. Indian Ocean Islands | 9 |
| 2. Physiology | 6 | 12. Pacific Ocean Islands | 9 |
| 3. Reproduction & Deve- lopment | 7 | B. Geological | 9 |
| 4. Bionomics | 7 | IV. SYSTEMATIC INDEX. | |
| 5. Miscellaneous | 7 | Chilopoda | 9 |
| III. DISTRIBUTION. | | Symphyla | 12 |
| A. Geographical | 7 | Pauropoda [Vacant] | |
| 1. Arctic and Antarctic | 7 | Diplopoda | 12 |
| 2. Europe and Mediterra- nean Islands | 7 | PROTOTRACHEATA. | |
| 3. Asia (Palæarctic) | 8 | I. TITLES | 17 |
| 4. India and Further India | 8 | II. BIOLOGY | 17 |
| 5. Malay Peninsula and Archipelago | 8 | III. DISTRIBUTION | 17 |
| 6. Africa and Madagascar | 8 | IV. SYSTEMATIC INDEX | 17 |
| 7. North America | 8 | | |

INTRODUCTION.

THE Record of Myriopoda for 1904 is in number of papers a little less than that for 1903 and contains also less interesting contributions to the knowledge of the group.

Amongst the papers on morphology, that of VERHOEFF (60 & 62) on the legs, and that of BÖRNER (5) on the same subject, are the most important. In anatomy and histology we mention the work of HENNINGS (28) on the Tömösvary-organe, and the research of LEGER & DUBOSCQ (38) on the structure of the intestine of *Julus* and *Polyxenus*. BOUIN (7) continues in 1904 the researches on the germinal cells of Chilopoda; BRÖLEMANN (14) writes on the copulatory appendages of some *Anocheta*.

The physiology of the ventral-nervous system of the Myriopoda has received an interesting contribution in the experiments of CARLSON (16); and HENNINGS (29) contributes also to the knowledge of the hearing-organ in Myriopoda.

The bionomic observations are almost restricted to a publication of HENNINGS (29) on the Glomerids. There are brief notes on the venom of Myriopoda, BRIOT (18), COUPIN (20); on the luminosity, DUBOIS (21).

The systematic index is scanty. The most important increase is in the *Scutigera*dæ, VERHOEFF (64); in the *Cambalidæ* there are descriptions of various species of Hawaiian *Dimerogonus* by SILVESTRI (49). ATTEMS (3 & 4), BRÖLEMANN (10-13), COOK (19), LIGNAU (39), SILVESTRI (52) have described various species and genera of Myriopoda, and SILVESTRI (50) has added also a new family (*Doderiudæ*) to the Oniscomorpha with the Italian genus *Doderia*.

In the Prototracheata, BOUVIER (1) has published a very important work on the structure of the eggs.

MYRIOPODA.

I. TITLES.

1. ABSOLON, K. Descriptio systematica faunæ subterraneæ moraviæ adhuc cognitæ. Vestnik. Klub. Prostejove ii (1900), Myriopoda p. 63. [In Moravian.]
2. ATTEMS, C. Myriopoden (in) F. Römer & F. Schaudinn. Fauna Arctica iii, Lief. i, G. Fischer in Jena 1903, pp. 35-54.
3. —. Neue paläarktische Myriopoden, nebst Beiträgen zur kenntniss einiger alten Arten. Arch. Naturg. lxx, 1904, pp. 179-196, pls. ix & x.
4. —. Central- und Hochasiatische Myriopoden, gesammelt im Jahre 1900 von v. Almasy und v. Stummer. Zool. Jahrb. Syst. xx, pp. 113-130, pls. viii & ix.
Abstract, Zool. Zentrbl. xii, p. 165.
5. BÜRNER, C. Ueber die Beingliederung der Arthropoden. III. Die Cheliceraten, Pantopoden und Crustaceen. SB. Ges. naturf. Berlin 1903, pp. 292-341, 6 pls.
Abstract, Zool. Zentrbl. xii, pp. 371-386.
6. —. Zur Klärung der Beingliederung der Ateloceraten. Zool. Anz. Bd. xxvii, pp. 226-243, 5 text-figg.
Abstract, Zool. Zentrbl. xii, pp. 371-386.
7. BOUIN, P. Recherches sur la figure achromatique de la cytodierèse et sur le centrosome. Arch. zool. exp. Notes (4), ii, pp. lxxiii-lxxxviii, 6 text-figg.
Abstract: Zool. Jahresber. 1904, Arthropoda, p. 50.
8. BRIOT, A. Sur le venin de Scolopendres. C.R. Soc. Biol. lvii, pp. 476 & 477.
9. BROCKHAUSEN, H. Über leuchtende Skolopender. Jahresber. Westfal. Ver. xxxi, pp. 163 & 164.
10. BRÖLEMANN, H. W. Myriopodes recueillis par M. A. Pavie en Indo-Chine, pp. 1-13, pls. xiii-xv. Mission Pavie Indo-Chine 1879-1895, Etudes diverses. III. Recherches sur l'histoire naturelle de l'Indo-Chine orientale (Paris, Ernest Levour, editeur 1904).

11. [BRÖLEMANN, H. W.] Chilopodes Monégasques. I. Liste des Chilopodes du territoire de la principauté ou dans ses environs immédiats. II. Description de Geophilides nouveaux. III. Un nouvel *Himantarium* monstrueux. Bull. Mus. Monaco 1904, pp. 1-15, 9 figg.
12. —. Materiali per lo studio della fauna eritrea raccolti nel 1901-1903 dal Dr Andreini, tenente medico. I. Myriapodes. Bull. Soc. ent. Ital. xxxv, pp. 96-153, 2 pls.
13. —. Myriapodes de Guatemala recueillis par Don Juan J. Rodriguez. Bull. Soc. zool. France xxix, pp. 188-191.
14. —. Le genre *Acanthiulus*. Ann. Soc. ent. France lxxii, pp. 469-477, 1 pl.
15. CARL, J. Sur une ligne faunistique dans les Alpes suisses. Arch. Sci. Nat. (4) xvi, 1903, pp. 604-608.
16. CARLSON, A. J. Contributions to the Physiology of the Ventral Nerve-cord of Myriopoda (Centipedes and Millipedes). J. exp. Zool. i, pp. 269-287, 6 figg.
17. CHAMBERLIN, R. V. New Chilopods. P. Ac. Philad. lvi, pp. 651-657.
18. CHABAUT, A. Exploration zoologique de la grotte de Tharaux (Gard). Bull. Soc. Nîmes xxxi, pp. 84-90.
19. COOK, O. F. Myriopoda of North-western North America. Harriman Alaska Exp. viii, pp. 47-82, 3 pls.
20. COUPIN, HENRY. Les poisons des Millepattes. La Nature xxxi, ser. 2^e, pp. 51 & 52, 1903.
21. DONISTHORPE, H. St. J. K. Further experiments with Myrmecophilous Coleoptera. Ent. Rec. xv, 1903, pp. 11 & 12.
Abstract; Zeitschr. wiss. Ins.-Biol. i, p. 45.
22. DUBOIS, R. Lumière animale et lumière minérale. C.R. Soc. Biol. lvi, pp. 442-444.
23. ELLINGSEN, E. Mere om norske Myriopoder. Forh. Selsk. Christian. 1903, vi, pp. 1-11.
24. FAES, H. Nos Myriapodes. Chronique agric. Vaud. xiii, pp. 34-38, 1900.
25. FLORENTIN, R. La faune des grottes de Sainte-Reine. Feuille Natural. (4) xxxiv, pp. 176-179 (Diplopodes, p. 177).
Abstract, Zool. Zentrbl. xi, pp. 708 & 709.
26. GIESBRECHT, W. & MAYER, P. Arthropoda. Zool. Jahresber. 1904, 78 pp. [Myriopoda, pp. 49 & 50.]
27. HALLER, B. Ueber den allgemeinen Bauplan des Tracheatensyncerebrums. Arch. mikr. Anat. lxxv, pp. 181-229, 6 pls. & 18 figg.
Abstract: Zool. Jahresber. 1904, Arthropoda, p. 21.
28. HENNINGS, C. Das Tömösvarische Organ der Myriopoden. Zeitschr. wiss. Zool. lxxvi, pp. 26-52, 1 pl. & 1 text-fig.
Abstract, Zeitschr. wiss. Mikr. xx, pp. 449 & 450, J. R. Micr. Soc. 1904, p. 411, Zool. Jahresber. 1904, Arthropoda, p. 49.
29. —. Zur Biologie der Myriopoden. II. (a) Bemerkungen über *Glomeris marginata* Villers. (b) Geruch und Geruchsorgane der Myriopoden. Biol. Centrbl. xxiv, pp. 251-256, 274-283.
Abstract: Zool. Jahresber. 1904, Arthropoda, p. 50.
30. HUTTON, F. W. Index faunæ Novæ Zealandiæ. pp. viii + 372, London, Dulau & Co., 1904 (Myr. pp. 234-236).

31. KINCAID, T. A new species of *Polyxenus*. Ent. News Philad. iv (1898), pp. 192 & 193.
32. KRAEPELIN, KARL. Catalogue des Scolopendrides des collections du Museum d'histoire naturelle de Paris (Collect. du Mus. déterminée par M. le Prof. K. Kraepelin, et coll. H. W. Brölemann) i. Bull. Mus. Paris 1904, pp. 243-253, 316-324.
33. LALOY, L. Insectes Arachnides et Myriapodes marins. La Nature xxxii, sem. i, pp. 154 & 155, 4 figg.
34. LAMPA, SVEN. Berättelse till kongl. Landtbruksstyrelsen angående verksamheten vid Statens Entomologiska, Anstalt under år 1902. Ent. Tidskr. xxiv, pp. 1-60, 1 fig.
35. LANKESTER, E. RAY. The structure and classification of the Arthropoda. Quart. J. Micr. Sci. (n. s.) xlvii, pp. 523-576. (Reprinted from Encyclopaedia Britannica xxv.)
Appendix. On the Movements of the Parapodia of *Peripatus*, Millipedes and Centipedes, pp. 577-582, 1 pl.
36. LAUTERBORN, R. Tracheenkiemen an den Beinen einer Perliden-Larve (*Taeniopteryx nebulosa* L.). Zool. Anz. xxvi, 1903, pp. 637-642, Abb. i.
Abstract: Zool. Zentrbl. xi, p. 291.
37. LEGER, L. & DUBOSCQ, O. La reproduction sexuée chez *Pterocephalus*. Arch. Zool. exp. Notes (4) i, ix, pp. 141-150, 11 figg. in text.
Abstract, Zool. Zentrbl. xi, pp. 190 & 191.
38. —. Nouvelles recherches sur les Grégaires et l'épithélium intestinal des Tracheates. Arch. Protistenk. iv, 1904, pl. 2, 11 figg. in text.
39. LIGNAU, N. Die Myriopoden der Pontus-Kusten von Kaukasus. Zapiski Novoross. Obsheh. xxv, pp. 82-148, 3 pls. Russian, German resumé, pp. 126-142.
Abstract: Zool. Zentrbl. xi, pp. 284 & 285.
40. LÜHE, M. Bau und Entwicklung der Gregarinen, 1 Teil. Die Sporozoen, die Wachstumsperiode und die ausgebildeten Gregarinen. Arch. Protistenk. iv, pp. 88-198, 2 Taf. 1 fig.
41. MOLISCH, H. Leuchtende Pflanzen. Eine physiologische Studie. Jena (G. Fischer) 1904, ix and 169 pp., 14 figg. in text and 2 pls. (Myr. pp. 47, 118 & 119.)
Abstract: Zool. Zentrbl. xi, pp. 420-422.
42. MORSE, M. The breeding habits of the Myriopod, *Fontaria indianæ*. Ohio Natural. iv, pp. 161-163.
43. ORTONEDA, VICENTE. Breve noticia acerca de los Miriápodos de la República del Ecuador conocidos hasta el día. Naranjito, 1901, 4 pp.
44. PAVESI, P. Esquisse d'une faune valdôtaine. Atti Soc. Ital. xliii, pp. 191-260 (Myr. pp. 249 & 250).
Abstract: Zool. Zentrbl. xi, p. 783.
45. PRENANT, A., BOUIN, P. & MAILLARD, L. Traité d'Histologie. i. Cytologie général et special, 977 pp., 791 figg., Paris 1904.
46. RIBAUT, H. Description de quatre nouvelles espèces françaises du genre *Julus*. Bull. Soc. hist. nat. Toulouse xxxvii, pp. 15-27, 11 figg. in text, 1904.
47. ROSSI, G. L. Ancora le critiche del Dr Silvestri (a proposito dei Diplopodi) pp. 1-11, 3 figg. in text. Napoli 1904.

48. SCHNEE, PAUL. Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur fauna der Insel Naura. Zool. Jahrb. Syst. xx, 1904, pp. 387-412. Myr. p. 406.
Abstract: Zool. Zentrbl. xi, pp. 652 & 653.
49. SILVESTRI, F. Myriopoda. Fauna Hawaiiensis iii, pp. 323-338, 2 pls.
50. —. Interno ad una nuova famiglia di Diplopodi Glomeroidea trovata in Liguria. Ann. Mus. Genova (3) i, pp. 60-64, 1904.
51. —. Critiche di lavori sull' anatomia dei Miriapodi ovvero intorno ad una certa risposta del Dr Giov. L. Rosssi. Redia i, pp. 281-293, 1904.
52. —. Contribuzione alla conoscenza dei Chilopodi. I. Nuovi generi di *Scutigerae*. II. Nuove specie di *Paralamyctes*. T. c. pp. 253-258.
Abstract: J. R. Micr. Soc. 1944, p. 412.
53. —. Interno ad una nuova risposta del Dr G. L. Rossi. Portici 1904, 4 pp.
54. SINCLAIR, F. G. The Myriopoda of Cambridgeshire. Marr and Shipley Nat. Hist. Cambridgeshire, pp. 184-192.
55. STAMM, R. H. Om Musklermes befaestelse til der ydre Skelck hos Leddyrene. Danske Selsk. Skr. (7) ii, Myriapoder p. 148.
56. THEOBALD, FRED. First Report on Economic Zoology. London 1903. [Myr. pp. 15-86 & 105.]
57. —. Second Report on Economic Zoology, London 1904. [Myr. pp. 154-156.]
58. THOMAS, F. Altes und Neues über *Blaniulus guttulatus* Gerv. als Schädiger des Pflanzenbaues. Naturw. Zeitschr. Land. Forst. ii, pp. 287-292, 1 text fig.
59. VERHOEFF, CARL W. Gliederfüssler; Arthropoda. Bronn's Klassen und Ordnungen des Tier-Reichs. v, 2 Abth. Lief. 69-71, pp. 44-76, pls. vii-ix. Chilopoda.
60. —. Mitteilungen über die Gliedmassen der Gattung Scutigera (Chilopoda). SB. Ges. naturf. Berlin 1904, pp. 198-236.
61. —. Zur vergleichenden Morphologie und systematik der Japygidien, zugleich 2. Aufsatz über den Thorax der Insekten. Arch. Naturg. lxx, pp. 63-114, 3 pls.
Abstract: Zool. Zentrbl. xi, pp. 832-834, Zeitschr. wiss. Ins.-Biol. i, p. 140.
62. —. Über Tracheaten-Beine. VI. Aufsatz. Hüften und Mundbeine der Chilopoden. T. c. pp. 123-156, 2 pls.
Abstract: Zool. Zentrbl. xi, pp. 832-834, Zool. Jahresber. 1904, Arthropoda, p. 49.
63. —. Ueber die Genitalzon der Anamorphen und Scutigerien, nach Bau und Entwicklung. SB. Ges. naturf. Berlin 1904, pp. 239-242.
64. —. Ueber Gattungen der Spinnenasseln (Scutigerien). T. c. pp. 245-285.
— [See also WOLTERSTORFF, WILLY (68).]
65. —. Ueber vergleichende Morphologie des Kopfes niederer Insekten mit besonderer Berücksichtigung der Dermapteren und Thysanuren, nebst biologisch physiologischen Beiträgen. Acta Ac. German. lxxxiv, pp. 1-126, 8 pls.
Abstract: Zeitschr. wiss. Ins.-Biol. i, pp. 130 & 131.

66. VIRÉ, ARM. La faune souterraine du Puits de Padirac (Lot.). C.R. Ac. Sci. 1904 (1) pp. 826-828.
67. WILLIAMS, STEPHEN R. A restricted habitat of *Scutigera* *immaculata* (Newport) together with some remarks on the animal and its habits. Science xix, p. 210.
68. WOLTERSTORFF, WILLY. Beiträge zur Fauna der Tucheler Heide. Bericht über eine zoologische Bereitung der Kreise Tuchel und Schwetz im Jahre 1900. Schr. Ges. Danzig, Bd. 11, No. 1 & 2, pp. 140-234, 1 Taf., 5 figg.

II. BIOLOGY, SUBJECT-INDEX.

1. *Morphology and Classification.*

Morphology and relationship of the Diplopoda and Chilopoda, LANKESTER (35).

Morphology of the copulatory appendages in *Odontopyge*, BRÖLEMANN (12): in *Acanthiulus*, *Spirobolus*, *Rhinocricus*, *Trigoniulus*, *Spirobolellus*, BRÖLEMANN (14).

Morphology of the Tömösvary-organ of the *Glomeridæ*, HENNINGS (28).

Morphology and muscles of the coxæ, sternites, maxillipedi and maxillæ of *Chilopoda*, VERHOEFF (62), of tarsus of *Chilopoda*, VERHOEFF (65).

Morphology of the genital zone of the *Chilopoda*, *Anomorpha* and *Scutigera*, VERHOEFF (63).

Segmentation and armature of the antennæ and legs in various stages of *Scutigera*, VERHOEFF (60 & 64).

Segmentation of legs of *Myriopoda* and their muscles and homology with the legs of the other Arthropods, BÖRNER (5).

Remark on the morphology of the antennæ in *Chilopoda* and *Diplopoda*, HENNINGS (29).

Insertion of muscles, brief note, STAMM (55).

Hearing-organs of the *Diplopoda* and *Chilopoda*, HENNINGS (29).

Morphology of the brain in *Lithobius* and *Julus*, HALLER (27).

Histology of the intestine of *Julus* and *Polyxenus*, LÉGER & DUBOSCQ (38).

Homology of the body segments in *Scolopendridæ* and *Japygidæ*, VERHOEFF (61); of the mouth parts in *Chilopoda* and *Insecta*, VERHOEFF (61).

Homology of the tracheal-gills of *Teniopterix* with the coxal sacs of *Diplopoda*, LAUTERBORN (36).

Criticism on some points of the morphology of the *Myriopoda*, SILVESTRI (51 & 53), ROSSI (47).

2. *Physiology.*

Rate of propagation of the nervous impulse in the ventral nerve-cord; Reflex functions of the ventral nerve-cord in *Chilopoda* and *Diplopoda*, CARLSON (16).

On the movements of the legs in *Chilopoda* and *Diplopoda*, LANKESTER (35).

Experiment on the hearing organ of the *Myriopoda* (*Chilopoda* and *Diplopoda*), HENNINGS (29); Tömösvary-organ of the *Glomeridæ*, HENNINGS (28).

Venom of *Scolopendra morsitans*, experiments as to effects of; BRIOT (8).

Luminosity of *Myriopoda* refer, MOLISCH (41); of a Chilognate, ibidem; of *Geophilus*, BROCKHAUSEN (9).

Radio-activity and luminescence, DUBOIS (22).

3. *Reproduction and Development.*

Embryo development in *Chilopoda* extract, VERHOEFF (59).

Eggs and development of the *Glomeris marginata*, HENNINGS (29).

Development of the genital zone of the *Chilopoda*, *Anomorpha* and *Scutigera*, VERHOEFF (63).

Centrosome and centrioles of the male germinal cells of *Myriopoda* (*Geophilus*), BOUIN (7).

Constitution of the achromatic figure of the cytodiaeresis of *Geophilus linearis*, BOUIN (7).

Spermatogenesis of *Scolopendra* and *Lithobius*, PRENANT, BOUIN, MAILLARD (45).

Ovocyte of *Julus terrestris*, PRENANT, BOUIN, MAILLARD (45).

4. *Bionomics.*

Habitat of *Scutigera*, WILLIAMS (67).

Marine *Myriopoda*, LALOY (33).

Breeding season of *Myriopoda* in Cambridgeshire, SINCLAIR (54).

Breeding habits, *Fontaria indianæ*, MORSE (42).

Migration of *Diplopoda*, SINCLAIR (54).

Aliment, habitat, coupling, ovoposition and moult of the *Glomeris marginata*, HENNINGS (29).

Damages of the *Diplopoda* to herbaceous plants, THEOBALD (56 & 57), THOMAS (58).

Myrmecophily of *Blaniulus*, DONISTHORPE (21).

Venom of *Myriopoda*, COUPIN (20).

Parasites of *Diplopoda*, *Protozoa*, Gregarines, LÉGER & DUBOSCQ (38) of *Scolopendra*, LÉGER & DUBOSCQ (37); parasites of *Myriopoda*, Gregarines, LÜHE (40).

5. *Miscellaneous.*

Generic and specific character in *Scutigera*, VERHOEFF (64).

Monstrosity in some segments of an *Himantarium gabrielis*, BRÖLEMANN (11).

Review of literature for 1904, GIESBRECHT & MAYER (26).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

Localities for *Scolopendridæ* in Paris Museum, KRAEPELIN (32).

(1) *Arctic and Antarctic.*

Scandinavia, Russia, Siberia, ATTEMS (2).

(2) *Europe and Mediterranean Islands.*

Russia, list, ATTEMS (2).

Scandinavia, list, ATTEMS (2).

Norway, *Chilopoda*, *Symphyla*, *Diplopoda*, ELLINGSEN (23).

England, enumeration of described species of *Myriopoda*, SINCLAIR (54); Cambridgeshire *Myriopoda*, SINCLAIR (54).

Roumelia, *Diplopoda* n. sp., ATTEMS (3).

- Bosnia, *Chilopoda* and *Diplopoda* var. and n. sp., ATTEMS (3).
 Moravia, cavern fauna, ABSOLON (1).
 Austria, *Diplopoda* n. sp., ATTEMS (3).
 Swiss Alps, distribution of some *Diplopoda*, CARL (15).
 Dalmatia, *Chilopoda* and *Diplopoda* n. sp., ATTEMS (3).
 Italy, Val d'Aosta, PAVESI (44), North Italy, *Diplopoda*, ATTEMS (3).
 Caucasus, *Chilopoda*, *Symphyla* and *Diplopoda* of the Pontus-littoral, LIGNAU (39).
 France, Garonne, *Julidæ* n. spp., RIBAUT (46), cavern *Diplopoda*, VIRÉ (66) & FLORENTIN (25).
 Monaco, list of the *Chilopoda* with description of n. sp., BRÖLEMANN (11).

(3) *Asia (Palæarctic).*

- Siberia, list, ATTEMS (2).
 Central Asia, list of described species and n. sp. of *Chilopoda* and *Diplopoda*, ATTEMS (4).
 China, *Scutigeridæ*, VERHOEFF (64).
 Japan, *Scutigeridæ*, VERHOEFF (64).

(4) *India and Further India.*

- Indo-China, Polydesmoidea, BRÖLEMANN (10).
 Ceylon, *Scutigeridæ*, VERHOEFF (64).

(5) *Malay Peninsula and Archipelago.*

- N. Guinea, *Scutigeridæ* n. sp., VERHOEFF (64).
 Java, *Scutigeridæ* n. sp., VERHOEFF (64).
 Bismarck Archipelago, *Scutigeridæ* n. sp., VERHOEFF (64).

(6) *Africa.*

- East-Africa, *Scutigeridæ* n. sp., VERHOEFF (64).
 Abyssinia, enumeration of the *Chilopoda* and *Diplopoda*, BRÖLEMANN (12).
 Eritrea, *Chilopoda* and *Diplopoda* n. sp., BRÖLEMANN (12).
 Kamerun, *Scutigeridæ* n. sp., VERHOEFF (64).

(7) *North America.*

- North-Western North America, *Chilopoda* and *Diplopoda*, n. spp., COOK (19).
 Washington, *Polyxenus* n. sp., KINCAID (31).
 California, N. Mexico, Austria, Ithaca, n. spp. of *Chilopoda*, CHAMBERLIN (17).

(8) *South and Central America and West Indies.*

- Ecuador, Enumeration of the *Chilopoda* and *Diplopoda* described until 1901, ORTONEDA (43).
 Guatemala, *Chilopoda* and *Diplopoda*, BRÖLEMANN (13).
 Haiti, *Scutigeridæ* n. sp., VERHOEFF (64).

(9) *Australasia.*

- Australia, *Scutigeridæ*, VERHOEFF (64).

(10) *Atlantic Islands.*

Bermudas, *Chilop.* and *Dipl.* cit. and 1 n. sp. *Chilop.*, CHAMBERLIN ().

(11) *Indian Ocean Islands.*

(Vacant.)

(12) *Pacific Ocean Islands.*

Sandwich Ids., *Myriopoda*, n. spp., SILVESTRI (49).

Marschal Ids., *Myriopoda*, SCHNEE (48).

B. GEOLOGICAL.

Lancashire Coal measures, 3 spp. mentioned, BOLTON, Tr. Manchester Geol. Soc. xxviii, p. 648.

IV. SYSTEMATIC INDEX†.

{See also ATTEMS (2), CARL (15), ELLINGSEN (23), FLORENTIN (25), HUTTON (30), KRAEPELIN (32), LAMPA (34), ORTONEDA (43), SINCLAIR (54).

CHILOPODA.

Analytical key to the orders of Chilopoda; COOK, Harriman Alaska Exp. viii, p. 71.

NOTOSTIGMATA.

Ordo SCUTIGEROMORPHA.

Schizotarsi (= *Scutigermorpha*), p. 71; COOK, Harriman Alaska Exp. viii.

Ballonema n. gen. (*Scutigeridae*), p. 257; VERHOEFF, SB. Ges. naturf. Berlin 1904.

B. gracilipes, N. Guinea (German), p. 261; VERHOEFF, t. c.

Ballonemini n. trib. (*Scutigeridae*), p. 257; VERHOEFF, t. c.

Parascutigera n. gen. (*Scutigeridae*), p. 257; VERHOEFF, t. c.

P. dahli, Bismark Arch. p. 263; VERHOEFF, t. c. n. sp.

Pselliophora n. gen. (*Scutigeridae*), p. 259; VERHOEFF, t. c.

P. annuligera, German East-Africa, p. 225, *pulchritarsis*, p. 229, Haiti; VERHOEFF, t. c. n. spp.

Pselliophorinae n. subfam. (*Scutigeridae*), p. 257; VERHOEFF, t. c.

Scutigera defin., p. 258; VERHOEFF, t. c.

S.; limbs and their armature, details of their structure and variation in various species; VERHOEFF, t. c. pp. 198-236.

S. aethiopica, Erythrea, p. 109, pl. i, fig. 1; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.

S. lincei, Guatemala, p. 189; BRÖLEMANN, Bull. Soc. zool. France xxix.

Scutigeridae, characters of systematic value, n. subfam. tribes, gen. and spp.; VERHOEFF, SB. Ges. naturf. Berlin 1904, pp. 245-285.

Scutigerides n. gen. (*Scutigeridae*); SILVESTRI, Redia i, p. 253.

† Where the character of a reference is not indicated the words "description" or "descriptive notes" are to be understood.

- S. transvalicus*, Transvaal, p. 253; SILVESTRI, t. c. **n. sp.**
Scutigerina n. gen. (*Scutigeridae*), p. 254; SILVESTRI, t. c.
S. weberi, Cape Colony, p. 254; SILVESTRI, t. c. **n. sp.**
Scutigerina n. subfam. (*Scutigeridae*), p. 256; VERHOEFF, SB. Ges. naturf. Berlin 1904.
Scutigerini n. trib. (*Scutigeridae*), p. 258; VERHOEFF, t. c.
Sphendononema n. gen. (*Scutigeridae*), p. 259; VERHOEFF, t. c.
S. camerunense, Kamerun, p. 281; VERHOEFF, t. c. **n. sp.**
Thereuonema n. gen. (*Scutigeridae*), pp. 258-268; VERHOEFF, t. c.
T. n. subgen. of *T.* for *T. tuberculata* and *maculata*, p. 275; VERHOEFF, t. c.
T. rubrolineata, Ceylon, p. 268, *maculata*, Adelaide (Australia), p. 269, *tuberculata*, China, Japan, p. 269; VERHOEFF, t. c.
T. amokiana, Eastjava, p. 272; VERHOEFF, t. c. **n. sp.**
Thereuopoda n. subgen. of *Thereuonema* for *rubrolineata*, *longicornis*, *clunifera*, *amokiana n. sp.*, p. 275; VERHOEFF, t. c.

PLEUROSTIGMATA.

Ordo LITHOBIOMORPHA.

- Henicops fulvicornis*, Erythrea, p. 112; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
Lamyetes fulvicornis var. *hawaiiensis*, Hawaii, p. 325, pl. xi, figg. 1 & 2; SILVESTRI, Fauna Hawaiiensis iii, **n. var.**
L. heterotarsus, Hawaii, p. 325, pl. xi, figg. 3 & 4; SILVESTRI, t. c. **n. sp.**
Lithobius cacodontus, Ara-bel, Sary-bel, p. 116, *jugorum*, Kubergentey-Pass etc. p. 117; ATTEMS, Zool. Jahrb. Syst. xx, **n. spp.**
L. centurio, Las Vegas, p. 651, *cockerelli*, New Mexico, p. 652, *fungiferopes*, Ithaca, p. 652, *euthus*, Austin, p. 652, *navigans*, Bermudas, p. 653; CHAMBERLIN, P. Ac. Philad. lvi, **n. spp.**
L. curtipes, pp. 86 & 127, pl. i, figg. 1 & 2, *crassipes*, p. 87, figg. 3 & 4, *elegans*, p. 89, pl. i, figg. 8 & 9, *anodus* (?), pp. 92 & 129, pl. i, figg. 10-12, *viriatius*, pp. 93 & 129, pl. i, figg. 13 & 14, *forficatus*, p. 95, pl. i, figg. 15 & 16, *Kaucasus*; LIGNAU, Zapiski Novoross. Obsch. xxv.
L. curtipes, subsp. *turkestanicus*, Turkestan; ATTEMS, Zool. Jahrb. Syst. xx, p. 119, pl. viii, fig. 2.
L. erythrocephalus, Monaco, p. 11, *nodulipes nicoensis*, n. var. Monaco, p. 12; BRÖLEMANN, Bull. Mus. Monaco No. 15.
L. forficatus, morphology of the brain, HALLER, Arch. mikr. Anat. lxx.
L. hawaiiensis, Kauai, p. 324; SILVESTRI, Fauna Hawaiiensis iii.
L. intrepidus, p. 4, *nigrifrons*, p. 5, *crassipes*, Norway, p. 6; ELLINGSEN, Forh. Selsk. Christian. 1903, No. 6.
L. magnus, p. 118, *magnus* var. *pleodonta* n. var. Przewalsk, p. 118; ATTEMS, Zool. Jahrb. Syst. xx.
L. pusillus key of the subspecies *pusillus*, *denticulatus*, *calcivagus*, p. 180; ATTEMS, Arch. Naturg. lxx.
L. pusillus, Erythrea, p. 111; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
L. pusillus n. subsp. *denticulata*, p. 179, Dalmatia; ATTEMS, Arch. Naturg. lxx.
L. stejnegeri, Bering and Cooper Islands, p. 71; COOK, Harriman Alaska Exp. xiii.
L. vehemens, pp. 88 & 128, pl. i, figg. 5-7, *liber*, pp. 88 & 129, *Kaucasus*; LIGNAU, Zapiski Novoross. Obsch. xxv, **n. spp.**
Paralamyetes asperulus, Constantia, p. 256, *weberi*, p. 256, Knysna, *andinus*, p. 257, Punta de Vacas, Las Cuevas (Argentina); SILVESTRI, Redia i, **n. spp.**

Ordo SCOLOPENDROMORPHA.

[See also KRAEPELIN (32).]

- Cryptops* (? *Bottegii*) Erythrea, p. 114; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
C. anomalans, pp. 97 & 130, *hortensis* (?), pp. 98 & 130, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
Otocryptops, p. 73; COOK, Harriman Alaska Exp. viii.
Otostigmus denticulatus, Guatemala, p. 189; BRÖLEMANN, Bull. Soc. zool. France xxix.
Rhysida paucidens, Erythrea, p. 113; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
Scolopendra cingulata, pp. 96 & 130, Caucasus; LIGNAU, Zapiski Novoross. Obshch. No. xxv.
S. morsitans, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.
S. valida, Erythrea, p. 112; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
S. subspinipes, pl. xlii, fig. 3; LANKESTER, Quart. J. Micr. Sci. xlvii.
Scolopocryptops sexspinosus, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.

Ordo GEOPHILOMORPHA.

- Escaryus*, analytical key to the species and def.; COOK, Harriman Alaska Exp. viii, p. 76.
E. emend.; ATTEMS, Zool. Jahrb. Syst. xx, p. 124.
E. retusidens Przewalsk, p. 121, pl. viii, figg. 4-6; ATTEMS, t. c. **n. sp.**
E. retusidens var. *oligopus* n. var., Aksu-Thal, p. 122; ATTEMS, t. c.
E. sibiricus, Wladiwostok, p. 122, pl. viii, fig. 3; ATTEMS, t. c.
Geophilidae, analytical key to the West American genera; COOK, Harriman Alaska Exp. viii, p. 74.
Geophiloidea, analytical key to the North-west American families of; COOK, t. c. p. 73.
Geophilus sp. nec *electricus*, luminescence; BROCKHAUSEN, pp. 163 & 164, Jahresber. Westfal. Ver. xxxi.
G. alaskanus, Alaska, p. 75; COOK, Harriman Alaska Exp. viii.
G. flavidus, p. 98, *ferrugineus*, p. 100, *caucasicus*, p. 101, pl. i, figg. 18-22, *longicornis* var. *austriaca*, p. 101, pl. i, fig. 27, Caucasus, LIGNAU, Zapiski Novoross. Obshch. xxv.
G. flavidus setosus, pp. 99 & 130, pl. i, fig. 17, *flavidus vestitus*, pp. 99 & 131, pl. i, fig. 25, Caucasus, LIGNAU, t. c. **n. var.**
G. linearis, constitution of the centrosome and of the achromatic figure of the cytodiaeresis in male germinal cells, pp. lxxiii-lxxxviii, figg. 1-6; BOUIN, Arch. Zool. exp. (4) ii.
G. mediterraneus, Monaco, p. 9; BRÖLEMANN, Bull. Mus. Monaco No. 15.
G. regnans, S. California, p. 654, *cayuga*, Ithaca, p. 655; CHAMBERLIN, P. Ac. Philad. lvi.
G. richardi, Monaco, p. 9; BRÖLEMANN, Bull. Mus. Monaco No. 15, **n. sp.**
Himantarium tenuipose, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.
Lamnonyx spissus, p. 326, pl. xi, figg. 5-7; SILVESTRI, Fauna Hawaiiensis iii.
Linotenoidae, p. 73; COOK, Harriman Alaska Exp. viii.
Linotania rubelliana, California, p. 656; CHAMBERLIN, P. Ac. Philad. lvi, **n. sp.**
Mecistocephalus, p. 74; COOK, Harriman Alaska Exp. viii.
M. anomalus, California, p. 655; CHAMBERLIN, P. Ac. Philad. lvi.
M. attenuatus, North-western North America, p. 74; COOK, Harriman Alaska Exp. viii.

- M. edentulus* Przewalsk, p. 119, pl. viii, figg. 7-12; ATTEMS, Zool. Jahrb. Syst. xx, n. sp.
- M. punctifrons*, Erythrea, p. 118; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.
- Mesocanthus albus minutus*, Erythrea, p. 116; BRÖLEMANN, t. c.
- M. porosus*, Turkestan, p. 118; BRÖLEMANN, t. c.
- Orphnæus brevilabiatus*, Erythrea, p. 115; BRÖLEMANN, t. c.
- Pectiniunguis*, key of the species; CHAMBERLIN, P. Ac. Philad. lvi.
- P. monterens*, California, p. 653; CHAMBERLIN, t. c.
- Schendyla mediterranea* n. subsp. *dalmatica*, Dalmatia, p. 180, pl. ix, figg. 2 & 3; ATTEMS, Arch. Naturg. lxx.
- S. montana monoeci* n. var., Monaco, p. 7; BRÖLEMANN, Bull. Mus. Monaco No. 15.
- S. nemorensis*, p. 5, fig. 1, *nemorensis* subsp. *mediterranea*, p. 6, figg. 5 & 6, *nemorensis mediterranea* var. *vizzavonæ*, p. 6, figg. 2 & 3, Monaco, *nemorensis* var. *carniolensis*, Carniola, p. 6, fig. 4; BRÖLEMANN, t. c.
- Schendylidæ*, analytical key to the North American genera; Cook, Harriman Alaska Exp. viii, p. 76.
- Scolioplanes acuminatus* var. *microdon* n. var., Bosnia, p. 181, pl. ix, fig. 1; ATTEMS, Arch. Naturg. lxx.
- S. crassipes*, p. 101, *acuminatus*, p. 102, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
- Scotophilus illyricus*, Caucasus, p. 102; LIGNAU, t. c.
- Stigmatogaster arcis-herculis*, Monaco, p. 3; BRÖLEMANN, Bull. Mus. Monaco No. 15, n. sp.
- Stylolæmus*, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.
- Tomotenia chionophila*, North-western North America, p. 73; Cook, Harriman Alaska Exp. viii.

SYMPHYLA.

- Scolopendrella notacantha*, p. 103, *nivea*, p. 103, *immaculata*, p. 103, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
- Scutigrella immaculata*, habitat; WILLIAMS, Science xix, p. 210.

PAUROPODA.

(Vacant.)

DIPLOPODA.

Analytical key to the subclass of Diplopoda; Cook, Harriman Alaska Exp. viii, p. 50.

COLOBOGNATHA.

Colobognatha def.; Cook, Harriman Alaska Exp. viii, p. 62.

Ordo POLYZONOIDEA.

Polyzoniidæ, analytical key to the genera of *Polyzoniidæ*; Cook, Harriman Alaska Exp. viii, p. 62.

Hypozoneum n. gen. (*Polyzoniidæ*), p. 62; Cook, t. c.

H. anurum, Washington, p. 63, pl. v, figg. 1a-1d; Cook, t. c. n. sp.

CHIOLOGNATHA.

Analytical key to the West American orders of *Chilognatha*; COOK, Harriman Alaska Exp. viii, p. 51.

Ordo PSELAPHOGNATHA.

- Polyxenus hawaiiensis*, Ohau, p. 327, pl. xi, figg. 8-13; SILVESTRI, Fauna Hawaiiensis iii, **n. sp.**
P. ponticus, Caucasus, pp. 104 & 131; LIGNAU, Zapiski Novoross. Obshch. xxv, **n. sp.**
P. pugetensis, Alaska and State of Washington, p. 192; KINCAID, Ent. News Philad. iv (1898), **n. sp.**

Ordo LIMACOMORPHA.

(Vacant.)

Ordo ONISCOMORPHA.

- Doderidæ* **n. fam.** p. 61; SILVESTRI, Ann. Mus. Genova (3) i.
Doderia **n. gen.** p. 62; SILVESTRI, t. c.
D. genuensis, Genova, p. 63; SILVESTRI, t. c.
Gervaisia costata var. *genuina* = (*Trachysphæra schmidtii* Hell. = *hyrtlîi* Wankel); ABSOLON, p. 63, Vestnik. Klub. Prostejove ii.
Glomeris marginata, habitat, coupling, ovoposition, eggs, development, moults, enemies, pp. 251-256; HENNINGS, Biol. Centrbl. xxiv.
G. piccola, Caucasus, pp. 104-131, pl. i, figg. 23-25; LIGNAU, Zapiski Novoross. Obshch. xxv.

Ordo CÆLOCHETA.

Sub-ordo CHORDEUMOIDEA.

- Chordeuma silvestre*(?), Caucasus, pp. 107 & 132; LIGNAU, Zapiski Novoross. Obshch. xxv.
Craspedosoma sp.?, Caucasus, pp. 107 & 132; LIGNAU, t. c.
Fagina **n. subg.** of *Heterolatzelia*; ATTEMS, Arch. Naturg. lxx, p. 182.
Heterolatzelia (Fagina) silvatica, Bosnia, p. 182, pl. ix, figg. 6-12; ATTEMS, t. c. **n. sp.**
Tianella **n. gen.** (*Chordeumidæ*); ATTEMS, Zool. Jahrb. Syst. xx, p. 126.
T. fastigata, Przewalsk, p. 127, pls. ix, xix-xxvi; ATTEMS, t. c. **n. sp.**

Ordo MONOCHETA (STEMMATOJULOIDEA).

(Vacant.)

Ordo MEROCHETA (POLYDESMOIDEA).

Analytical key to West American families of *Merocheta*; COOK, Harriman Alaska Exp. viii, p. 52.

- Aporodesmus* **n. gen.** (*Cryptodesmidæ*), p. 327; SILVESTRI, Fauna Hawaiiensis iii.
A. wallacei, Hawaii, p. 328, pl. xi, figg. 14-17; SILVESTRI, t. c. **n. sp.**
Chelodesmida, analytical key to the West American genera; COOK, Harriman Alaska Exp. viii, p. 55.

Chonaphe n. gen. (*Chelodesmidae*), p. 56; COOK, t. c.

C. armata, Oregon, Washington, Idaho, p. 56, pl. iv, figg. 2a-2c, *eruca* Oregon, Washington, p. 57; COOK, t. c.

Fontaria indianæ, breeding habits; MORSE, Ohio Natural. iv, pp. 161-163.

Harpaphe n. gen. (*Chelodesmidae*), p. 59; COOK, Harriman Alaska Exp. viii.

H. haydeniana, Oregon, p. 59, pl. iv, figg. 4a-4c, *intaminata*, California, p. 60, COOK, t. c.

Holitys; COOK, t. c. p. 26.

Hybaphe n. gen. (*Chelodesmidae*), p. 58; COOK, t. c.

H. curtipes, State of Washington, p. 59; COOK, t. c. n. sp.

Isaphe n. gen. (*Chelodesmidae*), p. 57; COOK, t. c.

I. convexa, Idaho, p. 58, pl. iv, figg. 1a & 1b; COOK, t. c. n. sp.

Melaphe, n. name for *Oxyurus* C. Koch; COOK, t. c. p. 55.

Orthomorpha festiva, Siam, p. 4, pl. xiii, fig. 1, pl. xiv, figg. 4-8, and xv, figg. 24-27, *O. sp.* Cambodge, p. 6, pl. xiv, figg. 9-13, *paviei*, p. 8, pl. xiii, fig. 3, xiv, figg. 14-17, xv, figg. 28-32, *O. variegata*, Siam, p. 10, pl. xiii, fig. 3, xiv, figg. 18-22, xv, fig. 23, BRÖLEMANN, Mission Pavie iii.

Oxydesmus ferrugineus, Erythrea, p. 119; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.

Polydesmidae, analytical key to the North-west American genera; COOK, Harriman Alaska Exp. viii, p. 61.

Polydesmus, p. 61; COOK, t. c.

P. abchasius, Caucasus, pp. 106 & 132; LIGNAU, Zapiski Novoross. Obshch. xxv.

P. cerasinus, Oregon, Washington, p. 61; COOK, Harriman Alaska Exp. viii.

P. complanatus, key of the subsp. *complanatus*, *intermedius*, *illyricus*; ATTEMS, Arch. Naturg. lxx, pp. 181 & 182.

P. complanatus intermedius n. subsp., Franzenshöhe, p. 181, pl. ix, figg. 4 & 5; ATTEMS, t. c.

P. strongylosomoides, p. 125, pl. ix, figg. 16 & 17, *almassyi*, p. 125, pl. ix, figg. 13-15, *stummeri*, Przewalsk, p. 126, pl. ix, fig. 18; ATTEMS, Zool. Jahrb. Syst. xx, n. spp.

Platyrhacus bouvieri, Siam, p. 2, pl. xv, figg. 33-36; BRÖLEMANN, Mission Pavie iii.

P. nitidus, Guatemala, p. 190; BRÖLEMANN, Bull. Soc. zool. France xxix.

Scytonotus, p. 61; COOK, Harriman Alaska Exp. viii.

Strongylosoma andreinii, Erythrea, p. 123, pl. i, figg. 5-7; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv, n. sp.

S. andreinii subsp. *Dongolliana*, Erythrea, p. 126, pl. i, figg. 8-10; BRÖLEMANN, t. c. n. subsp.

S. kordylamythrurn, Caucasus, pp. 106 & 132, pl. i, fig. 28, pl. ii, figg. 29-34; LIGNAU, Zapiski Novoross. Obshch. xxv.

S. magretti ugrianum, Erythrea, p. 120; BRÖLEMANN, pl. i, figg. 3 & 4, Bull. Soc. ent. Ital. xxxv, n. var.

Xystodesmidae def.; COOK, Harriman Alaska Exp. viii, p. 52.

Xystocheir n. gen. (*Xystodesmidae*), p. 53; COOK, t. c.

X. furcifer, California, p. 54, *dissuta*, California, p. 55; COOK, t. c.

X. obtusa, California, p. 53, pl. iii, figg. 1a-1c, *acuta*, California, p. 54; COOK, t. c. n. spp.

Ordo ZYGCHETA (JULOIDEA, s. s.).

Zygocheta, def.; COOK, Harriman Alaska Exp. viii, p. 69.

Juloidea, experiences on the ventral nerve-cord; CARLSON, J. exp. Zool. i.

Blaniulus, myrmecophil habit; DONISTHORPE, Ent. Rec. xv, p. 11.

Blaniulus pulchellus (?), Caucasus, pp. 115 & 139; LIGNAU, Zapiski

Novoross. Obshch. xxv.

- B. guttulatus*, injurious to herbaceous plants, pp. 281-292; THOMAS, Naturw. Zeitschr. Land. Forst. ii.
- Brachyiulus unilineatus hercules*, Caucasus, pp. 111 & 136; LIGNAU, Zapiski Novoross. Obshch. xxv.
- B. wolterstorffi*, Germany; VERHOEFF, Schr. Ges. Danzig xi, p. 220, **n. sp.**
- B. (Chromatoiulus) lictor*, Eastromelia, p. 184, pl. ix, figg. 13-16; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- B. (Microbrachyiulus) varibolinus*, Variboli, p. 185, pl. ix, figg. 21 & 22; ATTEMS, t. c. **n. sp.**
- Cylindroiulus brolemanni* Franzenshöhe & Noctitalg, p. 191, pl. x, figg. 56-58, *pollicaris*, Lübek, p. 194, pl. x, figg. 53-55; ATTEMS, t. c.
- C. zinalensis* Rothenb. n. subsp. *arulensis*, p. 193, pl. x, figg. 50-52; ATTEMS, t. c.
- Diplopoiulus luscus*, Hawaii, p. 338, Fauna Hawaiensis iii.
- Femoriferus n. subg.* of *Julus*; ATTEMS, Arch. Naturg. lxx, p. 189.
- Hylopachyiulus n. subg.* of *Pachyiulus*; ATTEMS, t. c. p. 183.
- Isobates* (?) sp., Central Asia, p. 128; ATTEMS, Zool. Jahrb. Syst. xx.
- Julus bellus*, pp. 107 & 132, pl. ii, figg. 35-39, *placidus*, pp. 108-123, pl. ii, figg. 40-43, *ruber*, pp. 109-134, pl. ii, figg. 44-48, *curvicaudatus*, pp. 110 & 135, pl. ii, figg. 49-53, *litoreus*, pp. 112 & 137, pl. ii, fig. 54, pl. iii, figg. 55-58, Caucasus; LIGNAU, Zapiski Novoross. Obshch. xxv.
- J. pulchellus*, injurious to potatoes, etc., pp. 86 & 105, THEOBALD, First Report on Economic Zoology, p. 155 Second Report on Economic Zoology.
- J. terrestris*, ovocyte, p. 851; PRENANT, BOUIN, etc., Traité d'histologie: morphology of brain, HALLER, Arch. mikr. Anat. lxxv.
- J. terrestris*, Caucasus, p. 113, pl. iii, figg. 59-64; LIGNAU, Zapiski Novoross. Obshch. xxv.
- J. (Cylindroiulus) chalandei*, Garonne, p. 5, 3 figg., *lignicola*, Garonne, p. 7, 2 figg.; RIBAUT, Bull. Soc. hist. nat. Toulouse 1904, **n. spp.**
- J. (Femoriferus) fimbriatus*, Dalmatia, p. 189, pl. x, figg. 43-46; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- J. (Leptoiulus) vagabundus*, Croazia-Tirol, p. 186, *deubeli* n. subsp. *korongisius*, Siebenbürgen, p. 186, pl. ix, figg. 17, 18, 20, *montivagus*, Baden, p. 187, pl. ix, figg. 31-33, *montivagus* var. *elucens*, Tirol, p. 188, pl. x, figg. 34 & 35, *oribates*, Tirol, Austria, p. 188, pl. x, figg. 47-49; ATTEMS, t. c.
- J. (Leptoiulus) garumnicus*, Garonne, p. 2, 4 figg.; RIBAUT, Bull. Soc. hist. nat. Toulouse 1904, **n. sp.**
- J. (Leucoiulus) spinosus*, Garonne, p. 9, 4 figg.; RIBAUT, t. c. **n. sp.**
- J. (Microiulus) rebeli*, Eastromelia, p. 190, pl. x, figg. 36-40; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- J. (Pachyiulus) flavipes* (?), Caucasus, pp. 113-139, pl. iii, figg. 65-71; LIGNAU, Zapiski Novoross. Obshch. xxv.
- Pachyiulus (Hylopachyiulus) pygmaeus*, Bosnia, p. 183, pl. ix, figg. 23 & 24; ATTEMS, Arch. Naturg. lxx, **n. sp.**
- Parajulidae* def.; COOK, Harriman Alaska Exp. viii, p. 70.
- Parajulus alaskanus*, Alaska, p. 70, pl. v, figg. 4a-4h; COOK, t. c.
- P. fureifer*, Oregon, p. 70, pl. v, figg. 5a-5e; COOK, t. c.
- Schizophyllum n. var.*; VERHOEFF in Wolterstorff.

Ordo DIPLOCHÆTA.

Sub-ordo CAMBALOIDEA.

- Cambalidae*; SILVESTRI, Fauna Hawaiensis ii.
- Dimergonius aveburyi*, Maui, Haleakala, p. 330, pl. xi, figg. 19-21, *sharpi*, Maui, Haleakala, p. 330, pl. xi, figg. 22-27, *sharpi* var. p. 331,

Oahu, *shipleyi*, Maui, Haleakala, p. 332, pl. xi, fig. 28, *carpenteri*, Lanai, p. 332, pl. xi, figg. 29 & 30, *beddardi*, Maui, Haleakala, p. 333, pl. xi, figg. 31-33, *pococki*, Molokai Mts., p. 334, pl. xii, figg. 36-40, *sedgwicki*, Oahu, Waianae Mts., p. 334, pl. xii, figg. 41-46, *sinclairi*, Maui, Haleakala, p. 335, figg. 42-51, *lankesteri*, Kauai, Halemann, p. 336, pl. xii, fig. 52, *harmeri*, Molokai, p. 336, pl. xii, figg. 53-56, *perkinsi*, Maui, Haleakala, p. 337, pl. xii, figg. 57-62, *koebeleri*, Maui, Haleakala, p. 338, pl. xii, figg. 63-65; SILVESTRI, t. c. **n. spp.**

Sub-ordo SPIROSTREPTOIDEA.

Archispirostreptus pyrocephalus, pl. xlii, figg. 1 & 2; LANKESTER, Quart. J. Micr. Sci. xlvii.

Lophostreptus, key of the species, p. 145; BRÖLEMANN, Bull. Soc. ent. Ital. xxxv.

L. ereini, Erythrea, p. 147, pl. ii, figg. 24-26; BRÖLEMANN, t. c. **n. sp.**

Odontopyge, copulatory appendages, pp. 128-132; BRÖLEMANN, t. c.; characters of the African species described by Silvestri, Brölemann etc., Tableau compar. d. descr. d'Odontopyge publ. p. le Dr Silvestri.

O. sennæ, Erythrea, p. 140, pl. ii, figg. 16-23; BRÖLEMANN, t. c. **n. sp.**

O. severini, p. 132, pl. i, figg. 11 & 12, *vannutelli*, p. 137, pl. i, figg. 13 & 14, and pl. ii, fig. 15, *Odontopyge* sp., Erythrea; BRÖLEMANN, t. c.

Spirostreptus lugubris, Erythrea, p. 150, BRÖLEMANN, t. c.

S. (Scaphiostreptus) rodriguezi, Guatemala, p. 120, BRÖLEMANN, Bull. Soc. zool. France xxix.

Ordo ANOCHETA (SPIROBOLOIDEA).

Anocheta, def.; COOK, Harriman Alaska Exp. viii, p. 63.

Acanthiulus, def.; BRÖLEMANN, Ann. Soc. ent. France lxxii, pp. 469-476, pl. viii, figg. 5 & 6.

A. maindroni, copulatory appendages; BRÖLEMANN, l. c.

Onychelus **n. gen.** (*Spirobolidae*), p. 67; COOK, Harriman Alaska Exp. viii.

O. obustus, Colorado, p. 68, COOK, t. c. **n. sp.**

Rhinocricus, def.; BRÖLEMANN, Ann. Soc. ent. France lxxii, pp. 469-426, pl. viii, figg. 3 & 4.

R. (?), sp. Guatemala, p. 190, BRÖLEMANN, Bull. Soc. zool. France xxix.

R. chazaliei, copulatory append.; BRÖLEMANN, Ann. Soc. ent. France lxxii, pl. viii, fig. 3.

R. pugio, copulatory append.; BRÖLEMANN, t. c. pl. viii, fig. 4.

Spirobolidae, analytical key to the North American genera; COOK, Harriman Alaska Exp. viii, p. 64.

Spirobolellus cruentatus, copulatory append.; BRÖLEMANN, Ann. Soc. ent. France lxxii, pp. 471 & 474, pl. viii, figg. 9 & 10.

S., def.; BRÖLEMANN, t. c.

Spirobolus, def.; BRÖLEMANN, t. c. figg. 1 & 2.

S. marginatus, copulatory append.; BRÖLEMANN, t. c.

Trigoniulus, def.; BRÖLEMANN, t. c. figg. 7 & 8.

T. allaudi, copulatory append.; BRÖLEMANN, t. c. fig. 7.

T. Naresi, copulatory append.; BRÖLEMANN, t. c. fig. 8.

Tylobolus **n. gen.** (*Spirobolidae*), p. 65; COOK, Harriman Alaska Exp. viii.

Tylobolus deses, California, p. 65, pl. iii, figg. 3a-3h; COOK, t. c. **n. sp.**

T. hebes, California, p. 66, *uncigerus*, p. 67; COOK, t. c.

PROTOTRACHEATA. (ONYCHOPHORA.)

I. TITLES.

1. BOUVIER, E. L. Les œufs des Onychophores. Arch. Mus. Paris 1904, pp. 1-50, 9 figg. in text.
2. —. Sur les Péripates des Guyanes. Bull. Mus. Paris 1904, pp. 52-55.
3. —. *Peripatus belli* (espèce nouvelle de l'Equateur). T. c. pp. 56 & 57.
4. —. Sur les organes génitaux mâles du *Peripatus tholloni* Bouv. Bull. Soc. ent. France 1904, pp. 192 & 193.
5. COLLINGE, W. E. Non-operculate Pulmonata. Fasciculi Malayenses Zool. i, pp. 201 & 202, 3 pls.
Abstract, Zool. Zentrbl. xi, pp. 738-764 (Peripatidæ, p. 759).
6. GIESBRECHT, W. & MAYER, P. Arthropoda. Zool. Jahresber. 1904, 78 pp. [Prototracheata, p. 41.]
7. LANKESTER, E. RAY. The Structure and classification of the Arthropoda. Quart. J. Micr. Sci. (n. s.) xlvii, pp. 523-576. (Reprinted from Encyclopædia Britannica xxv.)
Appendix. On the Movements of the Parapodia of Peripatus, Millipedes and Centipedes, pp. 577-582, 1 pl.

II. BIOLOGY.

Structure of the eggs of Peripatidæ : general characters of the development and variations, origin of the yolk, phylogenetic evolution of eggs ; BOUVIER (1).

Morphology of the male genital organs of *Peripatus tholloni* ; BOUVIER, (4).

Morphology and relationship of the *Onychophora* ; LANKESTER (7).

On the movements of the Parapodia of Peripatus ; LANKESTER (7) ; COLLINGE (5).

Review of literature for 1904 ; GIESBRECHT & MAYER (6).

III. DISTRIBUTION.

Ecuador, *Peripatus belli* ; BOUVIER (3).

Guyana, *Peripatus* ; BOUVIER (2).

IV. SYSTEMATIC INDEX.

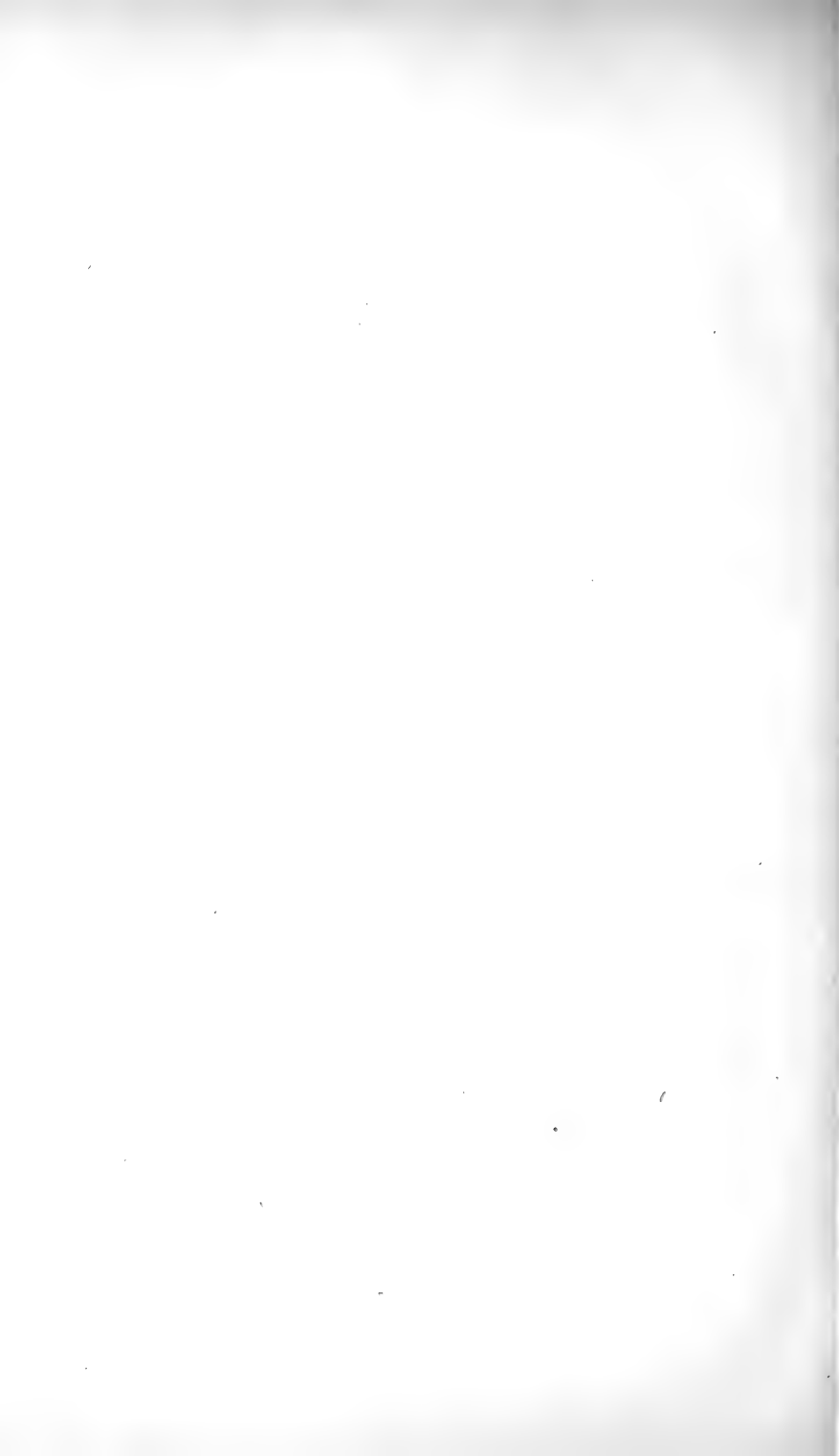
Protarthropoda, grade proposed for *Onychophora* ; LANKESTER (7).

Peripatidæ, structure of the eggs in various genera and species ; BOUVIER, Arch. Mus. Paris 1904, pp. 1-50.

Peripatus belli, Ecuador, p. 56 ; BOUVIER, Bull. Mus. Paris 1904, n. sp.

Peripatus capensis, movements of the Parapodia ; LANKESTER, Quart. J. Micr. Sci. (n. s.), xlvii, pp. 577, pl. xlii, figg. 4-9.

Peripatus tholloni, male genital organ, p. 192 ; BOUVIER, Bull. Soc. ent. France 1904.



XIII. INSECTA.

By D. SHARP.

CONTENTS.

| | Page | | Page |
|--|------|------------------------------------|------|
| INTRODUCTION | 3 | BIOLOGY— <i>continued</i> . | |
| I. TITLES | 6 | 3. Palæarctic region (a. | |
| II. BIOLOGY: SUBJECT-INDEX. | | collective) | 98 |
| Anatomy and Physiology | 82 | b. Europe(collective) | 99 |
| Ethology | 85 | c. British Islands | 99 |
| Development | 88 | d. North Europe, | |
| General Subjects:— | | Siberia | 104 |
| Variation & Teratology | 89 | e. Centr. & East. | |
| Hybrids | 90 | Europe | 104 |
| Colour | 90 | f. France | 106 |
| Protection | 90 | g. South. Europe and | |
| Resemblance | 91 | Mediterranean | 108 |
| Phylogeny, Evolution, | | h. Caucasus & West | |
| Hereditv | 91 | & Central Asia | 110 |
| Galls | 91 | 4. Africa | 110 |
| Insects & Flowers & Plants | 92 | 5. Madagascar, etc. | 113 |
| Collections, Preservation, | | 6. Tropical & East. Asia | 113 |
| Museums, Nomenclature | 92 | 7. Asiatic Archipelago | 115 |
| Bibliography | 92 | 8. Australia & Tasmania | 117 |
| Biography | 93 | 9. North America | 118 |
| Obituary Notices | 93 | 10. Central America | 121 |
| Economic Entomology | 94 | 11. Antilles | 122 |
| Faunistic:— | | 12. South America | 122 |
| General | 97 | Palæo-entomology | 124 |
| 1. Arctic & Antarctic | 97 | III. SYSTEMATIC INDEX. | 126 |
| 2. Insular, incl. N. Zealand | 97 | | |

(a) COLEOPTERA (incl. STREPSIPTERA).

| | Page | | Page | | Page |
|---------------------------|------|-------------------------|------|-------------------------|------|
| General | 127 | Mycetophagidæ | 148 | Cistelidæ | 169 |
| Cicindelidæ | 127 | Thorictidæ | 148 | Melandyridæ | 169 |
| Carabidæ | 128 | Dermostidæ | 148 | Lagriidæ | 169 |
| Halipidæ | 132 | Byrrhidæ | 148 | Anthicidæ, Pedi- | |
| Dytiscidæ | 132 | Parnidæ and | | lidæ | 169 |
| Gyrinidæ | 133 | Heteroceridæ | 148 | Rhipiphoridæ | 170 |
| Hydrophilidæ | 133 | Lucanidæ | 149 | Stylopidæ | 170 |
| Staphylinidæ | 133 | Passalidæ | 149 | Mordellidæ | 170 |
| Pselaphidæ | 139 | Scarabæidæ | 150 | Cantharidæ | 170 |
| Paussidæ | 144 | Buprestidæ | 158 | Ægialitidæ, Pyro- | |
| Scydmanidæ | 144 | Throscidæ (vacant) | | chroidæ, Pythi- | |
| Silphidæ | 144 | Eucnemidæ | 160 | dæ, Edemeridæ | 171 |
| Trichopterygidæ | 145 | Elateridæ | 160 | Curculionidæ | 171 |
| Scaphidiidæ | 145 | Rhipiceridæ and | | Scolytidæ | 182 |
| Histeridæ | 145 | Dascillidæ | 162 | Brenthidæ | 183 |
| Phalacridæ (vacant) | | Malacodermidæ | 162 | Anthribidæ | 183 |
| Nitidulidæ | 146 | Cleridæ | 163 | Cerambycidæ | 185 |
| Monotomidæ (vacant) | | Lymexylonidæ & | | Bruchidæ | 189 |
| Trogositidæ (vacant) | | Cupesidæ (vacant) | | Chrysomelidæ | 190 |
| Colydiidæ | 146 | Ptinidæ | 164 | Erotylidæ | 198 |
| Rhysodidæ | 147 | Bostrychidæ | 164 | Endomychidæ | 198 |
| Cucujidæ | 147 | Cioidæ | 165 | Coccinellidæ | 198 |
| Cryptophagidæ | 147 | Tenebrionidæ | 165 | Proterrhinidæ | 198 |
| Lathridiidæ | 147 | | | | |

(b) HYMENOPTERA.

| | Page | | Page | | Page |
|---------------------|------|------------------------|------|-------------------------|------|
| General | 199 | Hymenoptera | | Proctotrypidæ and | |
| Aculeata— | | parasitica | 218 | Pelecinidæ | 233 |
| Apidæ | 199 | Ichneumonidæ | 218 | Cynipidæ | 235 |
| Masaridæ, Ves- | | Braconidæ | 223 | Sessiliventes— | |
| pidæ, etc. | 207 | Evaniidæ | 225 | Cephidæ, Siri- | |
| Fossoria | 209 | Trigonalidæ (va- | | cidæ & Orys- | |
| Formicidæ | 214 | cant), Stepha- | | sidæ | 236 |
| Chrysidæ | 217 | nidæ | 226 | Tenthredinidæ | 236 |
| | | Chalcididæ | 226 | | |

(c) LEPIDOPTERA.

| | | | | | |
|------------------------|-----|------------------------|-----|------------------------|-----|
| General | 238 | Rhopalocera— | | Heterocera— | |
| Rhopalocera— | | Satyridæ | 246 | Noctuidæ, etc. | 265 |
| General | 238 | Erycinidæ, | | Geometridæ, | |
| Papilionidæ | 239 | Libytheidæ | 247 | Epiplemidæ, | |
| Pieridæ | 240 | Lycænidæ | 248 | Uraniidæ | 271 |
| Danaidæ and | | Hesperiidæ | 251 | Pyralidæ, Thy- | |
| Ithomiidæ | 241 | Heterocera— | | rididæ | 286 |
| Acraeidæ, Heli- | | Castniidæ (vacant) | | Pterophoridæ | 291 |
| coniidæ | 242 | Sphingidæ | 252 | Tortricidæ | 291 |
| Nymphalidæ | 242 | Sesiidæ | 253 | Tineidæ | 292 |
| Brassolidæ, | | Bombyces, etc. | 254 | | |
| Morphidæ, etc. | 245 | | | | |

(d) DIPTERA.

| | | | | | |
|-------------------------|-----|----------------------------|-----|-----------------------|-----|
| General | 297 | Stratiomyidæ, | | Syrphidæ | 306 |
| Cecidomyiidæ | 297 | Scenopinidæ | 303 | Conopidæ | 307 |
| Mycetophilidæ | 297 | Tabanidæ | 303 | Phoridæ, Termi- | |
| Chironomidæ | 298 | Leptidæ and The- | | toxiidæ | 307 |
| Culicidæ | 298 | reviæ | 304 | Estridæ | 308 |
| Simuliidæ, Bibio- | | Asilidæ, Mydaidæ | 304 | Muscidæ calyp- | |
| nidæ, Psycho- | | Bombyliidæ | 305 | tratæ | 308 |
| didæ | 302 | Acroceridæ | 305 | Muscidæ acalyp- | |
| Dixidæ, Blepharo- | | Empidæ | 305 | tratæ | 310 |
| ceridæ (vacant) | | Dolichopidæ | 306 | Pupipara | 312 |
| Tipulidæ | 302 | Platypezidæ and | | Aphaniptera | 313 |
| | | Pipunculidæ | 306 | | |

(e) HEMIPTERA OR RHYNCHOTA.

| | | | | | |
|------------------------|-----|---------------------------|-----|----------------------|-----|
| General | 315 | Hem.-Heteroptera— | | Hem.-Homoptera— | |
| Hemiptera-Hetero- | | Hydrometridæ, | | Fulgoridæ | 332 |
| ptera— | | Hebridæ | 321 | Flatides | 334 |
| Pentatomidæ | 315 | Reduviidæ etc. | 322 | Membracidæ | 335 |
| Coreidæ | 319 | Anthocoridæ, etc. | 324 | Cercopidæ | 335 |
| Lygæidæ and | | Polycetenidæ | 324 | Jassidæ | 336 |
| Pyrrhocoridæ | 320 | Capsidæ | 324 | Psyllidæ | 336 |
| Tingidæ | 321 | Saldidæ | 329 | Aphidæ | 337 |
| Berytidæ (vacant) | | Hydrocorisæ | 329 | Aleurodidæ | 338 |
| Aradidæ | 321 | Hem.-Homoptera— | | Coccidæ | 338 |
| Phymatidæ | 321 | Cicadidæ | 330 | Anoplura | 339 |

(f) NEUROPTERA s. l. (incl. THYSANOPTERA).

| | | | | | |
|-----------------------|-----|---------------------|-----|------------------------|-----|
| Trichoptera | 341 | Termitidæ | 345 | Ephemeridæ | 347 |
| Planipennia | 342 | Embiidæ | 346 | Odonata | 347 |
| Psocidæ | 344 | Perlidæ | 346 | Thysanoptera | 349 |
| Mallophaga | 344 | | | | |

(g) APTERA.

| | | | |
|---------------------|-----|----------------------|-----|
| Thysanura | 350 | Collembola | 350 |
|---------------------|-----|----------------------|-----|

(h) ORTHOPTERA.

| | | | | | |
|-----------------------|-----|--------------------|-----|---------------------|-----|
| Forficulidæ | 352 | Mantidæ | 355 | Locustidæ | 357 |
| Hemimeridæ | 353 | Phasmidæ | 355 | Acrididæ | 358 |
| Blattidæ | 353 | Gryllidæ | 357 | | |

INTRODUCTION.

THE Record of Insecta is not quite so extensive as that of last year, the number of titles being 1549 against 1716 for 1903. We have numerous important works to record.

HENNEGUY's general work, "Les Insectes," is up to date and on most points thoroughly reliable; it gives in a concise form the sort of information by the accumulation of which the progress of entomology is greatly affected; and is invaluable as a compendium of subjects that are often but little known to entomologists. A correction of an error in it as regards the question of coloration will be found in Bull. Soc. ent. France 1905, p. 146.

The subject of the Orders of Insects and their classification has been again discussed by HANDLIRSCH (657), HEYMONS (684); other papers on this point are given by BÖRNER (157) and KLAPÁLEK (815). Though there is a general consent that the Orders are more numerous than was formerly considered to be the case, the views of the authorities in other respects are very diverse.

SHIPLEY (1291) has proposed that the names of all Orders shall have an uniform termination, and if this result can be attained it will be very valuable. HANDLIRSCH has no less than twelve different terminations in the names of his 34 Orders. If Entomology is to be taught in schools of Zoology it is high time for the question of an uniform terminology for the complex taxonomy of Insecta to be discussed, and our thanks are due to Mr Shipley for his practical method of introducing the point.

DONCASTER (402) gives a preliminary paper on the parthenogenetic development of *Nematus*. Though the subject is of great interest, and will probably enlighten us as to the nature of the earliest processes of ontogeny, yet at present the information is too incomplete to warrant any conclusions.

MARCHAL (906) has given more fully the results of his work on germi-nogony—a term he wishes to replace that of embryonic dissociation. In this he is doubtless correct for the division takes place in the nuclei before the formation of a definite embryo. The work is of a most interesting and important nature.

Miss EMBLETON's memoir (450) on the anatomy and development of a Chalcid parasite of a scale-insect makes us acquainted with parts of a life-history of a remarkable character. Her accounts of the oogenesis and respiratory changes are particularly interesting, though only fragmentary.

The question of the number of segments from which the head is developed is discussed by RILEY (1173), who concludes that "sclerites originate from mechanical causes and do not necessarily have any relation to the primary segmentation." He admits six segments for the head. The same number is favoured by HOLMGREN (699), but it must be admitted that this conclusion is still hypothetical rather than demonstrated.

HILZHEIMER (686) gives a dissertation on the morphology of the labium and on the anatomy of the hypopharynx in *Hymenoptera*. DICKEL (379) resumes the question as to the nature of entoderm, taking the egg of the bee as his object; and SCHWANGART studies the same question in *Lepidoptera* (1259). VOSS (1461) contributes the first part of a study of the thorax of *Gryllus*, dealing with the skeleton; subsequent parts are to include the development of the wings, a subject that, as he justly remarks, has been greatly neglected in the lower Insects.

VERHOEFF (1435) discusses the morphology of leg and of hypopharynx ; and in a postscript announces that morphologists have hitherto been in error as to the maxillæ of Insects ; the labium being really the anterior, not the posterior, of the pairs of maxillæ. The same author gives an anatomical study (1434) of *Embiidæ*, treating them as a suborder of *Isoptera* ; and he also amplifies his views as to the structure of the thorax in *Hexapoda*. SCHAUDINN (1224) in his work on the life-history of a parasitic Protozoon, gives an account of the alimentary system and of the mode of feeding of *Culex pipiens*. He inclines to the opinion that the poisonous effect of its bite is due to the enzyme of a commensal fungus. VIGIER (1456) informs us that he has discovered an apparatus of accommodation in the eye of *Aeschna* for seeing at different distances.

RÖSSIG (1189) gives an interesting paper on the formation of galls of *Cynipidæ*, in the course of which he discusses the function of cœnocytes. HOUDARD (719) contributes an extensive paper on the structure of galls ; although predominantly botanical it treats of the determinants and is of considerable importance.

Some works on development have already been mentioned, but there are numerous others. The study of cuticula and ecdysis is now being pursued, and we have from PLOTNIKOW (1089) a valuable paper connected with the histology of the subject. ANGLAS (32) makes an important suggestion as to the relation of tracheæ to metamorphosis. BAUER (93) enlarges on the extreme changes that take place post-embryonically in the central nervous system.

DEGENER (358) discusses the changes that take place in the mesenteric region, showing that there is a special pupal epithelium, acting functionally for the digestion or partial digestion of the "yellow-body." POWELL (1104) gives information as to the formation of wings of *Coleoptera* etc. ; maintaining that wings are outgrowths of the pleuron or tergum, or both ; a conclusion which seems at present the only one consistent with all the evidence that has been obtained. KELLOGG has experimented on larvæ of *Lepidoptera* and confirms the previous observation of Oudemans that extirpation of the sex glands does not affect the development of the secondary sexual characters (781). In metamorphosis see also papers by DEWITZ (377, 378) on the physiology thereof, including coloration and chitinisation, in which he is inclined to extend the importance of enzyme action.

ASHMEAD has nearly or quite completed his classification of the *Hymenoptera* by a huge contribution (41) on the important group *Chalcidoidea*, which he considers includes 14 families. RAFFRAY has published a general work on the *Pselaphidæ* (1114), a family he has made of the first importance. It is a matter for regret that he has been obliged to defer the execution of a monograph for the present. DE MEIJERE'S paper on *Conopidæ* (933) makes a large addition to our previously meagre knowledge of the biology of this curious family of parasitic *Diptera*. BAKER (76) has given a catalogue of fleas complete to date, with information as to works and localities, and has revised the American forms.

Amongst the remarkable events of the year must be placed the discovery in France of a new genus of blind *Dytiscidæ* in a deep well fed by a subterranean spring, ABEILLE (3). This gives considerable support to the idea that Cave faunas have their origin in a hypogeal fauna of which we know little or nothing. An anomalous insect from the nest of a Termite has been described by BREDDIN & BÖRNER (173) and assigned to *Rhynchota* on somewhat unsatisfactory grounds.

Among faunistic work we find the largest contribution in MEYRICK'S Australian *Gelechiidæ* with 207 new species. He estimates the Australian Tineidæ at about 2,000 species—more probably an underestimate rather than the reverse. The publication in complete form of the results of the Harriman Alaska expedition is very welcome. The insects make two nice

volumes: MERRIAM (940). HUTTON's list of the fauna of New Zealand is a work for which we owe our thanks to the author and his collaborators (726): the Insects occupy about 150 pp. JAMES & LISTON *Anopheles* of India is remarkable for the figures of mosquitoes it contains (760). The third part of E. E. GREEN's beautiful work on the *Coccidæ* of Ceylon (620) is devoted entirely to the genus *Lecanium*. The fourth volume of GANGLBAUER's valuable work on European Coleoptera includes a statement of his views as to the classification of this Order (580).

BRÈTHES (181) records some valuable experiments as to the habits of Aculeate *Hymenoptera*; they tend to support Fabre's views as to the skill displayed in stinging the prey. ADLERZ has given a short account of the habits of *Methoca ichneumonoides*, which appear to be of the most extraordinary and unexpected nature (16).

The fact that has given rise to much surprise of the use of larvae by ants for the formation of their nests has now been confirmed by its discovery on the other side of the world, the Messrs Göldi having observed that *Camponotus senex* constructs its nests in this fashion in S. America: FOREL (532). The information given by JACOBSON & WASSILJEV (741) adds to our knowledge of the habits of *Termitidæ*, the founding of a nest of *Hodotermes* having been witnessed and described by JACOBSON. Miss FIELDE & Miss PARKER have given an account (508) of a series of instructive experiments as to the sense of hearing in ants. Perhaps the most interesting of Miss Fielde's papers on ants is that on their power of recognition (506). Mr DWIGHT PIERCE has an interesting ethological article on hypermetamorphic beetles and their hosts, with special reference to the very curious *Myiodites* (1086). SCHWARZ (1260) tells us of a grass that catches insects in great quantities in Cuba. M. PERRAUD (1031, 1032) as the result of experiments is able to state the conditions that should be realised to attract *Lepidoptera* to light.

PACKARD (1006), whose decease will be generally regretted, gives an account of the origin of pattern from the Lamarckian stand-point, and accompanies it with a very sensible criticism of the fashionable theories of mimicry. KUSNEZOV has published an article (849) calling attention to the undeveloped state of the study of the markings of Lepidopterous larvae. ENTZ has a long discussion on mimicry, but unfortunately, as it is in Hungarian few of us can profit by it (466). PIEPERS, who discusses the "tails" of Lepidopterous wings, apparently considers them as relicts from wings of larger size.

In the economic department Prof. J. B. SMITH's work (1315) on mosquito control is the most important production. DYÉ gives (444) a short and easily intelligible account of the relations of *Culicidæ* and their disease-dealing parasites.

Those who are interested in the—perhaps too extensive—chamber of horrors of entomology must not miss the New Congo floor maggot, DUTTON, TODD & CHRISTY (418).

The Polymorphism of ants is discussed by FOREL (525) & EMERY (452); the former of whom expresses a little doubt as to its causation. KELLOGG & BELL contribute a study of variation in 24 species of various Orders, and a discussion of general conclusions (783).

The naming of varieties is at present carried to a great extent, and we have not space to record them all, but we endeavour to point out all that appear to be of real importance. It may perhaps not be superfluous to add that the study of variation is by no means dependent for advancement on the naming of varieties.

I. TITLES.*

1. ABEILLE DE PERRIN, E. *Buprestides*. Bol. Soc. espan. iv, pp. 206-224. [*Coleoptera*.]
2. —. Description de deux nouveaux *Trechus* (*Anophthalmus*) de France. Bull. Soc. ent. France 1904, p. 198. [*Coleoptera*.]
3. —. Description d'un *Coléoptère* hypogé français. T. c. pp. 226-228.
4. —. Description de deux *Bathyscia* inédites des Basses-Pyrénées. T. c. pp. 242, 243. [*Coleoptera*.]
5. —. Diagnoses de trois *Coléoptères* français nouveaux. T. c. pp. 280-282.
6. ABSOLON, P. C. K. Descriptio systematica faunae subterraneae moravicae adhuc cognitae. Vestnik. Klub. Prostějov ii, 1900, pp. 60-68. [*Collembola*.]
Entirely in Moravian except the above translation of title.
7. —. Studie o jeskynních šupinuškách. Op. cit. iii, 1901, pp. 83-117. [*Collembola*.]
Entirely in Moravian.
8. ADAMS, C. F. Notes on and descriptions of North American *Diptera*. Kansas Univ. Sci. Bull. ii, No. 14, pp. 431-455.
9. —. On the North American species of *Siphonella*. Psyche xi, pp. 103, 104. [*Diptera*.]
10. —. Descriptions of new *Oscinidæ*. Ent. News Philad. xv, pp. 303, 304. [*Diptera*.]
11. ADELUNG, N. Eine neue *Ectobia*, *E. duskei* n. sp. (*Orthoptera Blattodea*) vom Bogdo, sowie einige Bemerkungen über russische Varietäten der *E. perspicillaris* Herbst (*livida* Fabr.). Horæ Soc. ent. Ross. xxxvii, pp. 127-137.
12. —. Blattodées (*Orthoptera*) rapportées par Mr le capitaine G. W. Kachovski de l'Abyssinie méridionale et des contrées limitrophes en 1898. Annuaire Mus. St. Petersb. viii, pp. 300-337, pl. xx.
13. ADLERZ, G. *Ceropales maculata* Fab. en parasitisk Pompilid. Bih. Svenska Ak. xxviii, Afd. iv, No. 14, 20 pp. [*Hymenoptera*.]
Omitted in 1902.
14. —. Utvecklingen af ett *Polistes*-samhälle. Ent. Tidskr. xxv, pp. 97-106. [*Hymenoptera*.]
15. —. Om cellbyggnad och tjufbin hos *Trachusa serratulæ* Panz. T. c. pp. 121-129. [*Hymenoptera*.]
16. —. La proie de *Methoca ichneumonides* Latr. Arkiv Zool. i, pp. 255-258. [*Hymenoptera*.]
17. AGNUS, A. N. Un nouvel insecte fossile du Carbonifère de Commeny. Naturaliste 1904, p. 29. [*Blattidæ*.]
18. AGREN, H. Lappländische *Collembola*. Arkiv Zool. ii, No. 1, 30 pp., 2 plates.

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

19. AIGNER-ABAFI, L. v. Wanderzüge des Distelfalters. Allg. Zeitschr. Ent. ix, pp. 6-9. [*Lepidoptera*.]
20. AITKEN, E. H. The enemies of butterflies. J. Bombay Soc. xvi, p. 156. [*Lepidoptera*.]
21. ALDRICH, J. M. The genus *Psilopus* of authors. Canad. Ent. xxxvi, pp. 246, 247. [*Diptera*.]
22. ALFKEN, J. D. Beitrag zur Insectenfauna der Hawaiischen und Neu-seelandischen Inseln. (Ergebnisse einer Reise nach dem Pacific. Schauinsland 1896-97.) Zool. Jahrb. Syst. xix, pp. 561-628, pl. xxxii. Abstract by VON LINDEN, Zool. Zentrbl. 1904, p. 211.
23. —. Neue palearktische *Prosopis*-Arten und -Varietäten. Zeitschr. Hym. Dipt. iv, pp. 322-327. [*Hymenoptera*.]
24. —. *Andrena frey-gessneri*, eine neue alpine *Andrena*-Art aus der Schweiz. Soc. ent. xix, p. 81. [*Hymenoptera*.]
25. ALPHÉRAKY, S. Quelques observations critiques sur le Catalogue des *Lépidoptères* de MM. Staudinger et Rebel, 1901. Rev. Russe Ent. iv, pp. 1-10.
In Russian.
26. ANDERSON, E. M. Catalogue of British Columbia *Lepidoptera*. Victoria, 8vo, 56 pp.
Issued by provincial Museum, Victoria.
27. [ANDRÉ, E. Species des Hyménoptères d'Europe et d'Algerie. Fasc. 85-89. See KIEFFER & MARSHALL (799) and KIEFFER (791).]
28. —. Voyage de feu Leonardo Fea dans l'Afrique occidentale. *Mutillidæ*. Ann. Mus. Genova xli, pp. 221-252. [*Hymenoptera*.]
29. —. Notice sur quelques *Mutillides* et *Thynnides* du Chili. Zeitschr. Hym. Dipt. iv, pp. 284-288, 305-319. [*Hymenoptera*.]
30. —. Examen critique d'une nouvelle classification proposée par M. le Dr W. H. Ashmead pour la famille des *Mutillidæ*. Rev. Ent. franc. xxiii, pp. 27-41. [*Hymenoptera*.]
31. —. Catalogue analytique et raisonné pes *Lépidoptères* de Saône-et-Loire et des départements limitrophes. Bull. Soc. Autun xvi, pp. 1-81, 4 pls. [*Rhopalocera*.]
— [See also DE SAUSSURE, ANDRÉ & BUYSSON (1218).]
32. ANGLAS, J. Rapports du développement de l'appareil trachéen et les métamorphoses des Insectes. C.R. Ac. Sci. cxxxviii, pp. 300, 301.
Translation, Ann. Nat. Hist. xiii, pp. 403, 404.
33. —. De l'origine des cellules de remplacement de l'intestin chez les *Hyménoptères*. C.R. Soc. Biol. lvi, pp. 173, 174.
34. —. Du rôle des trachées dans la métamorphose des Insectes. T. c. pp. 175, 176.
35. ANNANDALE, N. Contributions to the terrestrial zoology of the Faroes. Part I. P. Phys. Soc. Edinb. 1902-4, pp. 153-160.
Mollusca and *Arthropoda*. *Aptera* by G. H. CARPENTER. *Coccidæ* by R. NEWSTEAD.
36. ANTIGA Y SUNYER & BOFILL Y PICHOT, J. M. Catàlech de Insectes de Catalunya. *Hymenopters*.
Published in connection with Butl. Inst. Catalan. The parts at present published are *Chrysidida*, *Sphegida*, *Scoliida* and *Mutillidæ*, *Vespida*: each with separate pagination.

37. ARENBERG, PRINCE D'. Sur une expérience faite par la Compagnie de Suez pour la suppression du paludisme par la destruction des moustiques. C.R. Ac. Sci. cxxxviii, pp. 670-673.
38. ARROW, G. J. Sound production in the Lamellicorn beetles. Tr. ent. Soc. London 1904, pp. 709-750, pl. xxxvi. [*Coleoptera*.]
39. —. On the Coleopterous group "*Heptaphyllini*" of de Borre. Ann. Nat. Hist. xiv, pp. 30-33.
— [See also BATES (92).]
40. ASHMEAD, W. H. Classification of the fossorial, predaceous and parasitic wasps, or the superfamily *Vespoidea*. Paper No. 18 cont. Canad. Ent. xxxvi, pp. 5-9. [*Hymenoptera*.]
41. —. Classification of the *Chalcid* flies or the superfamily *Chalcidoidea*, with descriptions of new species in the Carnegie Museum collected in S. America by Herbert H. Smith. Publications of the Carnegie Museum; serial No. 21. Mem. Carnegie Mus. i, No. 4, pp. 225-551 + xxi, pls. xxxi-xxxix. [*Hymenoptera*.]
42. —. Descriptions of four new horn-tails. Canad. Ent. xxxvi, pp. 63, 64. [*Hymenoptera*.]
43. —. Three new Ichneumon flies from Russia. T. c. pp. 101, 102. [*Hymenoptera*.]
44. —. A new genus and some new species of *Hymenoptera* from the Philippine islands. T. c. pp. 281-285.
45. —. A *Hymenopterous* parasite of the Grape-berry moth, *Eudemis bortana* Schiff. T. c. p. 333.
Cf. SLINGERLAND, t. c. p. 344.
46. —. Descriptions of new *Hymenoptera* from Japan. I. J. N. York Ent. Soc. xii, pp. 65-83, pl. vii. II. T. c. pp. 146-165, pl. viii.
47. —. Descriptions of new genera and species of *Hymenoptera* from the Philippine Islands. P. U. S. Mus. xxviii, No. 1387, pp. 127-158.
48. —. A list of the *Hymenoptera* of the Philippine Islands, with descriptions of new species. J. N. York Ent. Soc. xii, pp. 1-22.
49. —. Remarks on honey bees. P. ent. Soc. Washington vi, pp. 120-123. [*Hymenoptera*.]
50. —. A new *Alysiid* from Ceylon. Ent. News. Philad. xv, p. 113. [*Hymenoptera*.]
51. —. Description of the type of the genus *Curriea* Ashm. T. c. p. 18. [*Hymenoptera*.]
52. —. A new *Torymid* from Utah. T. c. p. 302. [*Hymenoptera*.]
53. —. On the discovery of fig-insects in the Philippines. T. c. p. 342. [*Hymenoptera*.]
54. —. The *Homoptera* of Alaska. [in] Alaska viii, pp. 127-137.
55. —. *Hymenoptera* of Alaska. [in] Alaska ix, pp. 119-270, pls. ii-iv.
Reprint of memoir recorded in 1902.
56. AUDEL, H. Messungen an *Lepidopteren*. Allg. Zeitschr. Ent. ix, pp. 452, 453.
57. AURIVILLIUS, C. Neue oder wenig bekannte *Coleoptera Longicornia*. Arkiv Zool. i, pp. 313-328.

58. [AURIVILLIUS, C.] *Cerambyciden* aus Bolivien und Argentina gesammelt von Freiherrn Erland Nordenskiöld. Ent. Tidskr. xxv, pp. 205–208. [*Coleoptera*.]
59. —. Svensk insektfauna. 13. Steklar. *Hymenoptera*, *Sphegidae*. T. c. pp. 241–300.
60. —. Beiträge zur Kenntnis der Insektenfauna von Kamerun. No. 11. *Lepidoptera*, *Heterocera* ii. Arkiv Zool. ii, No. 4, pp. 68, 1 pl.
61. —. Diagnosen neuer *Lepidopteren* aus Afrika. Ent. Tidskr. xxv, pp. 92–96.
62. —. New species of African *Striphnopterygidae*, *Notodontidae* and *Chrysopolomidae* in the British Museum. Tr. ent. Soc. London 1904, pp. 695–700, pl. xxxiii. [*Lepidoptera*.]
63. —. *Lepidoptera* of the Swedish Zoological expedition to Egypt and the White Nile. Jägerskiöld exp. No. 8, 9 pp.
64. —. Eine interessante neue *Papilio*-Art aus Afrika. Ins. Börse 1904, p. 363. [*Lepidoptera*.]
65. AUSTEN, E. E. A revised synopsis of the Tsetse-flies (Genus *Glossina* Wied.). Ann. Nat. Hist. xiv, pp. 151–155. [*Diptera*.]
66. —. Supplementary notes on the Tsetse-flies (Genus *Glossina* Wied.). Brit. Med. J. 1904, ii, pp. 658–662, 1 fig.; also Lancet 1904, ii, pp. 464, 465. [*Diptera*.]
Abstract by DE MEIJERE, Zool. Zentrbl. 1905, p. 146.
67. —. The house-fly and certain allied species as disseminators of enteric fever among troops in the field. J. R. Army med. Corps 1904, 16 pp., 1 pl.
68. AXELSON, W. M. Verzeichniss einiger bei Golaa, im südöstlichen Norwegen eingesammelten *Collembolen*. Ent. Tidskr. xxv, pp. 65–84.
- 68A. —. Beiträge zur Kenntniss der *Collembolen*-Fauna Sibiriens. Ofv. Finska Forh. xlv, No. 20, 13 pp., 1 pl.
69. BACHMETJEW, P. Zur Frage über die Parthenogenese der männlichen Exemplare des Schmetterlings *Epinephele jurtina* L. Horæ Soc. ent. Ross. xxxvii, pp. 1–16.
In Russian.
70. —. Der Unterschied der sogenannten "falschen" Drohnen von den gewöhnlichen, betrachtet vom Standpunkt der Analytisch-statistischen Methode aus. Ins. Börse 1904, pp. 363 etc. [*Hymenoptera*.]
71. —. Über die Veränderlichkeit der Anzahl der Augen bei *Epinephele jurtina* L. in Sophia. Allg. Zeitschr. Ent. ix, pp. 143–147. [*Lepidoptera*.]
72. —. Zur Variabilität der Flügelänge von *Aporia crataegi* L. in Sophia. T. c. pp. 269–271. [*Lepidoptera*.]
73. BACK, E. A. New species of North American *Asilidae*. Canad. Ent. xxxvi, pp. 289–293. [*Diptera*.]
74. BAECKMANN, J. *Anoplites jacobsoni* sp. nov., aus Turkestan (*Coleoptera*, *Cerambycidae*). Rev. Russe Ent. 1904, pp. 311, 312.
75. BAGE, FRED. Notes on phosphorescence in plants and animals. Victorian Natural. xxi, pp. 93–104.
76. BAKER, C. F. A revision of American *Siphonaptera*, or fleas, together with a complete list, and bibliography of the group. P. U. S. Mus. xxvii, No. 1361, pp. 365–469, pls. x–xxvi.

77. *BALBIANI, E.-G. Sur les conditions de sexualité chez les Pucerons. *Intermed. Biologistes* i, pp. 170-174.
Abstract by SCHRÖDER, *Allg. Zeitschr. Ent.* ix, p. 115.
- 77A. BALFOUR, A. First report of the Wellcome Research laboratories at the Gordon Memorial College, Khartoum. Khartoum, 1904, 8vo, pp. 83 + iii, 6 pls.
Chiefly on injurious Insects; includes 2 papers by THEOBALD, q. v. (1375, 1376).
78. BALLOU, H. A. Insects attacking cotton in the West Indies. *West Ind. Bull.* iv, pp. 268-286.
79. BALSAMO, F. Su i fenomeni di diffrazione di alcuni corpi organizzati in rapporto alle esperienze di Abbe. *Boll. Soc. Napoli* xvii, pp. 45-53, 1 pl.
80. *BANKS, CH. A preliminary Bulletin on insects of the Cacao, prepared especially for the benefit of farmers. Manille, 1903, 58 pp., 60 pls.
81. BANKS, N. New species of *Hemerobius*. *Canad. Ent.* xxxvi, pp. 61, 62. [*Neuroptera*.]
82. —. *Neuropteroid* insects from New Mexico. *Tr. Amer. ent. Soc.* xxx, pp. 97-110, pl. i.
83. —. *Neuropteroid* insects of the expedition. [in] *Alaska* viii, pp. 155-166, pls. xi, xii.
Reprint of paper recorded in 1900.
84. —. Two new species of *Hydroptilidæ*. *Ent. News Philad.* xv, p. 116. [*Trichoptera*.]
85. —. Two new species of Caddice-flies. *P. ent. Soc. Washington* vi, pp. 140-142. [*Trichoptera*.]
86. —. Notes on the structure of the thorax and maxillæ in insects. *T. c.* pp. 149-153.
87. —. A list of *Neuropteroid* insects, exclusive of *Odonata*, from the vicinity of Washington, D.C. *T. c.* pp. 201-217.
88. BARNES, W. New species of North American *Lepidoptera*. *Canad. Ent.* xxxvi, pp. 165-175, 197-204, 237-244, 264-268.
89. BARRETT, O. W. The brown ant in Orange gardens. *Bull. Dep. Agric. Jamaica* ii, pp. 204-206.
90. BARTEL, M. *Eriogaster philippi* n. sp. *Deutsche ent. Zeitschr. Iris* xvii, p. 10. [*Lepidoptera*.]
91. —. Drei neue palæarktische *Noctuiden*. *T. c.* pp. 158-163. [*Lepidoptera*.]
92. BATES, F. (the late). A revision of the subfamily *Pelidnotinæ* of *Coleopterous* family *Rutelidæ*, with descriptions of new genera and species. *Tr. ent. Soc. London* 1904, pp. 249-276.
Prepared for publication by Mr G. J. ARROW.
93. BAUER, V. Zur innern Metamorphose des Centralnervensystems der Insecten. *Zool. Jahrb. Anat.* xx, pp. 123-152, pl. viii.
Abstract by HEYMONS, *Zool. Zentrbl.* 1905, pp. 92-94.

94. BEARE, T. H. & DONISTHORPE, H. ST J. K. Catalogue of British *Coleoptera*. London 1904, 51 pp.
Review by W. W. F., Ent. Mag. xl, p. 140.
95. BECKER, T. Die *Dipterengattung Peletophila* Hag. Zeitschr. Hym. Dipt. iv, pp. 129-133.
96. —. Die paläarktischen Formen der *Dipterengattung Lispa* Latr. Zeitschr. Ent. Breslau xxix, pp. 1-70.
97. BEDEL, L. Origine mœurs et synonymie d'un Curculionide aquatique *Stenopelmus rufinus* Gyll. (*Degorsia champenoisi* Bed.). Bull. Soc. ent. France 1904, pp. 23, 24. [*Coleoptera*.]
98. BEGUIN-BILLECOCQ, L. Diagnoses sommaires d'espèces nouvelles d'*Apion* Herbst provenant de la région Malgache. Bull. Soc. ent. France 1904, pp. 54-57, 103, 104. [*Coleoptera*.]
- BELL, R. G. [See KELLOGG & BELL (782, 783).]
99. BEMIS, FLORENCE E. The *Aleyrodids*, or mealy-winged flies, of California, with references to other American species. P. U. S. Mus. xxvii, No. 1362, pp. 471-537, pls. xxvii-xxxvii.
100. BENNETT, C. B. Earwigs (*Anisolabia maritima* Bon.). Psyche xi, pp. 47-53, cuts. [*Orthoptera*.]
101. BENTON, F. The specific name of the common honey-bee. P. ent. Soc. Washington vi, pp. 71-73. [*Hymenoptera*.]
102. BERGROTH, E. Eine neue Art der Gattung *Glypsus* Dall. (*Hemiptera, Pentatomidae*). Rev. Russe Ent. iv, p. 32.
103. —. Super *Reduviidis* nonnullis Camerunensibus. Bol. Soc. espan. iv, pp. 357-362. [*Hemiptera*.]
104. —. Ueber die systematische Stellung der Gattung *Megadoeum* Karsch. Wien. ent. Zeit. xxiii, pp. 37-40. [*Hemiptera*.]
105. —. *Scutellerides* nouveaux. Ann. Soc. ent. Belgique xlviii, pp. 354-357. [*Hemiptera*.]
106. BERLESE, A. Sopra una nuova specie di Cocciniglia (*Mytilaspis ficifolii*) che attacca le foglie del fico. Atti Ist. Napoli (5) v, No. 12, 5 pp., pl. i. [*Coccidæ*.]
107. BERNHAUER, M. Die Staphyliniden der paläarktischen Fauna. I. Tribus *Aleocharini* (II. Theil). Verh. Ges. Wien 1902, Beiheft, 198 pp.
The first part was published in the ordinary way [see Zool. Rec. 1091, INSECTA, BERNHAUER (93).] Part 2, being published as a special supplement, has been hitherto overlooked by the Recorder.
108. —. Neue exotische *Staphyliniden*. Stettin Ent. Zeit. lxxv, pp. 217-242. [*Coleoptera*.]
109. —. Neue exotische *Staphyliniden*. Verh. Ges. Wien liv, pp. 4-24. [*Coleoptera*.]
110. BERTHOUMIEU, V. Supplément aux *Ichneumonien*s d'Europe. Echange 1904, pp. 13-15. [*Hymenoptera*.]
111. —. *Hymenoptera* Fam. *Ichneumonidæ*, subfam. *Ichneumoninæ*, 87 pp., 2 pls.
Forms fasc. xviii of Wytsman Genera insectorum.
112. —. *Ichneumonien*s d'Espagne et des Canaries. Bull. Soc. ent. France 1904, pp. 270, 271. [*Hymenoptera*.]

113. [BERTHOUMIEU, V.] Un nuevo Icnemónido de España. Bol. Soc. espan. iv, p. 161. [*Hymenoptera*.]
114. —. Revision de l'Entomologie dans l'antiquité. Rev. Sci. Bourbonnais xvii, pp. 167–172 etc.
115. BETHUNE, C. J. S. Bibliography of Canadian Entomology for the year 1902. Tr. R. Soc. Canada ix, Sect. 4, pp. 155–161.
116. BETHUNE-BAKER, G. T. New *Lepidoptera* from British New Guinea. Nov. Zool. xi, pp. 367–429, pls. iv–vi.
117. —. On new species of *Rhopalocera* from Sierra Leone. Ann. Nat. Hist. xiv, pp. 222–236.
118. —. On three new species of *Arhopala*. T. c. pp. 233–235. [*Lepidoptera*.]
119. BEUTENMÜLLER, W. The Insect-galls of the vicinity of New York City. Amer. Mus. J. iv, pp. 89–124, illustr.
120. —. The types of *Cynipidae* in the collection of the American Museum of Natural History. Bull. Amer. Mus. xx, pp. 23–28. [*Hymenoptera*.]
121. —. Types of *Diptera* in the collection of the American Museum of Natural History. T. c. pp. 67–99.
122. —. Types of *Lepidoptera* in the collection of the American Museum of Natural History. T. c. pp. 81–86.
123. BEYER, G. Insects feeding in adobe walls. J. N. York Ent. Soc. xii, pp. 30, 31.
124. BEZZI, M. *Empididae* novæ palæarcticæ ex Museo nationali hungarico. Ann. Mus. Hungar. ii, pp. 198–202. [*Diptera*.]
125. —. *Empididi* Indo-australiani raccolti dal Signor L. Biró. T. c. pp. 320–361. [*Diptera*.]
126. —. Intorno ai generi *Pelethophila* Hagenb. e *Chiromyia* Rob.-Desv. Atti Mus. Milano xliii, pp. 173–181. [*Diptera*.]
127. —. Verzeichniss der bis jetzt bekannten Arten der *Dipterengattung* *Drapetis* Meigen. Wien. ent. Zeit. xxiii, pp. 143–146.
128. —. Brevi notizie sui *Ditterocecidii* dell' America del Nord. Marcellia ii, pp. 141–147.
129. BIEDERMANN, W. Die Schillerfarben bei Insekten und Vögeln. Festchr. Haeckel [Denk. Ges. Jena xi], pp. 215–300.
130. BISCHOF, J. Beitrag zur Kenntniss der *Muscaria schizometopa*. Verh. Ges. Wien liv, pp. 79–101. [*Diptera*.]
131. BISSCHOPP VAN TUINEN, K. De zaagwerktuigen der *Cimbicini*. Tijdschr. Ent. xlvii, pp. 177–180, pls. xii, xiii. [*Hymenoptera*.]
132. BLACKBURN, T. Further notes on Australian *Coleoptera*, with descriptions of new genera and species. xxxiv. Tr. R. Soc. S. Austral. xxviii, pp. 281–297.
133. —. A revision of the Australian species of *Bolboceras*, with descriptions of new species. P. Linn. Soc. N. S. Wales xxix, pp. 481–526. [*Coleoptera*.]
134. —. Revision of the Australian *Aphodiides*, and descriptions of three new species allied to them. P. Soc. Victoria xvii, pp. 145–181. [*Coleoptera*.]

135. BLANCHARD, F. A new Californian species of *Dromæolus* Kies. Ent. News Philad. xv, p. 187. [*Coleoptera*.]
136. BLANCHARD, R. Sur un travail de M. le Dr Brumpt intitulé : quelques faits relatifs à la transmission de la maladie du sommeil par les mouches Tsétsé. Arch. parasit. viii, pp. 573-589. [*Diptera*.]
BLANDFORD, W. F. H. [See GODMAN (614).]
137. BLOOMFIELD, E. N. Three *Diptera* new to the British list. Ent. Mag. xl, pp. 60, 61.
138. BLUNNO, M. A sketch of the position of viticulture in Europe with respect to *Phylloxera*. Agric. Gaz. N. S. W. xv, pp. 250-256, 445-470.
139. BODE, W. Prof. A. Radcliffe Grote. Allg. Zeitschr. Ent. ix, pp. 1-6, Nachtrag, p. 349.
BOFILL Y PICHOT. [See ANTIGA & BOFILL (36).]
140. BOHN, G. Influence de l'inanition sur les métamorphoses. C.R. Soc. Biol. lvi, pp. 661-663.
141. BOILEAU, H. Description d'un *Dorcus* nouveau. Bull. Soc. ent. France 1904, pp. 27, 28. [*Coleoptera*.]
142. —. Description d'un *Dorcide* nouveau. T. c. p. 39. [*Coleoptera*.]
143. —. Description de *Coléoptères* nouveaux. Naturaliste 1904, pp. 277, 278, 284, 285.
144. BOLÍVAR, J. Notas sobre los Pirgomórfidos (*Pyrgomorphidæ*). Bol. Soc. espan. iv, pp. 89-111. [*Orthoptera*.]
145. —. Notas sobre los Pirgomórfidos (*Pyrgomorphidæ*). II. Subfam. *Sphenariinæ*. III. *Tapesinæ*. T. c. pp. 306-328. [*Orthoptera*.]
146. —. Notas sobre los Pirgomórfidos (*Pyrgomorphidæ*). IV. *Taphronotinæ*. V. *Phymateinæ*. T. c. pp. 393-418. [*Orthoptera*.]
147. —.VI. *Poecilocerinæ*. VII. *Pyrgomorphinæ*. T. c. pp. 432-459.
148. BORDAS, L. Sur les glandes annexes de l'appareil séricigène des larves de *Lépidoptères*. C.R. Ac. Sci. cxxxix, pp. 1036-1038.
149. —. L'appareil digestif des larves d'*Arctiidae* (*Spilosoma fuliginosa* L.). C.R. Soc. Biol. lvi, pp. 1099, 1100. [*Lepidoptera*.]
150. —. Anatomie et structure histologique du tube digestif de l'*Hydrophilus piceus* L. et de l'*Hydrous caraboides* L. T. c. pp. 1100-1102. [*Coleoptera*.]
151. —. Sur les glandes mandibulaires de quelques larves de *Lépidoptères*. Op. cit. lvii, pp. 474-476.
152. —. Anatomie des glandes salivaires de la nêpe cendrée (*Nepa cinerea* L.). T. c. pp. 667-669. [*Hemiptera*.]
153. BORELLI, A. Viaggio del Dr Enrico Festa nella Repubblica dell'Ecuador e regioni vicine. *Forficole*. Boll. Mus. Torino xix, No. 475, 6 pp.
154. —. Viaggio del Dr Alfredo Borelli nella Repubblica Argentina e nel Paraguay. *Forficole*. T. c. No. 479, 8 pp.
155. BORG, H. Beiträge zur Kenntnis der Insektenfauna von Kamerun. No. 10. *Blattodeen* aus Kamerun. Bih. Svenska Ak. xxviii, Afd. iv, No. 10, 36 pp., ii pls. [*Orthoptera*.]

Omitted in 1902.

156. [BORG, H.] *Forficuliden* aus Kamerun. Arkiv Zool. i, pp. 563–580, pl. xxvi. [*Orthoptera*.]
157. BÖRNER, C. Zur Systematik der *Hexapoden*. Zool. Anz. xxvii, pp. 511–533.
158. —. Zur Klärung der Beingliederung der *Ateloceraten*. T. c. pp. 226–243.
— [See also BREDDIN & BÖRNER (173).]
159. BOUCOMONT, A. Étude sur les *Enoplotrupes* et *Geotrupes* d'Asie. Rev. Ent. franc. 1904, pp. 209–252. [*Coleoptera*.]
160. BOURGEOIS, J. Voyage de M. Maurice Maindron dans l'Inde méridionale. *Dascillides* et *Malacodermes*. Ann. Soc. ent. France 1903, pp. 478–483. [*Coleoptera*.]
161. —. Rhipidocérider et Malacodermes recueillis par W. J. Burchell dans ses voyages en Afrique australe (1810–1815) et au Brésil 1825–1830; avec la description de quatre espèces nouvelles. Ann. Nat. Hist. xiii, pp. 89–102. [*Coleoptera*.]
162. BOUTAN, L. Le *Xylotrechus quadripes* et ses ravages sur les caféiers du Tonkin. C.R. Ac. Paris cxxxix, pp. 932–934. [*Coleoptera*.]
BOYÉ, —. [See LE DANTEC & BOYÉ (869).]
163. BOUVIER, E. L. Les Abeilles et les Fleurs. Rev. gen. Sci. xv, pp. 331–345, 9 figg.
164. BRADLEY, J. C. Two new species of *Cratichneumon*. Zeitschr. Hym. Dipt. iv, pp. 106, 107. [*Hymenoptera*.]
165. BREDDIN, G. Beiträge zur Systematik der *Rhynchoten*. SB. Ges. naturf. Berlin 1904, pp. 135–153.
166. —. Une nouvelle espèce du genre *Lycambes* Stål. Ann. Soc. ent. Belgique xlvi, p. 306. [*Hemiptera*.]
167. —. *Rhynchoten* aus Ameisen- und Termitenbauten. T. c. pp. 407–416.
168. —. Beschreibungen neuer indo-australischer *Pentatomiden*. Wien. ent. Zeit. xxiii, pp. 1–19. [*Hemiptera*.]
169. —. *Plisthenes buruensis*, eine neue malayische *Tesseratomine*. T. c. pp. 179–181. [*Hemiptera*.]
170. —. Noch einiges über *Colobasiastes* Bredd. T. c. pp. 245–250. [*Hemiptera*.]
171. —. Neue *Rhynchoten*-Ausbeute aus Südamerika. Soc. ent. xviii, pp. 147, 148, 153, 154, 177, 178 and xix, pp. 49, 50, 58.
172. —. Einige sudamerikanische *Cercopiden*. Soc. ent. xix, pp. 58, 59. [*Homoptera*.]
173. — & BÖRNER. Ueber *Thaumatoxena wasmanni*, den Vertreter einer neuen Unterordnung der *Rhynchoten*. SB. Ges. naturf. Berlin pp. 84–93.
Abstract by HANDLIRSCH, Zool. Zentrbl. 1904, p. 589.
— [See also WASMANN (1485).]
174. BREIT, J. Zwei neue Käferarten aus dem mitteleuropäischen Faunengebiet. München. Kol. Zeitschr. ii, pp. 28, 29. [*Coleoptera*.]

175. BRÈTHES, J. Insectos de Tucuman. An. Mus. Buenos Aires xi, pp. 329-347.
176. —. Contribución al estudio de los *Véspidos* sud-americanos y especialmente Argentinos. Op. cit. (3) ii, pp. 15-39. [*Hymenoptera*.]
177. —. Un nuevo *Meteorus* argentino. (*Hymenoptera*, *Braconidæ*). T. c. pp. 53-55.
178. —. Los *Euménidos* de las Repúblicas del Plata. T. c. pp. 231-320. [*Hymenoptera*.]
179. —. Un nuevo *Anthidium* de Patagonia. T. c. pp. 351-356.
180. —. *Trimeria buyssoni* un nuevo *Masárido* argentino. T. c. pp. 371-374. [*Hymenoptera*.]
181. —. Notes biologiques sur trois *Hymenoptères* de Buenos Aires. Revist. Mus. La Plata x, pp. 193-205, 1 pl.
182. —. El bicho moro. Estudio biológico sobre la *Epicauta adspersa* Klug, y medios de destruirla. Bol. Agricult. Rep. Argentina i, No. 14 (1901), pp. 20-31. [*Coleoptera*.]
183. BRITTON, W. E. Fourth report of the State Entomologist. Report of the Connecticut Agricultural experiment Station for the year 1904. Part III, pp. x, 199-310, xvii pls.
Includes a considerable section on mosquito control.
184. BROWN, T. Descriptions of new genera and species of New Zealand *Coleoptera*. Ann. Nat. Hist. xiv, pp. 41-59, 105-127.
185. —. Description of a new *Coleopterous* insect from Bounty Island. With note by J. J. WALKER. T. c. pp. 273, 274.
186. BROWNE, F. B. A bionomical investigation of the Norfolk Broads. Tr. Norfolk Soc. vii, pp. 661-673.
187. BRUES, C. T. Notes on *Trichobius* and the systematic position of the *Streblidæ*. Bull. Amer. Mus. xx, pp. 131-134. [*Diptera*.]
188. —. A new species of *Ecitopora*. Ent. News Philad. xv, p. 250. [*Coleoptera*.]
189. —. On the relation of certain Myrmecophiles to their host ants. Psyche xi, pp. 21, 22.
190. —. Some new species of parasitic *Hymenoptera*. Canad. Ent. xxxvi, pp. 117-119.
191. BRUMPT, E. Sur une nouvelle espèce de mouche Tsé-Tsé la *Glossina decorsei* n. sp., provenant de l'Afrique centrale. C.R. Soc. Biol. lvi, pp. 628-630. [*Diptera*.]
192. —. A propos de la *Glossina decorsei* Brumpt. Op. cit. lvii, pp. 430-432. [*Diptera*.]
- 192A. —. [Work on transmission of sleeping sickness, cf. BLANCHARD (136).]
193. BBUNELLI, G. Ricerche sull' ovario degli insetti sociali. Rend. Acc. Lincei xiii, 1, pp. 285 & 350-356.
194. —. La metamorfosi degli insetti et la filogenesi dei *Colcoteri*. Riv. ital. Sci. Nat. xxiv, pp. 77-83, etc.
195. BRUNER, L. Some new Colorado *Orthoptera*. Bull. Exp. Stat. Colorado 94, pp. 57-67.
— [See also GODMAN (614).]

196. BRUNTZ, L. Les reins labiaux des *Thysanoures*. Anatomie et physiologie. Arch. zool. exp. Notes 1904, pp. lxxxix-xcii.
197. BUENO, J. R. DE LA TORRE. A list of certain families of *Hemiptera* occurring within seventy miles of New York. J. N. York Ent. Soc. xii, pp. 251-253 and xiii, pp. 29-47. [*Heteroptera*.]
198. BUGNION, E. Les œufs pédiculés de *Rhyssa persuasoria*. Bull. Soc. ent. France 1904, pp. 80-83. [*Hymenoptera*.]
199. —. Les œufs pédiculés de *Rhyssa persuasoria*. Bull. Soc. Vaudoise xl, pp. 245-249, pl. xl. [*Hymenoptera*.]
200. BULL, L. Mécanisme du mouvement de l'aile des Insectes. C.R. Ac. Sci. cxxxviii, pp. 590-592.
BURKILL, I. H. [See WILLIS & BURKILL (1533).]
201. BURR, M. Observations on the *Dermatoptera*, including revisions of several genera, and descriptions of new genera and species. Tr. ent. Soc. London 1904, pp. 277-322.
202. —. Synopsis of the *Orthoptera* of Western Europe. Ent. Rec. xvi, pp. 10-12, etc. etc. (incomplete).
— [See also DISTANT (382), and FARREN and others (479).]
203. BUSCK, A. *Tineid* moths from British Columbia, with descriptions of new species. P. U. S. Mus. xxvii, No. 1375, pp. 745-778. [*Lepidoptera*.]
204. —. A new *Tineid* genus from Arizona. P. ent. Soc. Washington vi, pp. 123, 124. [*Lepidoptera*.]
205. —. A new species of *Ethmia* from the boreal region of Colorado. J. N. York Ent. Soc. xii, p. 44. [*Lepidoptera*.]
206. —. A case-bearer injurious to apple and plum in China (*Coleophora neviusiella*, new species). T. c. p. 45. [*Lepidoptera*.]
207. BUTLER, A. G. On certain African butterflies of the subfamily *Pierinae*. Ann. Nat. Hist. xiii, pp. 426-429.
208. —. The butterflies of the group *Callidryades* and their seasonal phases. Op. cit. xiv, pp. 410-414. [*Lepidoptera*.]
209. —. On seasonal phases in butterflies. P. Zool. Soc. London 1904, ii, pp. 142-144. [*Lepidoptera*.]
210. BUTLER, E. A. Two additional species of British *Hemiptera*. Ent. Mag. xl, p. 275.
211. BUTLER, HORTENSE. The labium of the *Odonata*. Tr. Amer. ent. Soc. xxx, pp. 111-134, pls. ii-vii.
212. BUTTEL-REEPEN, H. V. Über den gegenwärtigen stand der Kenntnisse von den geschlechtsbestimmenden Ursachen bei der Honigbiene (*Apis mellifica* L.) ein Beitrag zur Lehre von der geschlechtlichen Präformation. Verh. Deutsch. zool. Ges. 1904, pp. 48-77.
Followed by a discussion in which Dr BRESSLAU and others took part.
213. *— Die Parthenogenesis bei der Honigbiene. Natur und Schule i, pp. 230-239.
Abstract, SCHRÖDER, Allg. Zeitschr. Ent. ix, p. 112.
214. BUYSSON, H. DU. *Élatérides* nouveaux et sous-genre nouveau. Bull. Soc. ent. France 1904, pp. 58-60. [*Coleoptera*.]

215. [BUYSSON, H. DU.] Notes sur quelques *Élatérides*. Rev. Ent. franc. xxiii, pp. 1-32. [*Coleoptera*.]
216. —. Description d'un *Agriotes* nouveau. T. c. p. 42. [*Coleoptera*.]
217. BUYSSON, R. DU. Contribution aux *Chrysidides* du Globe (5^e Série). Rev. Ent. franc. 1904, pp. 253-274. [*Hymenoptera*.]
218. —. Monographie des guêpes ou *Vespa* (suite). Ann. Soc. ent. France 1904, pp. 485-556 and 565-633, pls. v-x. [*Hymenoptera*.]
219. —. Espèces nouvelles d'*Hyménoptères*. Bull. Soc. ent. France 1904, pp. 144-146.
— [See also DE SAUSSURE, ANDRÉ & BUYSSON (1218).]
220. CALVERT, P. P. *Thaumatonera* again. Ent. News Philad. xv, p. 216. [*Odonata*.]
221. CAMERON, M. Description of new species of *Diglossa* (*Diglotta*) from the island of Perim. Ent. Mag. xl, pp. 157, 158. [*Coleoptera*.]
222. CAMERON, P. On some *Hymenoptera* from the Raffles Museum, Singapore. J. Straits Asiat. Soc. xli, pp. 119-124.
223. —. Descriptions of three new species of *Hymenoptera* from Pearston, South Africa. Rec. Albany Mus. i, pp. 109-111.
224. —. Descriptions of new genera and species of *Hymenoptera* from Dunbrody, Cape Colony. T. c. pp. 125-160.
225. —. On the *Hymenoptera* of the Albany Museum, Grahamstown, South Africa. T. c. pp. 161-175.
226. —. Descriptions of new species of *Cryptinæ* from the Khasia hills, Assam. Tr. ent. Soc. London 1904, pp. 103-122. [*Hymenoptera*.]
227. —. A new species of *Bembex* from the Khasia hills, *Bembex khasiana* sp. n. T. c. p. 123.
228. —. Description of a new genus and of four new species of *Hymenoptera*. Tr. Amer. ent. Soc. xxx, pp. 93-96.
229. —. Descriptions of two new species of aculeate *Hymenoptera* from Japan. Entomologist 1904, pp. 34, 35.
230. —. On some new genera and species of *Hymenoptera*. T. c. pp. 109-111, 161, 162, 208-210, 259-262.
231. —. Descriptions of a new genus and some new species of East Indian *Hymenoptera*. T. c. pp. 306-309.
232. —. Descriptions of new species of aculeate and parasitic *Hymenoptera* from Northern India. Ann. Nat. Hist. xiii, pp. 211-233.
233. —. On some new species of *Hymenoptera* from Northern India. T. c. pp. 277-303.
234. —. Descriptions of new genera and species of *Hymenoptera* from India (continued). Zeitschr. Hym. Dipt. iv, pp. 5-15.
235. —. Description of a new species of *Juartinia* from Deesa, India, etc. T. c. pp. 89, 90. [*Hymenoptera*.]
236. —. Description of a new species of *Athalia* (*Tenthredinidæ*) from India. T. c. p. 108. [*Hymenoptera*.]
237. —. Description of a new genus of *Pimplina* from South Africa. T. c. pp. 143, 144. [*Hymenoptera*.]

238. [CAMERON, P.] Description of a new species of *Apteropompilus* from South Africa. T. c. p. 176. [*Hymenoptera*.]
239. —. Description of a new genus of *Ichneumonidæ* from Africa. T. c. p. 190. [*Hymenoptera*.]
240. —. Description of a new species of *Pristaulacus* (*Evaniidæ*) from Australia. T. c. p. 191. [*Hymenoptera*.]
241. —. Descriptions of new genera and species of *Ichneumonidæ* from India. T. c. pp. 217–224, 337–346. [*Hymenoptera*.]
242. CANTIN, G. Sur la destruction de l'œuf d'hiver du *Phylloxera* par le lysol. C.R. Ac. Sci. cxxxviii, pp. 178, 179.
243. CARPENTER, G. H. *Collembola*. Fauna Hawaiensis iii, pp. 299–303, pl. ix.
244. —. Injurious insects and other animals observed in Ireland during the year 1903. Econ. P. Dublin Soc. i, pp. 249–266.
245. — & EVANS, W. Some Spring-tails new to the British Fauna, with description of a new species. P. Phys. Soc. Edinb. xv, 1902/4, pp. 215–220, pl. iv. [*Aptera*.]
246. CARRET, A. Description d'un *Élatéride* nouveau appartenant à la faune européenne. Bull. Soc. ent. France 1904, p. 170. [*Coleoptera*.]
247. CARRIKER, M. A. *Mallophaga* from birds of Costa Rica, Central America. Stud. Univ. Nebraska iii (1903), pp. 123–197, pls. i–ix.
248. CASEY, T. L. On some new *Coleoptera*, including five new genera. Canad. Ent. xxxvi, pp. 312–324.
249. CASTLE, W. E. Sex determination in bees and ants. Science xix, pp. 389–392. [Cf. WHEELER (1516).]
250. CATOR, D. On new species of *Lycenidæ* from Sierra Leone. Ann. Nat. Hist. xiii, pp. 73–76. [*Lepidoptera*.]
251. CAUDELL, A. N. Two *Orthoptera* hitherto unrecorded from the United States. P. U. S. Mus. xxvii, No. 1378, pp. 949–952.
252. —. Branched hairs of *Hymenoptera*. P. ent. Soc. Washington vi, pp. 5, 6.
253. —. An *Orthopterous* leaf-roller. T. c. pp. 46–49.
254. —. A new *Forficulid* from the Philippines. J. N. York Ent. Soc. xii, p. 108.
255. —. On a collection of non-saltatorial *Orthoptera* from Paraguay. T. c. pp. 179–188.
256. —. *Orthoptera* of the expedition. [in] Alaska viii, pp. 115–118.
A reprint of paper recorded in 1900.
- [See also DYAR & CAUDELL (441).]
- CECCHERELLI, G. [See COGGI & CECCHERELLI (296).]
- 256A. CESNOLA, A. P. DI. Preliminary note on the protective value of colour in *Mantis religiosa*. Biometrika iii, p. 58.
- 256B. CHAMPENOIS, A. Synopsis du genre *Glaphyrus* Latr. Abeille xxx, pp. 137–151. [*Coleoptera*.]
257. CHAMPION, G. C. *Catops sericatus* Chaud., a British insect. Ent. Mag. xl, p. 78. [*Coleoptera*.]

258. [CHAMPION, G. C.] An entomological excursion to Moncayo, N. Spain, with some remarks on the habits of *Xyleborus dispar* Fabr. by T. A. CHAPMAN, Tr. ent. Soc. London 1904, pp. 81-102, pls. xv, xvi. [*Coleoptera* and *Hemiptera*.]
 —. [See also GODMAN (614).]
259. CHAPMAN, T. A. Notes on *Heterogynis canalensis* n. sp. Tr. ent. Soc. London 1904, pp. 71-79, pls. xi-xiv. [*Lepidoptera*.]
260. —. A note on *Lasiosoma hirta*. Ent. Mag. xl, pp. 103-107. [*Diptera*.]
 —. [See also CHAMPION (258).]
261. CHASTER, G. W. *Agathidium badium* Er.: a beetle new to Britain. Ent. Rec. xvi, p. 18. [*Coleoptera*.]
262. CHEVREL, R. Comparaison entre *Scopelodromus isemerinus* Chevrel et *Thalassomyia frauenfeldi* Schiner. Arch. zool. exp. Notes 1904, pp. xxix-xxxv. [*Diptera*.]
263. CHITTENDEN, F. H. On the species of *Sphenophorus* hitherto considered as *simplex* Leconte. P. ent. Soc. Washington vi, pp. 127-130. [*Coleoptera*.]
264. —. On the species of *Sphenophorus* hitherto considered as *placidus* Say. T. c. pp. 130-137. [*Coleoptera*.]
265. —. Biologic notes on species of *Languria*. J. N. York Ent. Soc. xii, pp. 27-30. [*Coleoptera*.]
266. —. A species of the *Tenebrionid* genus *Latheticus* in the United States. T. c. pp. 166, 167. [*Coleoptera*.]
267. —. The chestnut weevils, with notes on other nut-feeding species. Bull. U. S. Dep. Agric. Ent. xlv, pp. 24-38. [*Coleoptera*.]
 —. [See also WEBSTER (1498).]
268. CHABAUT, A. Description d'un *Trechus* (*Anophthalmus*) nouveau des Pyrénées. Bull. Soc. ent. France 1904, p. 212. [*Coleoptera*.]
269. —. Description d'un *Rhipidius* nouveau de la France méridionale, avec tableau dichotomique des *Rhipidiini*. T. c. pp. 228-232. [*Coleoptera*.]
270. —. Description de deux espèces nouvelles de *Coléoptères* de l'Arabie. T. c. pp. 243, 244.
271. —. Description d'un *Coléoptère* cavernicole nouveau du midi de la France. Bull. Soc. Nîmes xxxi, p. 76.
272. —. Exploration zoologique de la grotte de Tharaux (Gard). T. c. pp. 84-90.
273. CHOLODKOVSKY, N. Entomotischen Miscellen. [Nos. vii-ix.] Zool. Jahrb. Syst. xix, pp. 554-560.
274. —. Aphidologische Mitteilungen. 21. Über das Erlöschen der Migration bei einigen *Chermes*-Arten. Zool. Anz. xxvii, pp. 476-478. [*Aphida*.]
275. CHRÉTIEN, P. Description d'une nouvelle espèce de *Tephroclystia*. Bull. Soc. ent. France 1904, p. 133. [*Lepidoptera*.]
276. —. Les chenilles des Lins. Naturaliste 1904, pp. 151, 162-164. [*Lepidoptera*.]

277. CHRISTOPHERS, S. R. Second report of the anti-malarial operations at Mian Mir, 1901-1903. *Sci. Mem. India* (n. s.), No. 9, 37 pp.
For first report see JAMES (759).
278. CLARK, A. H. Notes on the insects of Barbados, St. Vincent, the Grenadines and Grenada. *Psyche* xi, pp. 114-117.
279. CLARKE, W. E. On insects observed at the Eddystone lighthouse in the autumn of 1901. *Ent. Mag.* xl, pp. 9, 10.
CLAVAREAU, H. [See JACOBY & CLAVAREAU (750).]
280. COCKERELL, T. D. A. Some parasitic bees. *Ann. Nat. Hist.* xiii, pp. 33-42. [*Hymenoptera*.]
281. ———. Descriptions and records of bees. *Op. cit.* xiv, pp. 21-30. [*Hymenoptera*.]
282. ———. New and little-known bees in the collection of the British Museum. *T. c.* pp. 203-208. [*Hymenoptera*.]
283. ———. The Halictine bees of the Australian region. *T. c.* pp. 208-213. [*Hymenoptera*.]
284. ———. Two new bees. *Ent. News Philad.* xv, pp. 32-34. [*Hymenoptera*.]
285. ———. New genera of bees. *T. c.* p. 292. [*Hymenoptera*.]
286. ———. Records of American bees. *Canad. Ent.* xxxvi, pp. 13, 14. [*Hymenoptera*.]
287. ———. Three new *Cecidomyiid* flies. *T. c.* pp. 155, 156. [*Diptera*.]
288. ———. Some notes on *Aphididæ*. *T. c.* pp. 262, 263.
289. ———. Some bees from San Miguel County, New Mexico. *Entomologist* 1904, pp. 5-9. [*Hymenoptera*.]
290. ———. Note on the *Orthopterous* genus *Capnobotes*. *T. c.* pp. 179-181.
291. ———. New records of bees. *T. c.* pp. 231-236. [*Hymenoptera*.]
292. ———. The bees of the genus *Nomada* found in Colorado, with a table to separate all the species of the Rocky Mountains. *Bull. Colorado exp. Stat.* xciv, pp. 69-85. [*Hymenoptera*.]
293. ———. The bees of Southern California. *Bull. S. Calif. Ac.* iii, pp. 3-6.
294. ———. The Putnam Scale (*Aspidiotus ancylus* Putnam). *P. Davenport Ac.* ix, pp. 61, 62. [*Coccidæ*.]
295. ———. Table to separate the commoner Scales of the Orange. *Mem. Soc. Ant. Alzate* xiii, pp. 349-351. [*Coccidæ*.]
———. [See also SCUDDER & COCKERELL (1267), VIERECK (1454), and VIERECK & COCKERELL (1455).]
296. COGGI, A. & CECCHERELLI, G. Note biologiche su alcune Zanzare del Senese. *Bull. Soc. ent. Ital.* xxxvi, pp. 49-57. [*Diptera*.]
297. COLLEDGE, W. R. Notes on the "Scots Gray" mosquito. *P. Soc. Queensland* xviii, pp. 67-80, pls. iii-vii. [*Diptera*.]
298. COLLIN, J. E. A list of the British *Cecidomyiidæ* arranged according to the views of recent authors. *Ent. Mag.* xl, pp. 93-99. [*Diptera*.]
———. [See also FARREN and others (479).]

299. COLLINGE, W. E. Report on the injurious insects and others animals observed in the Midland Counties during 1904. Birmingham, 1905, 8vo, 69 pp.
300. COLLINS, P. The protective resemblance of insects. Knowledge (n. s.) i, pp. 51-55.
301. —. Flower mimics and alluring resemblance. T. c. pp. 137-140.
302. —. Terrifying masks and warning liveries. T. c. pp. 208-211.
303. COMBES, E. Étude sur le mimétisme. Soc. Pyrenees-or. xlv, pp. 39-44.
304. *COMPÈRE, G. In search for parasites. J. Dep. Agric. W. Australia viii, pp. 132-145.
305. CONDORELLI, M. Caso di myiasis nell uomo per larva cuticolare di *Hypoderma bovis* (De Geer). Boll. Soc. zool. Ital. xiii, pp. 171-181. [*Diptera*.]
[CONKLIN, E. G. Zool. Rec. 1903, INSECTA (342) on amitosis. Abstract Zool. Zentrbl. 1905, p. 34.]
306. CONRADI, A. F. Variations in the protective value of the odoriferous secretions of some *Heteroptera*. Science xix, pp. 393, 394.
307. CONTE, A. La coloration naturelle des soies. C.R. Soc. Biol. lvii, pp. 54, 55.
308. COOK, M. T. Galls and insects producing them. Ohio Natural. iv, pp. 115-147.
309. COOK, O. F. Report on the habits of the Kelep or Guatemalan Cotton-boll-weevil ant. Bull. U. S. Dep. Agric. Ent. xlix, 16 pp. [*Hymenoptera*.]
310. —. An enemy of the cotton-boll-weevil. Science xix, pp. 862-864. Cf. WHEELER (1517).
311. —. Pupation of the Kelep ant. Science xx, pp. 310-312. [*Hymenoptera*.]
Cf. WHEELER (1517), and COOK again, p. 611 t. c.; WHEELER again, Science xx, pp. 766-768; cf. also SANDERSON, Science xx, p. 887.
312. COQUILLET, D. W. A brief history of North American *Dipterology*. P. ent. Soc. Washington vi, pp. 53-58.
313. —. New *Diptera* from Central America. T. c. pp. 90-98.
314. —. New *Diptera* from India and Australia. T. c. pp. 137-140.
315. —. New North American *Diptera*. T. c. pp. 166-192.
316. —. Notes on *Culex nigrifutulus*. Ent. News Philad. xv, pp. 73, 74. [*Diptera*.]
317. —. Several new *Diptera* from North America. Canad. Ent. xxxvi, pp. 10-12.
318. —. *Diptera* from Southern Texas with descriptions of new species. J. N. York Ent. Soc. xii, pp. 31-35.
319. —. A new *Ceratopogon* from Brazil. T. c. p. 35. [*Diptera*.]
320. —. *Diptera* of the expedition. [in] Alaska ix, pp. 2-78.
Reprint of memoir recorded in 1900.

321. CORTI, E. Alcuni *Ditteri* del Portogallo. Rend. Ist. Lombardo xxxvi, pp. 1068-1077.
322. CORTI, A. Zoocecidi italiani. Atti Mus. Milano xlii, pp. 337-381.
323. COWAN, T. W. The honey bee: its natural history, anatomy, and physiology. Second edition. London [1904] 12mo, xii + 220 pp.
324. CRAMPTON, H. E. Experimental and statistical studies upon *Lepidoptera*. I. Variation and elimination in *Philosamia cynthia*. Biometrika iii, pp. 113-130.
325. —. Variation and selection in Saturnid Lepidoptera (*Philosamia cynthia*). Biol. Bull. vi, pp. 310, 311.
326. CRAWFORD, J. C. A new bee in the genus *Diphaglossa*. Canad. Ent. xxxvi, pp. 48-50. [*Hymenoptera*.]
327. —. Two new *Halictus* from New Jersey. Ent. News Philad. xv, pp. 97-99. [*Hymenoptera*.]
— [See also VIERECK (1454).]
328. CSIKI, E. *Pholeuon hungaricum*, barlangkakó új vak bogár Magyarországból. Ann. Mus. Hungar. ii, p. 565. [*Coleoptera*.]
329. —. *Coleoptera nova e Serbia*. T. c. pp. 591-593.
330. —. Magyarország *Cerambycidai*. Rov. Lapok xi, pp. 35 etc. [*Coleoptera*.]
331. —. Adatok Szerbia bogárfaunájához. T. c. pp. 147-149, 157-161. [*Coleoptera*.]
332. —. Új *Anophthalmus* Magyarországból. T. c. p. 170. [*Coleoptera*.]
333. CURRIE, R. P. An insect-collecting trip to British Columbia. P. ent. Soc. Washington vi, pp. 24-37.
334. —. Notes on some *Hemerobiidae* from Arizona and California. T. c. pp. 79-81. [*Neuroptera*.]
335. —. *Hemerobiidae* from the Kootenay district of British Columbia. T. c. pp. 81-89. [*Neuroptera*.]
336. —. *Odonata* of the expedition. [in] Alaska viii, pp. 145-153. Reprint of the paper recorded in 1900.
337. CZERNY, P. L. *Agathomyia wankowiczii* Schnabl und *aurantiaca* Bezzi, nebst einer Übersicht der europ. *Agathomyia*-Arten. Wien. ent. Zeit. xxiii, pp. 137-139. [*Diptera*.]
338. —. *Cremifania nigrocellulata*, eine neue *Ochthiphiline*. Systematische Stellung und Gattungen-Diagnose der *Ochthiphilinen*. T. c. pp. 167-170. [*Diptera*.]
339. —. Revision der *Helomyziden*. 1 Teil. T. c. pp. 199-244, 263-285, pl. ii. [*Diptera*.]
340. CZERSKI, S. Die Entwicklung der Mitteldarmanlage bei *Meloë violaceus* Marsch. Arch. polon. ii, pp. 259-284, pl. viii.
341. DAIBER, MARIE. Beiträge zur Kenntnis der Ovarien von *Bacillus rossii* Fabr. nebst einigen biologischen Bemerkungen. Jena. Zeitschr. xxxix, pp. 177-202, pls. iii, iv. [*Phasmidæ*.]
Abstract by FICK, Zool. Zentrbl. 1904, p. 795.
342. DALLA TORRE, K. W. VON. *Hymenoptera*, fam. *Vespidæ*, 108 pp., 6 pls.
Forms fasc. 19 of Wytsmann's Genera insectorum.

343. DANIEL, J. Revision den paläarktischen *Crepidodera*-Arten. München. Kol. Zeitschr. ii, pp. 237–297. [*Coleoptera*.]
 —. [See also WEISE (1502).]
344. DANIEL, K. Ueber *Ophonus hospes* Strm. und seine Verwandten. München. Kol. Zeitschr. ii, pp. 1–15. [*Coleoptera*.]
345. —. Die *Cerambyciden*-Gattung *Mallosia* Muls. T. c. pp. 301–314. [*Coleoptera*.]
346. —. Das Prioritätsprincip in der naturwissenschaftlichen Nomenclatur und seine praktische Durchführung. T. c. pp. 320–349.
347. —. Ueber *Leptura revestita*, L., *verticalis* Germ. und ihre nächsten Verwandten. T. c. pp. 355–371. [*Coleoptera*.]
348. —. Ueber Literaturcitate. T. c. pp. 380–389.
 A much needed criticism of the Editor of L'Echange.
349. — & DANIEL, J. Neue paläarktische *Koleopteren*. T. c. pp. 76–93.
350. DANIEL, S. M. New California *Thysanoptera*. Ent. News Philad. xv, pp. 293–297.
351. DANNATT, W. Descriptions of three new butterflies. Entomologist 1904, pp. 173, 174, pl. vii. [*Lepidoptera*.]
352. DAVIS, W. T. Caterpillars attacked by *Histers*. J. N. York Ent. Soc. xii, pp. 88–90. [*Coleoptera*.]
353. —. A new beetle from New Jersey. Ent. News Philad. xv, p. 34, pl. vi. [*Coleoptera*.]
354. DAWYDOFF, C. Zur Morphologie der phagocytären Organe der Insecten. Protok. St. Peterb. Obsch. xxxv, 1904, pp. 277–286, 3 cuts. [*Orthoptera*.]
 In Russian; brief summary in German, p. 310.
355. —. Die phagozytären Organe der Insekten und deren morphologische Bedeutung. Biol. Centrbl. xxiv, pp. 431–440.
356. —. Note sur les organes phagocytaires de quelques Gryllons tropicaux. Zool. Anz. xxvii, pp. 589–593. [*Orthoptera*.]
357. —. L'appareil phagocytaire d'un *Locustide* de Java (*Cleandrus graniger* Serv.). T. c. pp. 707–710. [*Orthoptera*.]
358. DEGENER, P. Die Entwicklung des Darmcanals der Insecten während der Metamorphose. Zool. Jahrb. Anat. xx, pp. 499–676, pls. xxxiii–xlili.
359. — & SCHAPOSCHNIKOW, C. Das Duftorgan von *Phassus schamyl*. Zeitschr. wiss. Zool. lxxviii, pp. 245–260, pl. xiv. [*Lepidoptera*.]
360. DEMAISON, C. Description d'une variété et d'une espèce nouvelles d'Asie mineure. Bull. Soc. ent. France 1904, pp. 206, 207. [*Coleoptera*.]
361. DESBROCHERS DES LOGES, J. *Curculionides* inédits d'Europe et circa. Frelon xii, pp. 53–64. [*Coleoptera*.]
362. —. Études sur les *Curculionides* de la faune européenne et des bassins de la Méditerranée, en Afrique et en Asie, suivies de tableaux synoptiques. T. c. pp. 65–104. [*Coleoptera*.]
 Relates to *Lixus* only as yet.
363. —. Diagnoses d'*Eusomus* nouveaux. T. c. p. 104. [*Coleoptera*.]

364. [DESBROCHERS DES LOGES, J.] *Curculionides* d'Europe et circa. T. c. pp. 105-109. [*Coleoptera*.]
365. —. Révision des *Curculionides* d'Europe et confins appartenant au genre *Eusomus*. T. c. pp. 119-132. [*Coleoptera*.]
366. —. Faunule des *Coléoptères* de la France et de la Corse. *Carabides* de la tribu des *Lebiidæ* et des tribus voisines. T. c. pp. 133-196 and xiii, pp. 1-37.
367. —. Premier supplément à la monographie du genre *Thylacites*. Op. cit. xiii, pp. 37-40. [*Coleoptera*.]
368. DESNEUX, J. *Isoptera* Fam. *Termitidæ*. 25^{me} fasc. Wytsman Gen. Ins., 52 pp., 2 pls.
369. —. Notes *termitologiques*. Ann. Soc. ent. Belgique xlviii, pp. 146-151.
370. —. A propos de la phylogénie des *Termitides*. T. c. pp. 278-286.
371. —. Remarques critiques sur la phylogénie et la division systématique des *Termitides*. (Réponse à M. Wasmann). T. c. pp. 372-378. Cf. WASMANN (1487).
372. —. Trois *Termites* nouveaux. T. c. pp. 286-288.
373. —. A new *Termite* from India. J. Bombay Soc. xv, p. 445.
DEVENTER, W. VAN. [See VAN DEVENTER (1428, 1429).]
374. DEVILLE, J. SAINTE-CLAIRE. Description d'un *Dyschirius* nouveau de France et d'Algérie. Bull. Soc. ent. France 1904, pp. 29, 30. [*Coleoptera*.]
375. —. Contributions à la faune française (*Coléoptères*). Abeille xxx, pp. 181-208.
376. DEWITZ, J. Die Farbe von *Lepidopterenkokons*. Zool. Anz. xxvii, pp. 617-621.
377. —. Zur Verwandlung der Insektenlarven. Zool. Anz. xxviii, pp. 166-182.
378. —. Künstliche Verfärbung bei Insekten. T. c. pp. 370-372.
379. DICKEL, O. Entwicklungsgeschichtliche Studien am Bienenei. Zeitschr. wiss. Zool. lxxvii, pp. 481-527, pls. xix, xx.
380. DIETZE, K. Beiträge zur Kenntnis der *Eupitheciæ*. Deutsche ent. Zeitschr. Iris xvi, pp. 331-387, pls. iii, iv, v.
381. DIMMOCK, G. & KNAB, F. Early stages of *Carabidæ*. Bull. Springfield Mus. i, pp. 1-55, pls. i-iv. [*Coleoptera*.]
382. DISTANT, W. L. Insecta transvaaliensia. Parts v, vi, pp. 97-158, pls. ix-xv. [*Coleoptera*.]
GAHAN gives descriptions of new *Cerambycidæ*, and BURR one new *Forficulid*.
383. —. The Fauna of British India, including Ceylon and Burma. *Rhynchota*, vol. ii, pt. 2, pp. 243-503.
384. —. Additions to a knowledge of the family *Cicadidæ*. Tr. ent. Soc. London 1904, pp. 667-676, pls. xxix, xxx. [*Hemiptera*.]
385. —. New *Rhynchota-Cryptocerata*. Entomologist 1904, pp. 258, 259.

386. [Distant, W. L.] Undescribed *Rhynchota*. T. c. pp. 277, 278.
387. —. Rhynchotal notes. xx. Ann. Nat. Hist. xiii, pp. 103–114. xxi. T. c. pp. 194–206.
These two parts relate to *Capsidæ*.
388. —. Rhynchotal notes. xxii. *Heteroptera* from North Queensland. T. c. pp. 263–276.
389. —. An undescribed genus of *Coreidæ* from Borneo. T. c. pp. 303, 304. [*Hemiptera*.]
390. —. Rhynchotal notes. xxiii. *Heteroptera* from the Transvaal. T. c. pp. 349–356.
391. —. Rhynchotal notes. xxiv. Op. cit. xiv, pp. 61–66.
392. —. Rhynchotal notes. xxv. [*Anthocoridae*.] T. c. pp. 219–222.
393. —. Rhynchotal notes. xxvi. T. c. pp. 293–303. xxvii. T. c. pp. 329–336. xxviii. T. c. pp. 425–430. [*Homoptera*.]
394. DITTRICH, R. Das Problem der Bienenzelle. Jahresber. Schlesisch. Ges. 1903, pp. 11, 12. Zool.-bot. Sekt. [*Hymenoptera*.]
395. DODD, F. P. Notes on maternal instinct in *Rhynchota*. Tr. ent. Soc. London 1904, pp. 483–485, pl. xxviii.
396. DODERO, A. Description d'un nouveau *Pselaphide* aveugle de la France méridionale. Bull. Soc. ent. France 1904, pp. 40–42. [*Coleoptera*.]
397. —. Materiali per lo studio dei *Coleotteri* italiani con descrizioni di nuove specie. Ann. Mus. Genova xli, pp. 52–59.
398. DOGNIN, P. *Hétérocères* nouveaux de l'Amérique du Sud. Ann. Soc. ent. Belgique xlviii, pp. 115–134. [*Lepidoptera*.]
399. —. *Hétérocères* nouveaux de l'Amérique du Sud. T. c. pp. 358–369. [*Lepidoptera*.]
400. —. Description d'une nouvelle espèce d'*Hétérocère* de l'Amérique du Sud. Naturaliste 1904, p. 55.
401. —. Description d'une nouvelle espèce d'*Hétérocère* de l'Amérique du Sud. T. c. p. 67.
402. DONCASTER, L. On the early development of the unfertilised egg in the sawfly, *Nematus ribesii*. P. Cambridge Soc. xii, pp. 474–476.
— [See also RAYNOR & DONCASTER (1120).]
DONISTHORPE, H. ST J. [See FARREN and others (479).]
403. DREYLING, L. Weitere Mitteilungen über die wachsbereitenden Organe der Honigbiene. Zool. Anz. xxvii, pp. 216–219. [*Hymenoptera*.]
404. —. Zur Kenntnis der Wachsabscheidung bei *Meliponen*. Op. cit. xxviii, pp. 204–210. [*Hymenoptera*.]
405. DRUCE, H. Descriptions of some new species of butterflies belonging to the family *Erycinidæ* from tropical South America. P. Zool. Soc. London 1904, i, pp. 481–489, pls. xxxiii, xxxiv. [*Lepidoptera*.]
406. —. Descriptions of some new species of *Lepidoptera Heterocera* from tropical South America. Ann. Nat. Hist. xiii, pp. 241–250.
407. DRUCE, H. H. Descriptions of new species of *Lycaenidæ* from Borneo and New Guinea. T. c. pp. 140–142. [*Lepidoptera*.]

408. [DRUCE, H. H.] Report on the *Lycaenidæ*. Fasc. Malay. Zool. pt. 3, 13 pp. [*Lepidoptera*.]
409. DUBOIS, R. Sur la coloration naturelle des soies : réponse à M. Conte. C.R. Soc. Biol. lvii, pp. 201-203.
410. DUBUISSON, H. Dégénérescence des ovules. C.R. Soc. Biol. lvii, pp. 554, 555. [*Coleoptera*.]
411. DUCKE, A. Sobre as *Vespidas* sociaes do Pará. Bol. Mus. Goeldi iv, pp. 317-374, expl. [*Hymenoptera*.]
412. —. Revisione dei *Crisididi* dello stato brasiliano del Pará. Bull. Soc. ent. Ital. xxxvi, pp. 13-48. [*Hymenoptera*.]
413. —. Zur Kenntniss der *Sphegiden* Nordbrasilens. Zeitschr. Hym. Dipt. iv, pp. 91-98. Nachtrag. T. c. pp. 189, 190. [*Hymenoptera*.]
414. —. Zur Kenntniss der *Diploptera* vom Gebiete des unteren Amazonas. T. c. pp. 134-143. [*Hymenoptera*.]
415. —. Beitrag zur Kenntniss der Bienengattung *Centris* F. T. c. pp. 209-214. [*Hymenoptera*.]
416. DUDGEON, G. C. A catalogue of the *Heterocera* of Sikhim and Bhutan. With notes by H. J. Elwes and additions by Sir George Hampson. Part xvi. J. Bombay Soc. xv, pp. 602-613.
417. DUSMET Y ALONSO, J. M. *Euménidos* de España, primer suplemento. Bol. Soc. espan. iv, pp. 126-137. [*Hymenoptera*.]
418. DUTTON, J. E. Report of the Malaria Expedition to the Gambia 1902 of the Liverpool School of Tropical Medicine and Medical Parasitology with an appendix by F. V. Theobald. Liverpool School of Tropical Medicine. Memoir x, pp. 1-46, 5 pls., included in Thompson Yates Lab. Rep. v, Part I, and separate pagination.
419. —, TODD, J. L. & CHRISTY, C. The Congo Floor Maggot. Brit. Med. J. 1904, ii, pp. 664-666, 2 figg., also Lancet 1904, ii, p. 465.
420. DYAR, H. G. The *Lepidoptera* of the Kootenai district of British Columbia. P. U. S. Mus. xxvii, No. 1376, pp. 779-938.
421. —. The life history of *Culex cantans* Meigen. J. N. York Ent. Soc. xii, pp. 36-38, pl. i. [*Diptera*.]
422. —. New species of N. American *Lepidoptera* and a new *Limacodid* larva. T. c. pp. 39-44.
423. —. The life history of *Culex varipalpus* Coquillett. T. c. pp. 90-92, pl. iii. [*Diptera*.]
424. —. New *Lepidoptera* from the United States. T. c. pp. 105-108.
425. —. The larva of *Culex punctor* Kirby, with notes on an allied form. T. c. pp. 169-171, pl. ix. [*Diptera*.]
426. —. Brief notes on mosquito larvæ. T. c. pp. 172-174 & 243-246. [*Diptera*.]
427. —. Note on the distribution of the red forms of *Diacrisia*. P. ent. Soc. Washington vi, p. 18. [*Lepidoptera*.]
428. —. A *Lepidopteron* parasitic upon *Fulgoridæ* in Japan. T. c. p. 19.
429. —. Notes on the mosquitoes of British Columbia. T. c. pp. 37-41. [*Diptera*.]

430. [DYAR, H. G.] A new genus and species of *Tortricidæ*. T. c. p. 60. [*Lepidoptera*.]
431. —. Additions to the list of North American *Lepidoptera*, No. 1. T. c. pp. 62–65.
432. —. Additions to the list of North American *Lepidoptera*, No. 2. T. c. pp. 103–117.
433. —. Two new forms of *Oeneis* Huebner. T. c. p. 142. [*Lepidoptera*.]
434. —. Notes on synonymy and larvæ of *Pyralidæ*. T. c. pp. 158–160. [*Lepidoptera*.]
435. —. Descriptions of new forms of the genus *Illice* Walker. T. c. pp. 197–199. [*Lepidoptera*.]
436. —. A new *Phycitid* from the foothills. T. c. p. 221. [*Lepidoptera*.]
437. —. A new *Tortricid* from the sea shore. T. c. p. 221. [*Lepidoptera*.]
438. —. New North American species of *Scoparia* Haworth. Ent. News Philad. xv, pp. 71, 72. [*Lepidoptera*.]
439. —. New *Noctuidæ* from British Columbia. Canad. Ent. xxxvi, pp. 29–33. [*Lepidoptera*.]
440. —. *Lepidoptera* of the expedition. [in] Alaska viii, pp. 212–227. Reprint from memoir recorded in 1900.
441. — & CAUDELL, A. N. The types of genera. J. N. York Ent. Soc. xii, pp. 120–122.
442. — & KNAB, F. Diverse mosquito larvæ that produce similar adults. P. ent. Soc. Washington vi, pp. 143, 144. [*Diptera*.]
443. DYÉ, L. Sur la répartition des *Anophelinae* à Madagascar. C.R. Soc. Biol. lvi, pp. 544, 545. [*Diptera*.]
444. —. Les parasites des *Culicides*. Arch. parasit. ix, pp. 5–77. [*Diptera*.]
445. EATON, A. E. New genera of European *Psychodidæ*. Ent. Mag. xl, pp. 55–59. [*Diptera*.]
446. ECKEL, L. The Resin Gnat and three Parasites. Biol. Bull. vi, pp. 325, 326. [*Diptera*.]
447. EHRLMAN, G. A. New forms of exotic *Papilionidæ*. Ent. News Philad. xv, pp. 214, 215. [*Lepidoptera*.]
448. ELLIOT, G. S. McD. The Anglo-French Niger-Chad boundary Commission. Geographical Journal xxiv, pp. 505–523. [*Termitidæ*.]
449. ELWES, H. J. On some butterflies from Tibet. Deutsche ent. Zeitschr. Iris xvi, pp. 388–391.
Criticises FRUHSTORFER's varieties and nomenclature.
450. EMBLETON, ALICE L. On the anatomy and development of *Comys infelix* Embleton, a *Hymenopterous* parasite of *Lecanium hemisphaericum*. Tr. Linn. Soc. London (2) ix, pp. 231–254, pls. xi, xii.
451. —. *Coccidæ*, with notes on collecting and preserving. Knowledge (n. s.) i, pp. 224, 250, 278.

452. EMERY, C. Zur Kenntniss des Polymorphismus der Ameisen. Zool. Jahrb. Suppl. vii, pp. 587-610. [*Hymenoptera.*]
453. —. Le affinità del genere *Leptanilla* e i limiti delle *Dorylinæ*. Arch. zool. ital. ii, pp. 107-116. [*Hymenoptera.*]
454. ENDERLEIN, G. *Nymphopsocus destructor* Enderl. 1903, ein neuer *Copeognathen*-Typus, zugleich ein neuer deutscher Wohnungs-Schädling. Zool. Jahrb. Syst. xix, pp. 727-732, pl. xliii.
455. —. Die von Herrn Prof. Dr Friedr. Dahl im Bismarck-Archipel gesammelten *Copeognathen*, nebst Bemerkungen über die physiologische Bedeutung des Stigmasackes. Zool. Jahrb. Syst. xx, pp. 105-112, pl. vii.
456. —. Die *Braconiden*-Gattung *Braunsia* Kriechb. T. c. pp. 429-452. [*Hymenoptera.*]
457. —. *Paniscomima*, eine neue von Herrn Baron von Erlanger aufgefundene *Rhopalosomiden*-Gattung. Zool. Anz. xxvii, p. 464. [*Hymenoptera.*]
458. —. *Homalothynnus*, eine neue *Thynniden*-Gattung. T. c. pp. 466-470. [*Hymenoptera.*]
459. —. Eine Methode, kleine getrocknete Insekten für mikroskopische Untersuchung vorzubereiten. T. c. p. 479.
460. —. Die Russelkäfer der Crozet-Inseln, nach dem Material der Deutschen Südpolar-Expedition. T. c. pp. 668-675. [*Coleoptera.*]
461. —. *Phthirocoris*, eine neue zu den *Henicocephaliden* gehörige *Rhynchotengattung* von den Crozet-Inseln und *Sphigmocephalus* nov. gen. T. c. pp. 783-788. [*Hemiptera.*]
462. —. *Lepidophthirus* nov. gen., eine Laus der Elefantenrobbe von der Kerguelen-Insel. Op. cit. xxviii, pp. 43-47. [*Anoplura.*]
463. —. Läuse-Studien. Über die Morphologie, Klassifikation und systematische Stellung der *Anopluren*, nebst Bemerkungen zur Systematik der Insekten-ordnungen. T. c. pp. 121-147.
464. —. Läuse-Studien, Nachtrag. T. c. pp. 220-223. [*Anoplura.*]
465. —. Neue afrikanische Arten der *Ichneumonidengattung* *Acronus* Tosq. 1896. T. c. pp. 65-69. [*Hymenoptera.*]
466. ENTZ, G. Az állatok színe és a mimicry. Termes. Kozl. Magyar Tars. xxxvi, pp. 201-206, 257-276, 417-441, 465-485, and Part II, T. c. pp. 189, 190.
467. ESCALERA, M. DE LA. Dos especies nuevas de *Buprestidos* paleárticos Bol. Soc. espan. iv, pp. 224-226. [*Coleoptera.*]
468. —. Don Serafin de Uhagon. Noticia necrológica (con un retrato). T. c. pp. 287-291.
469. ESCHERICH, K. Neue paläarktische *Meloiden* aus der F. Hauser'schen Sammlung. München. Kol. Zeitschr. ii, pp. 30-35. [*Coleoptera.*]
470. —. [A collection of abstracts on recent biological work on Ants.] Zool. Zentrbl. 1904, pp. 457-466. [*Hymenoptera.*]
- [See also WASMANN (1481).]
- EVANS, W. [See CARPENTER & EVANS (245).]
471. EVERTS, E. Tweede lijst van soorten en vareiteten nieuw voorde Nederlandsche fauna, sedert de uitgave der *Coleoptera* Neerlandica bekend geworden. Tijdschr. Ent. xlvii, pp. 172-176.

472. EWING, H. Z. The functions of the nervous system, with special regard to respiration, in *Acrididae*. Kansas Univ. Sci. Bull. ii, No. 11, pp. 305-319. [*Orthoptera*.]
473. FAIRMAIRE, L. Matériaux pour la faune *Coléoptérique* malgache. 18^e note. Ann. Soc. ent. Belgique xlviii, pp. 225-276.
474. —. Descriptions de *Lamellicornes* Indo-chinois nouveaux ou peu connus. Mission Pavie iii, pp. 86-90.
475. —. Deux espèces nouvelles de *Longicornes* du Toukin. T. c. pp. 145, 146. [*Coleoptera*.]
476. —. Descriptions de *Coléoptères* de la République-Argentine. Bull. Soc. ent. France 1904, pp. 61-64.
477. —. Description de *Cicindélides* et *Carabides* nouveaux de Madagascar. T. c. pp. 128-129. [*Coleoptera*.]
478. —. Descriptions de trois *Coléoptères* du Brésil. T. c. pp. 154, 155.
479. FARREN, W. and others. The Insects of Cambridgeshire, in Marr and Shipley, Nat. Hist. Cambridgeshire, pp. 139-183.
Orthoptera by BURR; *Neuroptera* by MORTON; *Coleoptera* by DONISTHORPE; *Diptera* by COLLIN; *Hymenoptera* by MORLEY.
480. FAUCONNET, L. & VITURAT. Catalogue analytique et raisonné des *Coléoptères* de Saône-et-Loire et des départements limitrophes. Suite. Bull. Soc. Autun xvi, pp. 115-308. [*Staphylinidae-Scydmaenidae*.]
481. FAUST, J. [the late]. Revision der Gruppe *Cléonides* vrais. Deutsche ent. Zeitschr. 1904, pp. 177-284. [*Coleoptera*.]
A catalogue by the author is added pp. 262-284, and an alphabetical Index by Dr HELLER, pp. 284-302.
482. FAUVEL, A. *Staphylinides* de l'Hindoustan et de la Birmanie. Rev. Ent. franc. xxiii, pp. 43-70. [*Coleoptera*.]
483. —. *Staphylinides* nouveaux du Sinaï et de la mer Rouge. T. c. pp. 71-74. [*Coleoptera*.]
484. —. *Geostiba* nouvelle d'Algérie. T. c. p. 75. [*Coleoptera*.]
485. —. *Staphylinides* exotiques nouveaux. 2^e Partie. T. c. pp. 76-112. [*Coleoptera*.]
486. —. Faune analytique des *Coléoptères* de la Nouvelle-Calédonie. 2^e Partie. T. c. pp. 113-208.
487. —. *Platyprosopus* nouveau d'Afrique. T. c. p. 275. [*Coleoptera*.]
488. —. *Staphylinides* myrmécophiles du Brésil. T. c. pp. 276-283, pl. i. [*Coleoptera*.]
489. —. Les *Staphylinides* du Thierwelt Deutsch-Ost-Afrika Notes et descriptions. T. c. pp. 284-294. [*Coleoptera*.]
490. —. *Staphylinides* de Nouvelle-Guinée recueillis par l'Expedition hollandaise. T. c. pp. 294-296. [*Coleoptera*.]
491. —. *Staphylinides* nouveaux de Madagascar. T. c. pp. 296-322. [*Coleoptera*.]
492. FAWCETT, J. M. On some new and little known butterflies, mainly from high elevations in the N. E. Himalayas. P. Zool. Soc. London 1904, ii, pp. 134-141, pl. ix. [*Lepidoptera*.]

493. FEDERLEY, H. Über *Spilosoma mendica* Ch. und var. *rustica* Hb., sowie über die vermutete Minikry der ersteren. Allg. Zeitschr. Ent. ix, pp. 178–181. [*Lepidoptera*.]
494. FELSCH, C. & ORBIGNY, H. D'. *Coprophagen* der Ausbeute des Herrn Prof. Dr Yngve Sjöstedt. Arkiv Zool. i, pp. 399–409. [*Coleoptera*.]
495. FELT, E. P. Mosquitos or *Culicidae* of New York State. Bull. N. York Mus. No. 79, pp. 241–400, 57 pls. [*Diptera*.]
Some of the tables have been prepared by D. B. YOUNG.
- 495A. —. Nineteenth Report of the State Entomologist on injurious and other Insects of the State of New York 1903. Bull. New York Mus. lxxvi, Entomology 21, pp. 91–235, pls. i–iv.
- 495B. — & JOUTEL, L. H. Monograph of the genus *Saperda*. Op. cit. lxxiv, Entomology 20, pp. 3–86, pls. i–xiv. [*Coleoptera*.]
Abstract by ESCHERICH, Zool. Zentrbl. 1905, p. 49.
496. — & YOUNG, D. B. Importance of isolated rearings from *Culicid* larvæ. Science xx, p. 312. [*Diptera*.]
497. FERNALD, C. H. A new genus and species of North American *Choreutinae*. Canad. Ent. xxxvi, pp. 130, 131. [*Lepidoptera*.]
498. FERRAUT, V. Beiträge zur Kenntniss der wahren Birngallmücke. Allg. Zeitschr. Ent. ix, pp. 298–304. [*Diptera*.]
499. FIELD, W. L. W. Problems in the genus *Basilarchia*. Psyche xi, pp. 1–7, pls. i–iii. [*Lepidoptera*.]
500. —. Notes on the pupation of *Vanessa antiopa*. Ent. News Philad. xv, pp. 6–9. [*Lepidoptera*.]
501. FIELDE, ADELE M. Three odd incidents in ant-life. P. Ac. Philad. 1904, pp. 639–641. [*Hymenoptera*.]
502. —. Effects of Light-rays on an ant (*Stenamma fulvum*). Biol. Bull. vi, p. 309.
503. —. On the artificial creation of mixed nests of ants. T. c. p. 326.
504. —. Observations on Ants in their relation to temperature and to submergence. Op. cit. vii, pp. 170–174.
505. —. Portable ant-nests. T. c. pp. 215–220, 3 figg.
506. —. Power of recognition among ants. T. c. pp. 227–250, 4 figg.
507. —. Tenacity of life in ants. T. c. pp. 300–309, 2 figg.
508. — & PARKER, G. H. The reactions of ants to material vibrations. P. Ac. Philad. 1904, pp. 642–649. [*Hymenoptera*.]
509. FIORI, A. Due nuove specie di *Malthodes* Kies. della Sicilia. Natural. Sicil. xvii, pp. 74–76. [*Coleoptera*.]
510. FLECK, E. Die *Coleopteren* Rumaniens. Bull. Soc. Bucarest xiii, pp. 308–346 (incomplete).
511. —. Meine Reisen durch die Dobrudscha 1899 u. 1903. Ent. Meddel. ii, pp. 266–282.
512. —. Die *Dipteren* Rumäniens. (Gesammelt von Dr Ed. Fleck, bestimmt von Dr P. Sack, Frankfurt a/M.) Bull. Soc. Bucarest xiii, pp. 92–116.
513. FLEISCHER, A. Biologisches über *Liodes*-Arten. Wien. ent. Zeit. xxiii, pp. 251–254. [*Coleoptera*.]

514. [FLEISCHER, A.] Tabulky k určování fauny palaearktické, obsahující z čeledi "Carabidae" oddíl "*Scaritini*." Všeobecné poznámky ku rodu "*Dyschirius*." Vestník. Klub. Prostějove ii (1900), pp. 25-56.
Entirely in Moravian.
515. FLETCHER, J. Descriptions of some new species and varieties of Canadian butterflies. Tr. R. Soc. Canada ix, Sect. 4, pp. 207-216, i pl. [*Lepidoptera*.]
516. —. Descriptions of some new species and varieties of Canadian butterflies. Canad. Ent. xxxvi, pp. 121-130. [*Lepidoptera*.]
517. FLETCHER, T. B. F. A preliminary list of the *Lepidoptera* of Malta. Entomologist 1904, pp. 273-276, 315-319.
518. FLEUTIAUX, E. Description d'un *Cardiophorus* nouveau de Madagascar. Bull. Soc. ent. France 1904, p. 12. [*Coleoptera*.]
519. FLÖGEL, J. H. L. Monographie der Johannisseeren-Blattlaus, *Aphis ribus* L. Allg. Zeitschr. Ent. ix, pp. 321-333 & 375-381.
520. FLORENTIN, —. Préparations de larves de *Diptères* (*Homalomyia canicularis* L.) provenant d'un estomac humain. C.R. Soc. Biol. lvi, pp. 525, 526.
521. FLOYD, R. A contribution to the nervous cytology of *Periplaneta orientalis*, the common cockroach. Mark Anniv. Vol. pp. 339 etc., pls. xxv-xxviii.
522. FOLSOM, J. W. *Apterygota* of Alaska. [in] Alaska viii, pp. 83-104, pls. vi-x.
A reprint of the paper recorded in 1900, with the same pagination and plates.
523. FOREL, A. Ants and some other insects. An inquiry into the psychic powers of these animals with an appendix on the peculiarities of their olfactory sense. Translated from the German by Prof. William Morton Wheeler. Religion of Science Library, No. 56. Chicago, 1904, 8vo, 49 pp. [*Hymenoptera*.]
524. —. The psychical faculties of ants and some other insects. Rep. Smithson. Inst. 1903, pp. 587-599.
Translated from Congr. Zool. v.
525. —. Ueber Polymorphismus und Variation bei den Ameisen. Zool. Jahrb. Suppl. vii, pp. 571-586. [*Hymenoptera*.]
526. —. In und mit Pflanzen lebende Ameisen aus dem Amazonas-Gebiet und aus Peru gesammelt von Herrn E. Ule. Zool. Jahrb. Syst. xx, pp. 677-707. [*Hymenoptera*.]
527. —. Note sur les fourmis du Musée zoologique de l'Académie impériale des Sciences à St Pétersbourg. Annuaire Mus. St. Petersb. viii, pp. 368-388. [*Hymenoptera*.]
528. —. *Formiciden*. Hamburg Magalhaen. Reise vii, 7 pp. [*Hymenoptera*.]
529. —. Fourmis de British Columbia. Ann. Soc. ent. Belgique xlvi, pp. 152-155. [*Hymenoptera*.]
Includes a new *Carebara* from Africa.
530. —. Fourmis du Musée de Bruxelles. T. c. pp. 168-177. [*Hymenoptera*.]
531. —. Dimorphisme du male chez les fourmis et quelques autres notices myrmécologiques. T. c. pp. 421-425. [*Hymenoptera*.]

532. [FOREL, A.] *Miscellanea Myrmécologiques*. Rev. Suisse Zool. xii, pp. 1-52. [*Hymenoptera*.]
——. [See also WASMANN (1485).]
533. FORMÁNEK, R. Zur näheren Kenntniss der Gattungen *Barypithes* Duval und *Omiias* Schönherr sensu Seidlitz. Munchen. Kol. Zeitschr. ii, pp. 16-28 and 151-182. [*Coleoptera*.]
534. ———. Ein neuer *Barypithes* und zwei neue *Omiias*. T. c. pp. 297-300. [*Coleoptera*.]
535. ———. Kůrovci (*Scolytidæ*) zemi Sudetských. Vestnik. Klub. Prostějov iii, pp. 119-145. [*Coleoptera*.]
Entirely in Moravian.
536. FÖRSTER, F. *Odonata* von Hoch-Malakka und Sikkim. Ins. Börse 1904, pp. 355 etc.
537. FOSTER, F. H. Effects of defoliation by caterpillars on tree growth. Psyche xi, p. 36.
538. FOUNTAINE, MARGARET E. A "butterfly summer" in Asia Minor. Entomologist 1904, pp. 79-84, 105-108, 135-137, 157-159, 184-188. [*Lepidoptera*.]
FOWLER, W. W. [See GODMAN (614).]
539. FRANCOIS, P. Sur divers *Geotrupes* du sous-genre *Thorectes* Muls. Bull. Soc. ent. France 1904, pp. 64-66 and 139-143. [*Coleoptera*.]
540. FREDERICQ, L. La faune et la flore glaciaires de la Baraque-Michel (point culminant de l'Ardenne). Bull. Ac. Belgique 1904, pp. 1263-1326.
541. FRIESE, H. Eine metallisch gefärbte *Vespide*. Zeitschr. Hym. Dipt. iv, p. 16. [*Hymenoptera*.]
542. ———. Zweiter Nachtrag zu den Bienengattungen *Caupolicana*, *Psiloglossa* und *Oxæa*. T. c. pp. 17-20. [*Hymenoptera*.]
543. ———. Neue Arten der Bienengattung *Ancylloscelis*. T. c. pp. 20-24. [*Hymenoptera*.]
544. ———. Neue *Anthidium*-Arten aus der neotropischen Region. T. c. pp. 101-106. [*Hymenoptera*.]
The species are all African.
545. ———. Beiträge zur Bienenfauna von Chile, Peru und Ecuador. T. c. pp. 180-188. [*Hymenoptera*.]
546. ———. Neue afrikanische Bienen-Arten. T. c. pp. 296-302. [*Hymenoptera*.]
547. ———. Ueber einige Bienen von Chile. T. c. pp. 303, 304. [*Hymenoptera*.]
548. ———. Ueber *Megachile heteroptera* Sich. T. c. pp. 327-330. [*Hymenoptera*.]
549. ———. Neue afrikanische *Megachile*-Arten. III. T. c. pp. 330-336. [*Hymenoptera*.]
550. ———. Nachtrag zur Monographie der Bienengattung *Centris*. Ann. Mus. Hungar. ii, pp. 90-92. [*Hymenoptera*.]
551. ———. Die Kegelbienen Africás (Genus *Calioxys*). Arkiv Zool. ii, No. 6, 16 pp. [*Hymenoptera*.]

552. [FRIESE, H.] Über Hummelleben im arktischen Gebiete. Allg. Zeitschr. Ent. ix, pp. 409-414. [*Hymenoptera*.]
553. — & WAGNER, F. v. Ueber die Hummeln als Zeugen natürlichen Formenbildung. Zool. Jahrb. Suppl. vii, pp. 551-570, pls. xxix, xxx. [*Hymenoptera*.]
554. FRINGS, C. Bericht über meine Temperatur-Versuche in den Jahren 1903-4. Soc. ent. xix, pp. 137 etc. [*Lepidoptera*.]
555. *FRIONNET, M. C. Chenilles de *Macrolépidoptères* français. *Geometræ*. Paris, 1904, 333 pp.
556. FROGGATT, W. W. Studies on Australian *Thysanoptera*: the genus *Idolothrips* Haliday. P. Linn. Soc. N. S. Wales xxix, pp. 54-57, pl. iii.
557. —. Notes on *Neuroptera* and descriptions of new species. T. c. pp. 71-76.
558. —. Locusts and grasshoppers. Part II. Agric. Gaz. N. S. W. xv, pp. 240-244, 1 pl. Part III, t. c. pp. 733-737, 1 pl. [*Orthoptera*.]
559. —. The army worm (*Leucania unipuncta* Haw.) in Australia. T. c. pp. 327-331.
560. —. The nut-grass *Coccid*. T. c. pp. 407-410, plate.
561. —. Some fern and orchid pests. T. c. pp. 514-518, 1 pl. [*Coleoptera*.]
Includes description of a new genus of weevil by LEA.
562. —. Experimental work with the peach *Aphis*.... Description of *Aphis*; parasites of the peach *Aphis*. T. c. pp. 603-612, 2 pls.
Several new parasites are described.
563. —. Report of the entomologist. T. c. pp. 1031-1034.
564. —. The sheep maggot fly, with notes on other common flies. T. c. pp. 1205-1211, 1 pl. [*Diptera*.]
— . [See also GODING & FROGGATT (613).]
565. FRUHSTORFER, H. Neue Falter. Ins. Börse 1904, p. 157. [*Lepidoptera*.]
566. —. Neue indo-australische *Lepidopteren*. Deutsche ent. Zeitschr. Iris xvii, pp. 133-157.
567. —. Neue *Rhopaloceren* aus dem Malayischen Archipel. Ent. Meddel. ii, pp. 291-332.
568. —. Neue *Rhopaloceren* aus dem malayischen Gebiet. Berlin. ent. Zeitschr. xlix, pp. 165-169.
569. —. Beitrag zur Kenntnis der *Rhopaloceren*-fauna der Insel Engano. T. c. pp. 170-206.
570. —. Neue Indo-malayische *Rhopaloceren*. Soc. ent. xix, pp. 26-29.
571. —. Neue *Elymnias* aus Celebes und dessen Satellit-Inseln. T. c. p. 53. [*Lepidoptera*.]
572. FUCHS, F. *Lepidopterologisches*, darunter Beschreibung zweier neuer Arten und einiger aberrativen Falter. Jahrb. nassau. Ver. pp. 29-44, pl. ii.
573. FUENTE, J. M. DE LA. Datos para la fauna de la provincia de Ciudad Real. Bol. Soc. espan. iv, pp. 381-390.

574. FYLES, T. W. *Torymus thomsoni* n. sp. Canad. Ent. xxxvi, p. 106. [*Hymenoptera*.]
575. —. A new Ichneumon. T. c. p. 207. [*Hymenoptera*.]
576. —. A new *Gelechiid*, *Trichotaphe levisella*, n. sp. T. c. p. 211. [*Lepidoptera*.]
577. GABRIEL, —. Ein Hilfsmittel bei Bestimmung der *Atomarien*. Zeitschr. Ent. Breslau xxix, pp. 85–89. [*Coleoptera*.]
578. GADEAU DE KERVILLE, H. Matériaux pour la faune des *Hyménoptères* de la Normandie. Quatrième note. Familles des *Chrysididés*, *Vespidés*, et *Eumenidés*. Bull. Soc. Rouen xxxix, pp. 40–47.
- GAHAN, C. J. [See DISTANT (382).]
579. GAL, J. Ponte du *Bombyx mori*. Bull. Soc. Nîmes xxxi, pp. 37–43. [*Lepidoptera*.]
580. GANGLBAUER, L. Die Käfer von Mitteleuropa. Vierter Band, erste Hälfte. *Dermestidæ*, *Byrrhidæ*, *Nosodendridæ*, *Georyssidæ*, *Dryopidæ*, *Heteroceridæ*, *Hydrophilidæ*. Wien, 1904, 8vo, 286 pp. [*Coleoptera*.]
581. —. Nova aus Judicarien. Munchen. Kol. Zeitschr. ii, pp. 186–200. [*Coleoptera*.]
582. —. Neue Arten aus den Gattungen *Trechus* (*anophthalmus*), *Hydroporus* und *Riolus*. T. c. pp. 350–354. [*Coleoptera*.]
583. —. Verzeichniss der auf der dalmatinischen Insel Meleda vorkommenden *Koleopteren* nach den Sammelergebnissen des Herrn Forstrates Alois Gobanz. Verh. Ges. Wien liv, pp. 645–660.
- [See also HOLDHAUS (695).]
584. GARBOWSKI, T. Parthenogenese bei *Porthesia*. Zool. Anz. xxvii, pp. 212–214. [*Lepidoptera*.]
585. GARCIA MERCET, R. Especies nuevas de Crisididos. Bol. Soc. espan. iv, pp. 83–89. [*Hymenoptera*.]
586. —. Especies españolas del género *Hedychridium*. T. c. pp. 144–152. [*Hymenoptera*.]
587. —. Las *Bembex* de España. T. c. pp. 341–356. [*Hymenoptera*.]
588. —. Un Nisonino nuevo de España. T. c. p. 392. [*Hymenoptera*.]
589. GEBIEN, H. Verzeichnis der von Professor Dr Yngve Sjöstedt in Kamerun gesammelten *Tenebrioniden*. Arkiv Zool. ii, No. 5, 31 pp., 2 pls. [*Coleoptera*.]
590. —. Revision der *Pycnocerini* Lac. (*Coleoptera Heteromera*). Deutsche ent. Zeitschr. 1904, pp. 101–176 & 305–356.
591. GERHARDT, J. Eine verkannte deutsche Käferart [*Isomina* n. sp.]. Zeitschr. Ent. Breslau xxix, p. 79. [*Coleoptera*.]
592. —. Eine neue deutsche Käfer-Art. Deutsche ent. Zeitschr. 1904, p. 366. [*Coleoptera*.]
593. GESSARD, C. Sur la tyrosinase de la mouche dorée. C.R. Ac. Sci. cxxxix, pp. 644, 645. [*Diptera*.]
594. GESTRO, R. Leonardo Fea edi suoi viaggi. Ann. Mus. Genova xli, pp. 95–152 [portrait, bibliography, list of discoveries].
595. —. Materiali per lo studio delle *Hispidæ*. XXI–XXIII. T. c. pp. 455–465. [*Coleoptera*.]

596. [GESTRO, R.] Materiali... xxiv. T. c. pp. 515-524. [*Coleoptera*.]
597. GIARD, A. Sur la ponte du *Pseudophléus falleni* Schilling. Feuille Natural. xxxiv, p. 107. [*Hemiptera*.]
598. —. Sur quelques *Diptères* intéressants du jardin du Luxembourg à Paris. Bull. Soc. ent. France 1904, pp. 86-88.
599. —. Sur l'*Agromyza simplex* H. L. parasite de l'Asperge. T. c. pp. 179-181. [*Diptera*, *Hymenoptera*.]
— [See also GOURY & GUIGNON (617).]
600. *GIARDINA, A. Sull' esistenza di una zona plasmatica perinucleare nel oocite. Publ. Lab. Zool. Palermo 1904.
Quoted by MOLLISON (955).
601. GILES, G. M. Cold weather mosquito notes from the United provinces, North-west India. J. trop. Medicine vii, pp. 1, 22, 49. [*Diptera*.]
602. —. Cold weather mosquito notes from India.—Malaria in Umritzar and its causes. T. c. pp. 83, 104, 120, 133, 149. [*Diptera*.]
603. —. Notes on some collections of mosquitoes etc., received from the Philippine Islands and Angola. T. c. pp. 365-369. [*Diptera*.]
604. —. Notes on some collections of mosquitoes received from abroad. T. c. pp. 381-384. [*Diptera*.]
605. GILLETTE, C. P. Report of the Entomologist. Some of the more important insects of 1903. Bull. Exp. Stat. Colorado 94, pp. 1-15, 2 pls.
606. —. Annotated list of Colorado *Orthoptera*. T. c. pp. 17-56.
607. —. Copulation and ovulation in *Anabrus simplex* Hald. Ent. News Philad. xv, pp. 321-324, pl. xix. [*Orthoptera*.]
608. GILLMER, M. Ein gynandromorphes Exemplar von dem Hybriden *Smerinthus hybridus* Stephens (1850). Allg. Zeitschr. Ent. ix, pp. 140-143. [*Lepidoptera*.]
609. GIRAULT, A. A. Standards of the number of eggs laid by Insects. II. Ent. News Philad. xv, pp. 2, 3.
610. —. *Attelabus bipustulatus* Fab. Theory of oviposition and construction of nidus; miscellaneous notes. T. c. pp. 189-193. [*Coleoptera*.]
611. —. *Anasa tristis* De G.; history of confined adults; another egg parasite. T. c. pp. 335-337. [*Hemiptera*.]
612. —. Miscellaneous notes on *Aphrophora parallela* Say. Canad. Ent. xxxvi, pp. 44-48. [*Homoptera*.]
613. GODING, F. W. & FROGGATT, W. W. Monograph of the Australian *Cicadidae*. P. Linn. Soc. N. S. Wales xxix, pp. 561-669, pls. xviii, xix. [*Homoptera*.]
614. GODMAN, F. D. Biologia centrali-americana, Parts clxxxi-clxxxv. The entomological contents are as follows:—
Coleoptera, Vol. iv, part 4, pp. 313-440, pls. xvii-xxi: *Curculionidæ* by G. C. CHAMPION.
Coleoptera, Vol. iv, part 6, pp. 225-280, pl. viii: *Scolytidæ* by W. F. H. BLANDFORD.
Rhynchota Homoptera, Vol. i, pp. 77-124, pls. ix-xii: *Fulgoridæ* by W. W. FOWLER.
Orthoptera, Vol. ii, pp. 33-104, pl. i: *Acrididæ* by L. BRUNER.

615. GOELDI, E. A. Os mosquitos no Pará. Resumo provisorio dos resultados da campanha de experiencias executadas em 1903, especialmente em relação ás especies *Stegomyia fasciata* e *Culex fatigans* sob o ponto de vista sanitario. Bol. Mus. Gœldi iv, pp. 129-197. [*Diptera*.]
616. —. Grandiosas migrações de borboletas no valle amazonica. T. c. pp. 309-316, 2 pls. [*Lepidoptera*.]
617. GOURY, G. & GUIGNON, J. Les insectes parasites des Ranunculacées. Feuille Natural. xxxiv, pp. 88-91, 112-118, 134-142.
Cf. GIARD, pp. 127, 128, for supplement: also PORTEVIN, p. 187, and FRIONNET, pp. 188, 236, t.c.
618. — & —. Les insectes parasites des Berbéridées. T. c. pp. 238-243, 253-255.
Supplement, FRIONNET, t. c. pp. 12, 13.
619. GRAENICHER, S. Wisconsin bees: Genus *Andrena*. Ent. News Philad. xv, pp. 64-67. [*Hymenoptera*.]
620. GREEN, E. E. The *Coccidæ* of Ceylon. Part III, pp. 171-249, pls. lxi-xciii. London, 1904.
621. —. Notes on some Ceylon butterflies. Spolia Zeylan. ii, pp. 75-77, 1 pl. [*Lepidoptera*.]
622. —. On some Javanese *Coccidæ*: with descriptions of new species. Ent. Mag. xl, pp. 204-210.
623. —. On some *Coccidæ* in the collection of the British Museum. Ann. Nat. Hist. xiv, pp. 373-377.
624. —. Descriptions of some new Victorian *Coccidæ*. Victorian Natural. xxi, pp. 65-71.
625. —. Notes on Australian *Coccidæ* ex coll. W. W. Froggatt, with descriptions of new species. No. 1. P. Linn. Soc. N. S. Wales xxix, pp. 462-465, pls. xvi, xvii.
626. —. The lac industry in Ceylon. Ann. Bot. Gardens Peraden. i, Suppl. pp. 33-38.
627. —. Report for 1903 of the Government entomologist. Agric. J. Bot. Gardens Ceylon ii, pp. 235-261.
628. GREEN, J. F. Protective colouring. Tr. West Kent Soc. 1903/1904, pp. 35-45.
629. GRIEP, B. *Lepidopterologische Wandlungen in lokaler Hinsicht*. Helios xxi, pp. 89-129, 1 pl.
630. GRIFFINI, A. Gli uccelli insettivori non sono utili all' agricoltura. Siena, 1904, 8vo, 83 pp.
631. GRIMSHAW, P. H. *Diptera scotica*. III. The Forth district. Ann. Scott. Nat. Hist. 1904, pp. 26-33, 98-102.
632. —. On a new British fly (*Hydrotæa pilipes* Stein) from the Forth district. T. c. pp. 158-160. [*Diptera*.]
633. —. On some new and rare Scottish *Diptera*. T. c. pp. 221-223.
634. GRINNELL, F. A new *Thanaos* from Southern California. Ent. News Philad. xv, p. 114. [*Lepidoptera*.]
635. GROSS, J. Die Spermatogenese von *Syromastes marginatus* L. Zool. Jahrb. Anat. pp. 439-498, pls. xxxi, xxxii. [*Hemiptera*.]

636. [GROSS, J.] Ein Beitrag zur Spermatogenese der *Hemipteren*. Verh. Deutsch. zool. Ges. 1904, pp. 180-190.
637. GROSSBECK, J. A. Description of a new *Culex*. Canad. Ent. xxxvi, p. 332. [*Diptera*.]
638. —. Description of two new species of *Culex*. Ent. News Philad. xv, pp. 332, 333. [*Diptera*.]
[GROTE, A. RADCLIFFE. Obituary, see BODE (139).]
639. GROUVELLE, A. Descriptions de *Clavicornes* nouveaux du Musée de Bruxelles. Ann. Soc. ent. Belgique xlviii, pp. 181-185. [*Coleoptera*.]
640. —. *Hétérocerides*. Mission Pavie iii, p. 83.
641. GRÜNBERG, K. Eine neue *Æstridenlarve* (*Rhinoestrus hippopotami* nov. spec.) aus der Stirnhöhle des Nilpferdes. SB. Ges. naturf. Berlin 1904, pp. 35-39, 1 pl. [*Diptera*.]
642. —. H. v. Ihering, Biologie der stachellosen Honigbienen Braziliens. Biol. Centrbl. xxiv, pp. 7-18. [*Hymenoptera*.]
Abstract of Ihering's last year's paper.
643. GRUVEL, A. Contribution à la histologie des muscles. Pr.-verb. Soc. Sci. Bordeaux 1896-97, pp. 70-75.
644. *GUÉNAUX, N. Entomologie et parasitologie agricoles. Paris, 1904, 8vo, 580 pp., 390 figg.
Noticed Science xx, p. 155.
645. GUÉRIN, J. & PÉNEAU, J. *Hémiptères*. Faune entomologique armoricaine. Bull. Soc. sci. med. Ouest France xiii, Appendix pp. xi-xvi, etc. etc.
Separate pagination for each family: this parts extends to *Berytidae*.
GUIGNON, J. [See GOURY & GUIGNON (617, 618).]
646. GUILLIAUME, A. Matériaux pour un catalogue des *Trypetidae* de la Belgique. Ann. Soc. ent. Belgique xlviii, pp. 426-431. [*Diptera*.]
GUPPY, J. [See KAYE (775).]
647. HAGEDORN, M. Revision unserer Pappelborkenkäfer. Munchen. Kol. Zeitschr. ii, pp. 228-233. Nachtrag, pp. 372, 373. [*Coleoptera*.]
648. —. Enumeratio *Scolytidarum* e Sikkim et Japan natarum Musei historico-naturalis Parisiorum quas Dominus J. Harmand annis 1890 et 1901 collegit descriptionibus specierum novarum adjectis. Bull. Mus. Paris 1904, pp. 122-126. [*Coleoptera*.]
649. —. Ein neuer *Scolytoplatypus* des Hamburger Museums und Bemerkungen über diese von C. Schaufuss aufgestellte Gattung. Stettin Ent. Zeit. lxx, pp. 404-413. [*Coleoptera*.]
650. —. Ein neuer *Scolytoplatypus* aus Java. Ins. Börse 1904, p. 260. [*Coleoptera*.]
651. —. Steinnussbohrer. Allg. Zeitschr. Ent. ix, pp. 447-452. [*Coleoptera*.]
652. HALLER, B. Über den allgemeinen Bauplan des Tracheaten Syncerebrums. Arch. mikr. Anat. lxx, pp. 181-279, pls. xii-xvii.
653. HAMPSON, Sir G. F. The *Lepidoptera-Phalanx* of the Bahamas. Ann. Nat. Hist. xiv, pp. 165-188.

654. [HAMPSON, Sir G. F.] The moths of India. Supplementary paper to the Volumes in "The Fauna of British India." Series III, part 1. J. Bombay Soc. xv, pp. 630-653. Part 2. Op. cit. xvi, pp. 132-151, pl. D. [*Lepidoptera*.]
655. HANCOCK, J. L. The *Tettigidae* of Ceylon. Spolia Zeylan. ii, pp. 97-157, 3 pls. & map. [*Orthoptera*.]
656. —. The oviposition and carnivorous habits of the green meadow-grasshopper (*Orchelimum glaberrimum* Burm.). Psyche xi, pp. 69-71, pl. v. [*Orthoptera*.]
657. HANDLIRSCH, A. Zur Systematik der *Hexapoden*. Zool. Anz. xxvii, pp. 733-759.
658. —. Über Konvergenzerscheinungen bei Insekten und über das Protentomon. Verh. Ges. Wien liv, pp. 134-142.
Abstract by HEYMONS, Zool. Zentrbl. 1904, p. 97.
659. —. Über die Insekten der Vorwelt und ihrer Beziehungen zu den Pflanzen. T. c. pp. 114-119.
Abstract by HEYMONS, Zool. Zentrbl. 1905, p. 98.
660. —. Les insectes houillers de la Belgique. Mem. Mus. Belgique iii, pp. 1-20, pls. i-vii.
661. —. Über einige Insektenreste aus der Permformation Russlands. Mem. Ac. St. Petersb. (8) xvi, No. 5, 8 pp., 1 pl.
662. —. Bemerkungen zu der Arbeit des Herrn Prof. Dr Heymons über die Abdominalanhänge der *Libellen*. Ann. Hofmus. Wien xix, pp. 59-63. [*Odonata*.]
Relates to HEYMONS (683).
663. HARTMANN, F. Neue Rüsselkäfer aus Ostafrika. Deutsche ent. Zeitschr. 1904, p. 369. [*Coleoptera*.]
664. HAUSER, G. Neue Cetonien-Arten aus Afrika und eine neue *Valgus*-Art aus Neu-Guinea. Deutsche ent. Zeitschr. 1904, pp. 33-41. [*Coleoptera*.]
665. —. Eine neue *Nemophas*-Art. T. c. p. 42. [*Coleoptera*.]
666. HAVERHORST, P. Over het Kopvocht bij vlinders die zich ontpoppen. Tijdschr. Ent. xlvii, pp. 168-171. [*Lepidoptera*.]
667. HAVERKAMPF, F. Note sur quelques aberrations intéressantes de *Lépidoptères* belges. Ann. Soc. ent. Belgique xlviii, pp. 186-188, pl. i.
668. HEATH, E. A. Descriptions of two new *Cetoniid* Beetles from British East Africa. Entomologist 1904, pp. 101, 102. [*Coleoptera*.]
669. HEATH, R. H. Sand-grouse and Locusts. J. Bombay Soc. xv, pp. 522, 523. [*Orthoptera*.]
HEBARD, M. [See REHN & HEBARD (1134).]
670. HEIDEMANN, O. Notes on North American *Aradidae*, with descriptions of two new species. P. ent. Soc. Washington vi, pp. 161-165. [*Hemiptera*.]
671. —. Notes on a few *Aradidae* occurring north of the Mexican boundary. T. c. pp. 229-233. [*Hemiptera*.]
672. —. *Heteroptera* of the expedition. [in] Alaska viii, pp. 139-144.
Reprint of the paper recorded in 1900; with some corrigenda, p. 140.

673. HELLER, H. M. Brasilianische Käferlarven gesammelt von Dr Fr. Ohaus. Stettin Ent. Zeit. lxx, pp. 381-401, pls. iv, v. [*Coleoptera*.]
674. —. Beiträge zur Kenntnis der Insektenfauna von Kamerun. No. 27. Rüsselkäfer aus Kamerun gesammelt von Prof. Dr Yngve Sjöstedt. Ent. Tidskr. xxv, pp. 161-201. [*Coleoptera*.]
675. —. Fünf neue *Zygopiden*. Ann. Soc. ent. Belgique xlviii, pp. 290-295. [*Coleoptera*.]
 —. [See also FAUST (481).]
676. HENNEGUY, L. F. Les Insectes. Morphologie. Reproduction. Embryogénie. Paris, 1904, 8vo, xviii + 804 pp., 4 pls., 622 illust.
677. HERRERA, A. L. Procédé pour multiplier l'ennemi du *Anthonomus grandis* du coton. Mem. Soc. Ant. Alzate xix, pp. 327-331.
678. HERRMANN, E. Schmetterlings-Fauna von Frankfurt a. O. Eine Zusammenstellung der in und um Frankfurt a. O. vorkommenden Grossschmetterlinge. Helios xxi, pp. 130-169. [*Lepidoptera*.]
679. HERZ, O. Beitrag zur Kenntniss der *Lepidopteren*-Fauna des russischen Nordens. Annuaire Mus. St. Petersb. ix, pp. 260-262.
680. —. *Lepidoptera* von Korea. *Noctuidæ* et *Geometridæ*. T. c. pp. 263-390, pl. i.
 Continuation of Fixsen's 1887 paper.
- 680A. —. *Lepidopteren* Ausbeute der Lena-Expedition von B. Poppius im Jahre 1901. Ofv. Finska Forh. xlv, No. 15, 22 pp., 1 pl.
681. HEYDEN, L. VON. Bestand der von Heyden'schen *Coleopteren*-Sammlung Januar 1903 an Arten (ausschliesslich Rassen und Varietäten) aus der palaearctischen Region. Deutsche ent. Zeitschr. 1904, pp. 13-15.
682. HEYLAERTS, F. J. M. Description d'une nouvelle espèce de *Psychides*, *Chalia laminati*. Ann. Soc. ent. Belgique xlviii, p. 419. [*Lepidoptera*.]
683. HEYMONS, R. Die Hinterleibsanhänge der *Libellen* und ihrer Larven. Ann. Hofmus. Wien xix, pp. 21-58, pl. i. [*Odonata*.]
 Cf. HANDLIRSCH (662).
684. —. [Review of recent works on classification of Insecta. Zool. Zentrbl. 1905, pp. 94-97.]
685. HEYN, K. Eine neue afrikanische *Ilema*-Art. Soc. ent. xix, p. 25. [*Lepidoptera*.]
686. HILZHEIMER, M. Studien über den Hypopharynx der *Hymenopteren*. Jena. Zeitschr. xxxix, pp. 119-150, pl. ii.
 Abstract by HEYMONS, Zool. Zentrbl. 1905, p. 103.
687. HIMSL, F. Die *Geometriden* Oberösterreichs. Soc. ent. xix, pp. 41 etc. etc. [*Lepidoptera*.]
688. HINE, J. S. The *Diptera* of British Columbia (First part). Canad. Ent. xxxvi, pp. 85-92.
 For part II (*Syrphidæ*) see OSBURN (1003).
689. —. New species of North American *Tabanidæ*. T. c. pp. 55, 56. [*Diptera*.]
690. —. On *Diptera* of the family *Ephydridæ*. Ohio Natural. iv, pp. 63-65.
691. —. The *Tabanidæ* of Western United States and Canada. Op. cit. v, pp. 217-248. [*Diptera*.]

692. HIRSCH, J. Die Lautäusserungen der Käfer. Soc. ent. xix, pp. 82, 89, 97. [*Coleoptera.*]
693. HIRSCHLER, J. Weitere Regenerationsstudien an *Lepidopterenpuppen*. (Regeneration des vorderen Körperendes.) Anat. Anz. xxv, pp. 417-435.
694. HOFFMANN, R. W. Über den Ventraltubus von *Tomocerus plumbeus* L. und seine Beziehungen zu den grossen unteren Kopfdrüsen. Ein Beitrag zur Kenntnis der *Collembolen*. Zool. Anz. xxviii, pp. 87-115.
695. HOLDHAUS, K. Beiträge zur Kenntnis der *Koleopteren*-Geographie der Ostalpen. München. Kol. Zeitschr. ii, pp. 215-227.
Includes description of an *Anophthalmus* by GANGLBAUER.
696. HOLE, R. S. Two notorious Insect pests. J. Bombay Soc. xv, pp. 679-697, pls. A-E. [*Lepidoptera.*]
697. HOLMBERG, E. L. Delectus *hymenopterologicus* Argentinus, *Hymenopterorum Argentinorum* et quorundam exoticorum observationes synonymicas, addendas, novorumque generum specierumque descriptiones continens. An. Mus. Buenos Aires (3) ii, pp. 377-517.
698. HOLMES, S. J. Phototaxis in *Ranatra*. [Abstract] Science xix, p. 212. [*Hemiptera.*]
699. HOLMGREN, N. Zur Morphologie des Insektenkopfes. I. Zum metameren Aufbau des Kopfes der *Chironomus*larve. Zeitschr. wiss. Zool. lxxvi, pp. 439-477, pls. xxvii, xxviii.
Abstract by DE MEIJERE, Zool. Zentrbl. 1904, pp. 452-454.
700. —. Zur Morphologie des Insektenkopfes. II. Einiges über die Reduktion des Kopfes der *Dipteren*larven. Zool. Anz. xxvii, pp. 343-355.
701. —. Ameisen (*Formica exsecta* Nyl.) als Hugelbildner in Sumpfen. Zool. Jahrb. Syst. xx, pp. 353-370. [*Hymenoptera.*]
702. HOMMELL, R. Anatomie et physiologie de l'Abeille domestique. Microg. prep. xii, pp. 49-60, etc. etc., pls. xxvii, xxviii.
703. HOOPER, D. Indian bees'-wax (*Apis dorsata* etc.). Agric. Ledger 1904, No. 7, pp. 73-110.
704. HOPKINS, A. D. Catalogue of exhibits of insect enemies of forests and forest products exhibited at the Louisiana Purchase exposition, St Louis Mo., 1904. Bull. U. S. Dep. Agric. Ent. No. 48, 56 pp., 22 pls.
705. HÖPPNER, H. Zur Biologie der *Rubus*-Bewohner. I. Allg. Zeitschr. Ent. ix, pp. 97-103. II. T. c. pp. 129-134. III. T. c. pp. 161-170, 18 cuts. [*Hymenoptera.*]
706. HORMUZAKI, K. VON. Nachträge zur *Lepidopteren*-fauna der Bukowina. Verh. Ges. Wien liv, pp. 422-447.
707. * —. Analytische Übersicht der palaearktischen *Lepidopteren*-familien. Berlin, 1904, 68 pp.
708. HORN, W. Ueber die *Cicindeliden*-Sammlungen von Paris und London. Deutsche ent. Zeitschr. 1904, pp. 81-99. [*Coleoptera.*]
709. —. 4 Neue *Cicindeliden* gesammelt von den Herren Oscar Neumann und Baron von Erlanger auf ihrer Expedition vom Roten Meer zum Nil. T. c. pp. 423-427. [*Coleoptera.*]
710. —. *Cicindela innocentior* (nov. spec.). T. c. p. 427. [*Coleoptera.*]

711. [HORN, W.] Zur Kenntniss der *Cicindeliden*-Fauna von Kamerun und seiner Hinterländer. T. c. pp. 429-431. [*Coleoptera*.]
712. —. *Megacephala ertli* (nov. spec.). T. c. p. 432. [*Coleoptera*.]
713. —. The *Cicindelidæ* of Ceylon. Spolia Zeylan. ii, pp. 30-44, 1 pl. [*Coleoptera*.]
714. HORVÁTH, G. Monographia *Colobathristinarum*. Ann. Mus. Hungar. ii, pp. 117-172. [*Hemiptera*.]
715. —. *Pentatomidæ* novæ africanæ. T. c. pp. 253-271. [*Hemiptera*.]
716. —. Species palæarcticæ generis *Caliscelis* Lap. T. c. pp. 378-385. [*Homoptera*.]
717. —. Insecta Heptapotamica a DD. Almásy et Stummer-Traunfels collecta. I. *Hemiptera*. T. c. pp. 574-590.
718. —. *Hydrocorisæ* tres novæ. T. c. pp. 594, 595. [*Hemiptera*.]
719. HOUARD, C. Recherches anatomiques sur les galles de tiges: pleuro-cécidies. Bull. Sci. France Belgique xxxviii, pp. 140-419.
720. HOULBERT, C. Faune entomologique armoricaine. Introduction. Généralités sur les *Coléoptères*. pp. 1-16. [Appendix to Bull. Soc. sci. med. Ouest France xiii.]
721. — & BÉTIS, L. Faune entomologique Armoricaine. 52^e famille. *Clérides*. 21 pp. Suppl. to Bull. Soc. sci. med. Ouest. France xiii, [*Coleoptera*.]
- 721A. HOWARD, L. O. The transmission of yellow fever by mosquitoes. Rep. ent. Soc. Ontario xxxiv, pp. 26-30.
- 721B. —. Recent work in American economic entomology. T. c. pp. 38-40.
722. HOYNINGEN-HUENE, F. Beiträge zur Kenntniss der *Lepidopteren*-fauna von Krasnoufirnsk. Berlin. ent. Zeitschr. xlix, pp. 1-54.
723. *HUDSON, G. V. New Zealand Neuroptera: a popular introduction to the life-histories and habits of May-flies, Dragon-flies, Caddis-flies and allied insects inhabiting New Zealand: including notes on their relation to angling. London, 8vo, viii + 102 pp., 11 pls.
Noticed Entomologist 1904, p. 148. Review, by W. F. K., Nature lxx, p. 195.
724. HÜEBER, TH. Systematisches Verzeichnis der deutschen *Zikadinen*. Jahresh. ver. Württemb. lx, pp. 253-277. [*Homoptera*.]
725. —. Beitrag zur Biologie seltener einheimischer Insekten. T. c. pp. 278-286. [*Coleoptera*, *Hemiptera*.]
726. HUTTON, F. W. Index faunæ Novæ Zealandiæ. London, 1904, 8vo, viii + 372 pp.
Introduction; historical; dissertation on the region: pp. 1-23.
727. —. Revision of the New Zealand members of the genus *Phorocera*. Tr. N. Zealand Inst. xxxvi, pp. 150-153. [*Diptera*.]
728. —. Two new flies. T. c. pp. 153, 154. [*Diptera*.]
729. —. On a new Weta from the Chatham islands. T. c. p. 154. [*Orthoptera*.]
730. —. Description of a new Blow-fly from Campbell island. T. c. p. 155. [*Diptera*.]

731. IHERING, R. VON. Note sur des *Vespides* du Brésil. Bull. Soc. ent. France 1904, pp. 84–86. [*Hymenoptera*.]
Apparently a translation, though not indicated as such, from Revist. Mus. Paulista vi.
- 731A. [IHERING, H. VON. Biology of stingless bees. Cf. Zool. Rec. 1903, INSECTA (748).]
Abstract by DALLA TORRE, Zool. Zentrbl. 1904, p. 150. Cf. also GRÜNBERG (642).
732. JABLONOWSKI, J. A Körtefának egy különös ellenségéről. Rov. Lapok xi, pp. 67–72 & 89–94. [*Hymenoptera*.]
733. JACOBI, A. *Homopteren* aus Nordost-Afrika, gesammelt von Oscar Neumann. Zool. Jahrb. Syst. xix, pp. 761–782, pl. xlv.
734. —. Ueber die *Flatiden*-Gattung *Poeciloptera* Latr. insbesondere der Formenring von *P. phalaenoides* (L.). SB. Ges. naturf. Berlin 1904, pp. 1–14. [*Homoptera*.]
735. —. Ueber ostafrikanische *Homopteren*. T. c. pp. 14–17.
736. —. Neue *Cicadiden* und *Fulgoriden* Brasiliens. T. c. pp. 155–164. [*Homoptera*.]
737. —. Verwandlung und Larvenschaden von *Brachyderes incanus* L. Zeitschr. Land-Forstwirtschaft ii, 1904, pp. 353–357. [*Coleoptera*.]
738. JACOBS, J. C. Catalogue des *Apides* de Belgique. Ann. Soc. ent. Belgique xlviii, pp. 190–203. [*Hymenoptera*.]
739. JACOBSON, G. Aperçu des classifications de l'Ordre des *Coléoptères*. Rev. Russe Ent. 1904, pp. 268–276.
740. —. *Coleoptera* Mandshuriæ meridionalis et peninsulæ Quantungensis, ab A. N. Gudzenko allata. Annuaire Mus. St. Petersb. viii, pp. xi–xvi.
741. —. Zur Kenntniss der *Termiten* Russlands. Op. cit. ix, pp. 57–107.
Includes a section on *Hodotermes vagans septentrionalis* by WASSILJEV.
742. JACOBY, M. Descriptions of some new species of Phytophagous *Coleoptera* obtained by Baron E. Nordenskiöld in Bolivia and the Argentine Republic. Arkiv Zool. i, pp. 513–524.
743. —. Descriptions of new genera and species of phytophagous *Coleoptera* obtained by Dr Loria in New Guinea. Ann. Mus. Genova xli, pp. 469–514.
744. —. Another contribution to the knowledge of Indian phytophagous *Coleoptera*. Ann. Soc. ent. Belgique xlviii, pp. 380–406.
745. —. Another contribution to the knowledge of African Phytophagous *Coleoptera*. P. Zool. Soc. London 1904, i, pp. 230–270, pl. xiii.
746. —. Descriptions of thirty-two new species of *Halticinae* (Phytophagous *Coleoptera*) from South and Central America. Op. cit. ii, pp. 396–413.
747. —. Descriptions of some new species of *Mastotethus* (Phytophagous *Coleoptera*). Entomologist 1904, pp. 63–68.
748. —. Descriptions of some new species of *Chlamyde* from South America. T. c. pp. 197–202. [*Coleoptera*.]

749. [JACOBY, M.] Description of some new species of Phytophagous *Coleoptera*. T. c. pp. 293–296.
750. — & CLAVAREAU, H. *Coleoptera Phytophaga* Fam. *Donacidae*. Wytsman Gen. Ins. fasc. 21, 14 pp., 1 pl.
751. — & —. *Crioceridae*. Op. cit. fasc. xxiii, 40 pp., 5 pls. [*Coleoptera*.]
752. JAKOVLEFF, B. E. Études sur les espèces du genre *Sphenoptera* Sol. (*Coleoptera*, *Buprestidae*). VI. Horæ Soc. ent. Ross. xxxvii, pp. 174–186.
753. —. Description d'une nouvelle *Sphenoptera* (s.-g. *Hoplandrocneme* Sem.) de la Transcaucasie (*Coleoptera*, *Buprestidae*). Rev. Russe Ent. 1904, p. 309.
754. —. *Hémiptères-Hétéroptères* de la faune paléarctique. ix. T. c. pp. 23–26. x. T. c. pp. 93–95.
755. —. *Hémiptères-Hétéroptères* nouveaux de la faune paléarctique. T. c. pp. 292–294.
756. —. *Geocoris chinensis* n. sp. et les espèces paléarctiques du sous-genre *Piocoris* Stål (*Hemiptera-Heteroptera*, *Lygacidae*). T. c. pp. 170, 171.
757. —. *Palomena limbata* sp. n. (*Hemiptera-Heteroptera*, *Pentatomidae*). Horæ Soc. ent. Ross. xxxvii, pp. 71–73.
758. JAMES, S. P. Malaria in India. Sci. Mem. India (n. s), No. 2, 106 pp., 1902. [*Diptera*.]
Previously overlooked. Observations on *Anopheles* mosquitoes and their larvæ, pp. 27–59.
759. —. First report of the anti-malarial operations at Mian Mir, 1901–1903. Op. cit. No. 6, 53 pp.
For second report see CHRISTOPHERS (277).
760. — & LISTON, W. G. A monograph of the *Anopheles* mosquitoes of India. Calcutta, 1904, 4to, vi + 132 pp., xv uncoloured + xv coloured plates. [*Diptera*.]
761. JANET, A. Les Papillons. Causeries Soc. zool. France i, No. 9, pp. 309–350.
762. JENKINSON, F. *Asteia elegantula* Zett., a species of *Diptera* new to Britain. Ent. Mag. xl, p. 4.
763. JOANNIS, J. DE. Description de deux *Lépidoptères hétérocères* nouveaux provenant de Nova Friburgs (Montagnes des Orgues, Brésil). Bull. Soc. ent. France 1904, pp. 289–291.
764. JOHANSEN, J. P. Om Undersogelse af Myretuer samt Fortegnelse over de i Danmark fundne, saakaldte myrmecophile Biller. Ent. Meddel. ii, pp. 217–265. [*Coleoptera*.]
765. JOHNSON, C. W. Some notes, and descriptions of four new *Diptera*. Psyche xi, pp. 15–20.
766. JONES, F. M. Pitcher-plant Insects. Ent. News Philad. xv, pp. 14–17, pls. iii, iv.
767. JORDAN, K. Some new Oriental *Anthribidae*. Nov. Zool. xi, pp. 230–237.
768. —. Some new African *Anthribidae*. T. c. pp. 238–241. [*Coleoptera*.]

769. [JORDAN, K.] American *Anthribidae*. T. c. pp. 242-309. [*Coleoptera*.]
770. —. Some new African *Cerambycidae*. T. c. pp. 364, 365. [*Coleoptera*.]
771. —. Some new moths. T. c. pp. 441-447. [*Lepidoptera*.]
772. —. Some new Oriental *Anthribidae*. Ann. Mus. Genova xli, pp. 80-91. [*Coleoptera*.]
JOUTEL, L. H. [See FELT & JOUTEL (495B).]
773. JOY, N. H. *Euconnus maktini* Mannh.; a new British beetle. Ent. Mag. xl, p. 6. [*Coleoptera*.]
774. KATHARINER, L. Mimikry, Selektion, Darwinismus. Ins. Börse 1904, pp. 4 etc.
775. KAYE, W. J. A catalogue of the *Lepidoptera Rhopalocera* of Trinidad. With an appendix by J. GUPPY. Tr. ent. Soc. London 1904, pp. 159-228, pls. xvii, xviii.
776. KEARFOTT, W. D. New *Tortricids* from Kaslo B. C. and the Northwest. Canad. Ent. xxxvi, pp. 109-114, 137-141. [*Lepidoptera*.]
777. —. A new *Proteopteryx*. T. c. pp. 306-308. [*Lepidoptera*.]
778. —. *Microlepidoptera*—Suggestions. Ent. News Philad. xv, pp. 89-96, 127-136, 207-212.
779. KELLOGG, V. L. Amitosis in the egg follicle cells of insects. Science xix, pp. 392, 393.
780. —. Regeneration in larval legs of silkworms. J. exp. Zool. i, pp. 593-599.
781. —. Influence of the primary reproductive organs on the secondary sexual characters. T. c. pp. 601-605.
782. — & BELL, R. G. Notes on insect bionomics. J. exp. Zool. i, pp. 357-367.
783. — & —. Studies of variation in Insects. P. Washington Ac. vi, pp. 203-332, figg. 1-81.
784. — & CHAPMAN, B. L. *Mallophaga* from birds of the Hawaiian islands. Fauna Hawaiiensis iii, pp. 305-321, pl. x.
Reprinted from J. N. York Ent. Soc. 1902.
785. KEMPNY, P. Beitrag zur *Neuropterenfauna* der Marschall-Inseln, nebst Beschreibung zweier neuer *Chrysopa*-Arten. Verh. Ges. Wien liv, pp. 352-355.
— [See also SCHNEE (1232).]
786. KERREMANS, C. Faune entomologique de l'Afrique tropicale. *Buprestides*. I. Introduction, *Julodines*. Ann. Mus. Congo iii, fasc. i, 65 pp., 1 pl. [*Coleoptera*.]
787. —. Monographie des Buprestides. Livrr. 1, 2, pp. 1-64, 8vo, Bruxelles, 1904.
Classification and Distribution.
788. KERSHAW, J. A. Notes on colour-variations of two species of Victorian butterflies. Victorian Natural. xx, pp. 173-175.
789. KERTÉSZ, K. Eine neue Gattung der *Sapromyziden*. Ann. Mus. Hungar. ii, pp. 73, 74. [*Diptera*.]
790. —. A magyarországi szúnygfélék rendszertani ismertetése. Allatt. Kozl. Magyar Tars. iii, pp. 1-75. [*Diptera*.]

791. KIEFFER, J. J. Species des *Hyménoptères*. Vol. vii bis, pp. 497-748, pls. xvii-xxi.
Completes this pt. of André's work: the present instalment includes *Trigonalides*, *Agriotypides*, and suppl. to *Cynipides*.
792. —. Description de deux *Cécidomyies* nouvelles d'Italie. Marcellia iii, pp. 91-94. [*Diptera*.]
793. —. Beschreibung neuer *Proctotrypiden* und *Evaniiden*. Arkiv Zool. i, pp. 525-562. [*Hymenoptera*.]
794. —. Description de nouveaux *Dryininæ* et *Bethylinæ* du Musée civique de Gênes. Ann. Mus. Genova xli, pp. 351-412. [*Hymenoptera*.]
795. —. Beschreibung einer neuen *Cynipide* aus Kamerun. Ent. Tidskr. xxv, pp. 107-110. [*Hymenoptera*.]
796. —. Neue *Eucharinæ* and *Chalcidinae*. Berlin. ent. Zeitschr. xlix, pp. 240-265. [*Hymenoptera*.]
797. —. Description d'un *Cynipide* formant un genre nouveau. Revist. chilena viii, pp. 43, 44. [*Hymenoptera*.]
798. —. Description d'un nouveau genre et de nouvelles espèces de *Proctotrypides* du Chili. T. c. pp. 142-146. [*Hymenoptera*.]
799. — & MARSHALL, T. A. *Proctotrypidæ*. Pp. 1-64, pls. i-iii. [*Hymenoptera*.]
Forms fasc. 85 of Vol. ix of André Species des *Hyménoptères* d'Europe et d'Algérie.
800. KINCAID, T. The insects of Alaska. [in] Alaska viii, pp. 1-34.
801. —. The *Tenthredinoidea* of the expedition. [in] Alaska ix, pp. 79-105.
Reprint of memoir recorded in 1900, as are also the two next.
802. —. The *Sphegoidea* and *Vespoidea* of the expedition. [in] t. c. pp. 107-112. [*Hymenoptera*.]
803. —. The metamorphoses of some Alaska *Coleoptera*. T. c. pp. 187-210, pls. xiii-xvii.
804. KIRBY, W. F. Notes on *Mantidæ* in the collection of the British Museum (Natural History), South Kensington, with descriptions of new species. Ann. Nat. Hist. xiii, pp. 81-88. [*Orthoptera*.]
805. —. Notes on *Phasmidæ* in the collection of the British Museum (Natural History), South Kensington, with descriptions of new species. No. i. T. c. pp. 372-377. No. ii. T. c. pp. 429-449. [*Orthoptera*.]
806. —. Description of a new species of the Neuropterous family *Nemopteridæ*. Op. cit. xiv, pp. 59, 60.
- 806A. —. A synonymic Catalogue of *Orthoptera*. Vol. i. *Orthoptera*. *Euplexoptera*, *Cursoria*, et *Gressoria*. London, 1904, 8vo, x+501 pp.
807. *KIRK, T. W. Report of the Biologist. Rep. New Zealand Dep. Agric. x, pp. 359-470, xviii pls.
808. KIRKALDY, G. W. Notes on the genus *Metrocoris*. Entomologist 1904, pp. 61, 62. [*Hemiptera*.]
809. —. Some new Oahuan (Hawaiian) *Hemiptera*. T. c. pp. 174-179.
810. —. A list of the *Coccidæ* of the Hawaiian Islands. T. c. pp. 226-230.
811. —. Bibliographical and Nomenclatorial notes on the *Hemiptera*. T. c. pp. 254-258.

812. [KIRKALDY, G. W.] Bibliographical and nomenclatorial notes on the *Hemiptera*. T. c. pp. 279-283.
813. —. Über *Notonectiden* (*Hemiptera*). Teil I. Wien. ent. Zeit. xxiii, pp. 95-110; Teil II. pp. 111-135.
814. —. Upon maternal solicitude in *Rhynchota* and other non-social insects. Rep. Smithson. Inst. 1903, pp. 577-585.
Revised form of paper recorded last year.
815. Klapálek, F. Über die Gonopoden der Insekten und die Bedeutung derselben für die Systematik. Zool. Anz. xxvii, pp. 449-453.
816. —. Noch einige Bemerkungen über die Gonopoden der Insekten. Op. cit. xxviii, pp. 255-259.
817. —. Die Morphologie der Genitalsegmente und Anhänge bei *Trichopteren*. Bull. Ceska Ak. viii, pp. 161-197, v pls.
818. —. *Plecopteren*. Hamburg. Magalhaen. Reise vii, 13 pp.
819. —. Evropské druhy čeledě *Dictyopterygidae*. Rozp. Ceske Ak. Praze ii, xiii, No. 17, 10 pp. [*Perlidae*.]
820. Klima, A. Die paläarktischen Arten des *Staphyliniden*-Genus *Trogophloeus* Mannh. München. Kol. Zeitschr. ii, pp. 43-66. [*Coleoptera*.]
821. Knab, F. The epistomal appendages of mosquito larvæ. J. N. York Ent. Soc. xii, pp. 175-177, pl. x. [*Diptera*.]
822. —. The eggs of *Culex territans* Walker. T. c. pp. 246-248.
—. [See also DIMMOCK & KNAB (381).]
823. *KNOCKE, E. Beiträge zur Generationsfrage der Borkenkäfer. Forstwiss. Centrbl. 1904, pp. 1-73. [*Coleoptera*.]
Abstract by HEYMONS, Zool. Zentrbl. 1905, pp. 99-101.
824. KOHAUT, R. Un *Pulicide* nouveau de Bosnie. Ann. Mus. Hungar. ii, pp. 87-89. [*Aphaniptera*.]
825. —. Eine neue *Pulicide* aus Bosnien. Allatt. Kozl. Magyar Tars. iii, p. 88. [*Aphaniptera*.]
KOHL, P. H. [See WASMANN, E. (1484A).]
826. KOKUJEV, N. Contributions à la faune des *Hyménoptères* de la prov. d'Irkoutsk. *Ichneumonidae* I. Rev. Russe Ent. iv, pp. 80-84.
827. —. *Hymenoptera* Asiatica nova. III. T. c. pp. 11-14. IV. T. c. pp. 106-108. V. T. c. pp. 213-215.
828. —. Description de deux nouvelles espèces de la famille des *Ichneumonidae* (*Hymenoptera*). T. c. pp. 199, 200.
829. Kolbe, H. J. Die morphologischen Verhältnisse der Artengruppen der afrikanischen *Coleopterengattung* *Tefflus*. Berlin. ent. Zeitschr. xlix, pp. 117-158.
830. —. Ueber einige interessante *Lamellicornier* und *Tenebrioniden* Afrikas. T. c. pp. 282-302. [*Coleoptera*.]
831. —. Gattungen und Arten der *Valgiden* von Sumatra und Borneo. Stettin. Ent. Zeit. lxxv, pp. 3-57. [*Coleoptera*.]
An appendix includes a n. g. from Tonkin, and another from Africa.
832. Kolmer, W. Eine Beobachtung über vitale Färbung bei *Corethra plumicornis*. Biol. Centrbl. xxiv, pp. 221-223. [*Diptera*.]

833. KONOW, F. W. Ein neuer *Entodecta* Knw. Zeitschr. Hym. Dipt. iv, p. 4. [*Hymenoptera*.]
834. —. Revision der *Nematiden*-Gattung *Pachynematus* Knw. (Fortsetzung). T. c. pp. 25–32 & 145–161. [*Hymenoptera*.]
835. —. Revision der *Nematiden*-Gattung *Pteronus* Juv. Knw. (Schluss). T. c. pp. 33–44. [*Hymenoptera*.]
836. —. Revision der *Nematiden*-Gattung *Lygæonematus*. T. c. pp. 193–208, 248–260. [*Hymenoptera*.]
837. —. Neue paläarktische *Chalastogastra*. T. c. pp. 226–231, 260–269. [*Hymenoptera*.]
838. —. Ueber einige exotische *Tenthrediniden*. T. c. pp. 231–240, 241–248. [*Hymenoptera*.]
 Pp. 241–256 occur twice in this volume; the second instalment of this paper is in the second set of pp. 241–256.
839. —. *Chalastogastra* (continuation) pp. 225–253, etc. Zeitschr. Hym. Dipt. iv. [*Hymenoptera*.]
 These parts have also a separate pagination, pp. 225–288.
840. KOPP, C. Beiträge zur Biologie der Insekten. Jahresh. Ver. Württemb. lx, pp. 344–350. [*Hymenoptera*.]
841. KRAMER, H. Zur Gattung *Sarcophaga*. Zeitschr. Hym. Dipt. iv, pp. 347–349. [*Diptera*.]
842. *KRANCHER, O. Entomologisches Jahrbuch xiii, Leipzig 1904, 248 pp.
843. KRAUSZE, A. H. Zwei neue *Phaneropteriden*arten. Ins. Börse 1904, p. 29. [*Orthoptera*.]
844. —. Zwei neue *Conocephalidenspezies*. T. c. p. 213. [*Orthoptera*.]
845. KRIEGER, R. Ueber die *Ichneumonidengattung* *Trichomma* Wesm. Zeitschr. Hym. Dipt. iv, pp. 162–172. [*Hymenoptera*.]
846. KRODEL, E. Durch Einwirkung niederer Temperaturen auf das Puppenstadium erzielte Aberrationen der *Lycaena*-Arten, *corydon* Poda und *damon* Schiff. Allg. Zeitschr. Ent. ix, pp. 49–55, 103–109 & 134–136. [*Lepidoptera*.]
847. KÜNCKEL, J. D'HERCULAIS. Les *Lépidoptères Limacodides* et leurs *Diptères* parasites, *Bombylides* du genre *Systropus*. Adaptation parallèle de l'hôte et du parasite aux mêmes conditions d'existence. C.R. Ac. Sci. cxxxviii, pp. 1623–1625.
848. KUNZE, R. E. Protective resemblance. Ent. News Philad. xv, pp. 239–244.
849. KUSNEZOV, N. J. On the development of ocellated spots in the larvæ of *Deilephila nerii* L. and *Pergesa porcellus* L. Rev. Russe Ent. iv, pp. 154–161. [*Lepidoptera*.]
850. —. Observations on *Embia taurica* Kusnezov (1903) from the southern coast of the Crimea. Horæ Soc. ent. Ross. xxxvii, pp. 138–173. [*Neuroptera*.]
 In Russian. Abstract in English, pp. 166–169.
851. —. Beiträge zur Kenntniss der Grossschmetterlinge des Gouvernements Pskov (Pleskau). II. Erster Nachtrag. T. c. pp. 17–70. [*Lepidoptera*.]

852. LAMB, C. G. *Periscelis annulata* Fall., a *Drosophilid* new to Britain, and *Ochthera mantispa* Lw., an *Ephydrid* new to Britain. Ent. Mag. xl, p. 277. [*Diptera*.]
853. LAMEERE, A. L'évolution des ornements sexuels. Bull. Ac. Belgique 1904, pp. 1327-1364.
854. —. Revision des *Prionides*. Neuvième mémoire.—*Callipogonines*. Ann. Soc. ent. Belgique xlviii, pp. 7-78. [*Coleoptera*.]
855. —. ...Dixième mémoire. *Titanines*. T. c. pp. 309-352. [*Coleoptera*.]
856. LAMPA, S. Berättelse till Kongl. Landtbruksstyrelsen angående verksamheten vid Statens entomologiska Anstalt under år 1903. Ent. Tidskr. xxv, p. 1-64.
857. —. Några af våra för trädgården nyttigaste insekter. T. c. pp. 209-216, 1 pl.
858. LATHY, P. I. On some aberrations of *Lepidoptera*. Tr. ent. Soc. London 1904, pp. 65-70, pl. x.
859. —. New species of S. American *Erycinidae*. T. c. pp. 463-468, pl. xxvii. [*Lepidoptera*.]
860. —. Description of a new species of *Cyrestis*. Entomologist 1904, p. 71. [*Lepidoptera*.]
861. —. A contribution towards the knowledge of the *Lepidoptera-Rhopalocera* of Dominica, B.W.I. P. Zool. Soc. London 1904, i, pp. 450-454.
862. LEA, A. M. Descriptions of Australian *Curculionidae*, with notes on previously described species. Part II. Tr. R. Soc. S. Austral. xxviii, pp. 77-134. [*Coleoptera*.]
863. —. Notes on Australian and Tasmanian *Cryptocephalides*, with descriptions of new species. Tr. ent. Soc. London 1904, pp. 329-461, pls. xxii-xxvi. [*Coleoptera*.]
864. —. Descriptions of new species of Australian *Coleoptera*. Part VII. P. Linn. Soc. N. S. Wales xxix, pp. 60-107, pl. iv.
— [See also FROGGATT (561).]
865. LEACH, J. A. On the occurrence of the mosquito *Anopheles* in Victoria. Victorian Natural. xxi, pp. 9-12. [*Diptera*.]
866. LEBEDEFF, A. Über die Speicheldrüsen der Küchenschabe (*Periplaneta orientalis* L.). Trudui Kazan. Univ. xxxiii, pp. 20+4, 1 pl.
867. *LEBREDO, M. Algunas observaciones sobre la Anatomía del Mosquito, con dibujos originales. Revist. medicina trop. April 1904, 6 pls.
868. *LÉCAILLON, A. Insectes et autres Invertébrés nuisibles aux plantes cultivées et aux animaux domestiques. Paris, 1903, 182 pp.
869. LE DANTEC, A. & BOYÉ, —. Note sur une myase observée chez l'homme en Guinée française. C.R. Soc. Biol. lvii, p. 602. [*Diptera*.]
870. LÉGER, L. Sporozoaires parasites de l'*Embia solieri* Rambur. Arch. Protistenk. iii, pp. 358-366. [*Neuroptera*.]
LEICESTER. — [See THEOBALD (1371).]
871. LEIGH, G. F. Synepigonian series of *Papilio cenea* (1902-3) and *Hypolimnas misippus* (1904), together with observations on the life-history of the former. With notes by E. B. POULTON and an appendix by R. TRIMEN. Tr. ent. Soc. London 1904, pp. 677-692, pls. xxxi, xxxii. [*Lepidoptera*.]

872. LEINEMANN, K. Über die Zahl der Facetten in den zusammengesetzten Augen der *Coleopteren*. Inaugural-Dissertation. Hildesheim, 1904, 64 pp.
873. LELEAN, P. S. Notes on *Myiasis*. Brit. Med. J. 1904, i, pp. 245, 246, 1 fig.
874. LEON, N. Comment se fait chez l'homme l'inoculation du paludismo par les *Anopheles*. Bull. Soc. Jassy xviii, pp. 97, 98.
875. —. Vorläufige Mitteilung über den Saugrüssel der *Anopheliden*. Zool. Anz. xxvii, pp. 730–732. [*Diptera*.]
876. LESNE, P. Supplément au Synopsis des *Bostrychides* paléarctiques. Abeille xxx, pp. 153–168, pls. iii, iv. [*Coleoptera*.]
877. —. *Cicindelides* et *Carabides*. Mission Pavie iii, pp. 58–81, pl. viii. [*Coleoptera*.]
878. —. Notes biologiques sur l'*Hispa testacea* L. Bull. Soc. ent. France 1904, pp. 68–70. [*Coleoptera*.]
879. —. Nouvelles observations sur les mœurs de la mouche de l'asperge. C.R. Soc. Biol. lvi, pp. 1006–1008. [*Diptera*.]
880. LEWIS, G. On new species of *Histeridae* and notices of others. Ann. Nat. Hist. xiv, pp. 137–151, pl. vii. [*Coleoptera*.]
881. LINDEN, MARIA VON. Einfluss des Stoffwechsels der Schmetterlingspuppe auf Flügelfärbung und Zeichnung des Falters. Ein Beitrag zur Physiologie der Varietäten-Bildung. Arch. Rassen i, pp. 477–518.
882. —. Die Ergebnisse der experimentellen *Lepidopterologie*. Biol. Centrbl. xxiv, pp. 615–634.
883. —. W. Biedermanns Untersuchungen über geformte Sekrete. T. c. pp. 182–189.
Abstract of BIEDERMANN [Zool. Rec. 1903, Ins. (126).]
884. —. Karl, Rudolf, Dietrich Fickert. Leopoldina, 1904, pp. 52–54.
LISTON, W. G. [See JAMES & LISTON (760).]
885. LITTLER, F. M. Some Tasmanian case-bearing *Lepidoptera*. Entomologist 1904, pp. 310–315.
886. LOVERDO, J. DE. L'étouffages des cocons par le froid artificiel. C.R. Ac. Sci. cxxxviii, pp. 1434–1436.
887. LOWE, F. Catalogue of *Lepidoptera*. Vol. I, pt. 1, *Danaina*. London, 1904, 8vo, 51 pp.
888. LOWER, O. B. Descriptions of new species of Australian *Elachistidae* etc. Tr. R. Soc. S. Austral. xxviii, pp. 168–180. [*Lepidoptera*.]
889. LUCAS, R. Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1900. *Hymenoptera*, *Lepidoptera*, pp. 289–944. [Taken from Arch. Naturg.]
890. LUCAS, W. J. Dragonflies in 1902 and 1903 [in Britain]. Entomologist 1904, pp. 29–34 & 84, pl. iii. [*Odonata*.]
891. LUDLOW, C. S. Concerning some Philippine mosquitoes. Canad. Ent. xxxvi, pp. 69–72. [*Diptera*.]
892. —. Mosquito notes. T. c. pp. 233–236 & 297–301. [*Diptera*.]
893. LUTZ, A. & SPLENDORE, A. Ueber Pebrine und verwandte Mikrosporidien. Centrbl. Bakter. Orig. xxxvi, pp. 645–650, pls. i–iv. [*Lepidoptera*.]

894. LUTZ, F. E. Variation in bees. *Biol. Bull.* vi, pp. 217-219.
Relates to CASTEEL & PHILLIPS' paper of last year. PHILLIPS replies, op. cit. viii, pp. 70-74.
895. LUZE, G. Beitrag zur *Staphyliniden*-Fauna von Russisch-Central-Asien. *Horæ Soc. ent. Ross.* xxxvii, pp. 74-115. [*Coleoptera*.]
896. —. Zwei neue Käferarten aus Russisch-Central-Asien. *Munchen. Kol. Zeitschr.* ii, pp. 69, 70. [*Coleoptera*.]
897. LYNCH ARRIBÁLZAGA, E. La langosta voladora del Perú. *An. Mus. Buenos Aires* (3) ii, pp. 1-5. [*Orthoptera*.]
898. MABILLE, P. *Lepidoptera Rhopalocera*, Fam. *Hesperiidae*, pp. 79-210, pls. iv.
Forms part of Wytsman's *Genera Insectorum*.
899. MAINDRON, M. Notes sur quelques *Cicindelidæ* et *Carabidæ* de l'Inde, et description d'espèces nouvelles. *Bull. Soc. ent. France* 1904, pp. 263-265. [*Coleoptera*.]
900. MANDERS, N. The butterflies of Ceylon. *J. Bombay Soc.* xvi, pp. 76-85. [*Lepidoptera*.]
901. —. Some breeding experiments on *Catopsilia pyranthe* and notes on the migration of butterflies in Ceylon. *Tr. ent. Soc. London* 1904, pp. 701-708, pls. xxxiv, xxxv. [*Lepidoptera*.]
902. MANTERO, G. Res ligusticæ xxxiii. Materiali per un Catalogo degli *Imenotteri* liguri. *Ann. Mus. Genova* xli, pp. 14-51.
903. —. Descrizione di tre nuove specie di *Braconidi* del genere *Rhogas* nees raccolte nell' Africa orientale. *T. c.* pp. 413-416. [*Hymenoptera*.]
904. —. Materiali per una fauna dell' Arcipelago Toscano Isola del Giglio. II. *T. c.* pp. 449-454. [*Hymenoptera*.]
Includes Description of n. g. by the late T. A. Marshall.
905. MANZI, L. Gli dei distruttori degli Anofeli e l' uso antico delle fumigazioni e delle reti contro di essi. *Arch. parasit.* viii, pp. 88-109.
906. MARCHAL, P. Recherches sur la biologie et le développement des *Hyménoptères* parasites. I. La polyembryonie spécifique ou germinogonie. *Arch. Zool. exp.* 1904 (4), ii, pp. 257-335, pls. ix-xiii.
907. —. Le déterminisme de la polyembryonie spécifique et le déterminisme du sexe chez les *Hyménoptères* à développement polyembryonnaire. *C.R. Soc. Biol.* lvi, pp. 468-470.
908. —. Sur la formation de l'intestin moyen chez les *Platygaster*. *T. c.* p. 1091. [*Hymenoptera*.]
909. —. Sur une Cochenille nouvelle, récoltée par M. Ch. Alluaud sur l'Intisy-à-caoutchouc de Madagascar. *Ann. Soc. ent. France* 1904, pp. 557-561. [*Coccidæ*.]
910. —. La *Cécidomyie* des Caroubes. *T. c.* pp. 561-564. [*Diptera*.]
911. —. Diagnose d'une *Cécidomyie* nouvelle vivant sur le Caroubier. *Bull. Soc. ent. France* 1904, p. 272. [*Diptera*.]
912. * —. Rapport sur la Pyrale de la Vigne (*Oenophthira pilleriana* Schiff.). *Bull. off. renseign. agr.* 1903, 20 pp.
913. —. Sur la biologie du *Chrysomphalus dictyospermi* var. *minor* Berlese, et sur l'extension de cette Cochenille dans le bassin méditerranéen. *Bull. Soc. ent. France* 1904, pp. 246-249. [*Coccidæ*.]

914. MARLATT, C. L. Importations of beneficial insects into California. Bull. U. S. Dep. Agric. Ent. xlv, pp. 50-56.
915. MARSHALL, G. A. K. A monograph of the *Coleoptera* of the genus *Hipporrhinus* Schh. (*Curculionidae*). P. Zool. Soc. London 1904, i, pp. 6-141, pls. i-iv.
MARSHALL, T. A. (the late). [See MANTERO (904) & KIEFFER & MARSHALL (799).]
916. MARSHALL, W. S. The marching of the Larva of the Maia Moth, *Hemileuca maia*. Biol. Bull. vi, pp. 260-265.
917. — & SEVERIN, H. Some points in the Anatomy of *Ranatra fusca* P. Beauv. Tr. Wisconsin Ac. xiv, pp. 487-501, pls. xxxiv-xxxvi. [*Hemiptera*.]
918. MARTIN, J. Un nouveau genre du groupe des *Natalicolaria* (*Tesseratominae*) de l'Inde méridionale. Bull. Mus. Paris 1904, pp. 314-316. [*Hemiptera*.]
MARTIN, J. [See also NOUALHIER & MARTIN (984).]
919. MARTIN, R. Liste des *Neuroptères* de l'Indo-Chine. Mission Pavie iii, pp. 204-221. [*Odonata*.]
920. *MARTINEZ, E. Un caso grave de larvas en la Nariz. Rev. med. tropic. 1904, 10 pp., 2 pls.
921. *MARTYNOW, A. Ueber den Ursprung der peritrophen Hüllen bei den Larven der *Trichopteren*. Mt. Ges. Moskau xcvi.
In Russian; abstract by v. ADELUNG, Zool. Zentrbl. 1904, pp. 316-318.
922. MATSUMURA, S. Additamenta zur Monographie der *Cercopiden* Japans, mit der Beschreibung einer neuen *Cicada*-Art. Annot. zool. Japon. v, pp. 31-54, pls. ii & iii. [*Homoptera*.]
923. *MATTEI, G. E. Osservazioni biologiche intorno ad una galla. Bull. Ort. bot. Napoli i, 1903, 13 pp., 1 pl. [*Hymenoptera*.]
Cynips mayri, Abstract, Marcellia ii, pp. xli, xlii.
924. MAXWELL-LEFROY, H. The present position of economic entomology in India. J. Bombay Soc. xv, pp. 432 etc.
925. MAYET, V. Description d'un *Aphodius* nouveau de France. Bull. Soc. ent. France 1904, pp. 130-132. [*Coleoptera*.]
926. —. Description d'une espèce nouvelle du genre *Diaprysius*. Bull. Soc. Nîmes xxxi, pp. 30, 31. [*Coleoptera*.]
927. MAYR, G. *Formiciden* aus Ägypten und dem Sudan. Jägerskiöld exp. No. 9, 11 pp. [*Hymenoptera*.]
928. —. *Hymenopterologische* Miscellen. iii. Verh. Ges. Wien liv, pp. 559-598.
Contents:—Die *Ormyrus*-Arten Europas. Neue *Chalcididen* und *Proctotrupiden*. *Formiciden*.
929. MAZZARELLI, G. Studi sulla *Diaspis pentagona* Targ. I Note sull'organizzazione della larva. Atti Mus. Milano xliii, pp. 15-19. II. Note biologiche ed anatomiche. T. c. pp. 317-329. [*Coccidæ*.]
930. McCLENAHAN, ETHEL M. The development of the rostrum in Rhynchophorous *Coleoptera*. Psyche xi, pp. 89-102, pls. vi-ix.
931. McCracken, ISABEL. *Anopheles* in California, with description of a new species. Ent. News Philad. xv, pp. 9-14, pl. ii. [*Diptera*.]

932. MEI, LEA. *Res italicæ* XIII. *Ortotteri* delle Alpi marittime. *Locustidi e Acrididi*. Boll. Mus. Torino xix, No. 473, 6 pp.
933. MEIJERE, J. C. H. DE. Beiträge zur Kenntniss der Biologie und der systematischen Verwandtschaft der *Conopiden*. Tijdschr. Ent. xvi, pp. 144-225, pls. xiv-xvii. [*Diptera*.]
Abstract by author, Zool. Zentrbl. 1904, p. 454.
934. —. Neue und bekannte süd-asiatische *Dipteren*. Bijdr. Dierkunde xviii, pp. 85-117, pl. viii.
The descriptions of some of the species were made by the late F. M. VAN DER WULP.
935. —. Zwei neue *Dipteren* aus dem Ostindischen Archipel. Notes Leyden Mus. xxv, pp. 177, 178.
936. MELANDER, A. L. Notes on North American *Stratiomyidæ*. Canad. Ent. xxxvi, pp. 14-24, 53-54. [*Diptera*.]
937. MELICHAR, L. Neue *Homopteren* aus Süd-Schoa, Galla und den Somali-Ländern. Verh. Ges. Wien liv, pp. 25-48.
938. —. Rozbor kříśů palearktickýř z řeledi *Membracidæ* Stål a *Cercopidæ* Stål. Vestnik. Klub. Prostějove iv, pp. 3-34, 2 pls. [*Homoptera*.]
Entirely in Moravian.
939. —. Rozbor kříśů palearktickýř z řeledi *Cicadidæ* Fieb. T. c. pp. 12-27. [*Homoptera*.]
940. MERRIAM, C. H. Alaska. Vol. viii, Insects, part i, pp. ix+238, xvii pls. Vol. ix, Insects, part ii, ix+284 pp., iv pls. New York, 1904.
These Vols. are made up by numerous Contributors. Most of the papers are reprints from P. Washington Ac. ii, 1900, and their contents are therefore not given in detail; but the titles are fresh, and corrigenda have been added to each. The pagination and plates are same as in the original.
941. METALNIKOFF, N. Sur un procédé nouveau pour faire des coupes microscopiques dans les animaux pourvus d'un tégument chitineux épais. Arch. zool. exp. Notes 1904, pp. lxvi, lxvii.
METALNIKOW, S. [See SIEBER & METALNIKOW (1292).]
942. MEUNIER, F. Monographie des *Cecidomyidæ*, des *Sciaridæ*, des *Mycetophilidæ* et des *Chironomidæ* de l'ambre de la Baltique. Ann. Soc. Bruxelles xxviii, pp. 12-92 (incomplete). [*Diptera*.]
Also published as a separate work, with title-page, 264 pp., xvi pls.
943. —. Sur un *Corethra* de l'ambre de la Baltique. Bull. Soc. ent. France 1904, pp. 89-91. [*Diptera*.]
944. —. Sur une Cicadine du Kiméridgien de la Sierra del Montsech. (Catalogne). Feuille Natural. xxxiv, pp. 119-121. [*Homoptera*.]
945. —. Contribution à la faune des *Helomyzinæ* de l'ambre de la Baltique. Op. cit. xxxv, pp. 21-27. [*Diptera*.]
946. MEYRICK, E. Descriptions of Australian *Microlepidoptera*. xviii. *Gelechiadæ*. P. Linn. Soc. N. S. Wales xxix, pp. 255-441.
947. —. *Macrolepidoptera*, supplement. Fauna Hawaiiensis iii, pp. 345-366.
948. —. New Hawaiian *Lepidoptera*. Ent. Mag. xl, pp. 130-133.

949. MIRANDA, V. C. DE. Molestias que affectam os animaes domesticos mormente o gado na ilha de Marajó. Bol. Mus. Gældi iv, pp. 438-468.
950. MJÖBERG, E. Eine neue *Forficulide*. Ent. Tidskr. xxv, p. 131.
951. MOCSÁRY, A. Ueber die Gattung *Clavellaria* Oliv. Zeitschr. Hym. Dipt. pp. 350-352. [*Hymenoptera*.]
952. ——. *Chrysididae* in Africa meridionali a Dre H. Brauns collectæ. Ann. Mus. Hungar. ii, pp. 403-413. [*Hymenoptera*.]
953. ——. *Siricidarum* species quinque novæ. T. c. pp. 496-498. [*Hymenoptera*.]
954. MÖLLENKAMP, W. Beitrag zur Kenntnis der *Lucaniden*. Ins. Börse 1904, pp. 341, etc. [*Coleoptera*.]
955. MOLLISON, T. Die ernährende Tätigkeit des Follikelepithels im Ovarium von *Melolontha vulgaris*. Zeitschr. wiss. Zool. lxxvii, pp. 529-545, pls. xxi, xxii.
Abstract, Zool. Zentrbl. 1905, p. 35.
956. MOORE, F. *Lepidoptera* indica. Parts lxvii-lxix, viz. Vol. vi, pp. 105-176, pls. 513-534. [*Papilionidae* and *Pieridae*.]
957. MORICE, F. D. Illustrations of the male terminal segments and armature in thirty-five species of the *Hymenopterous* genus *Colletes*. Tr. ent. Soc. London 1904, pp. 25-63, pls. vi-ix.
958. ——. *Rhadinocæra micans* Klug; a new British saw-fly. Ent. Mag. xl, p. 99. [*Hymenoptera*.]
959. —— & SZÉPLIGETI, G. *Hymenoptera aculeata* from Egypt and the White Nile. Jägerskiöld exp. No. 14, 11 pp.
Includes 1 *Braconide*.
960. MORLEY, C. The *Coleoptera* of Norfolk and Suffolk. Tr. Norfolk Soc. vii, pp. 706-721.
—-. [See also FARREN and others (479).]
961. MORSE, A. P. Researches on North American *Acridiidae*. Publ. Carnegie Inst. No. 18, 55 pp., 8 pls. [*Orthoptera*.]
962. ——. New *Acridiidae* from the South-eastern States. Psyche xi, pp. 7-13. [*Orthoptera*.]
963. MORTON, K. J. Further notes on *Hydroptilidae*, belonging to the European fauna, with descriptions of new species. Tr. ent. Soc. London 1904, pp. 323-328, pl. xxi. [*Trishoptera*.]
—-. [See also FARREN and others (479).]
964. MOSER, J. Neue afrikanische *Cetoniden*-Arten. Berlin. ent. Zeitschr. xlix, pp. 59-70. [*Coleoptera*.]
965. ——. Neue *Valgiden*-Arten. T. c. pp. 266-272. [*Coleoptera*.]
966. MOSS, A. M. Switzerland and its butterflies. Tr. Norfolk Soc. vii, pp. 674-681. [*Lepidoptera*.]
967. MOSSE, A. H. Locusts in Gujarat. J. Bombay Soc. xv, p. 528. [*Orthoptera*.]
968. MUCKERMANN, H. *Formica sanguinea*, subsp. *rubicunda* Em. and *Xenodusa cava* Lec.; or the discovery of pseudogynes in a district of *Xenodusa cava*. Ent. News Philad. xv, pp. 339-341, pl. xx. [*Hymenoptera*.]

969. MUIR, F. & SHARP, D. On the egg-cases and early stages of some *Cassididae*. Tr. ent. Soc. London 1904, pp. 1-24, pls. i-v. [*Coleoptera*.]
970. MÜLLER, J. Die *Koleopterengattung Apholeuonus* Reitt. Ein Beitrag zur Kenntnis der dalmatinischen Höhlenfauna. SB. Ak. Wien cxii, Abt. i, pp. 77-90, pl. i.
971. —. Zwei neue Höhlensilphiden von der Balkanhalbinsel. München. Kol. Zeitschr. ii, pp. 38-42. [*Coleoptera*.]
972. —. Beschreibungen neuer dalmatinischer *Koleopteren*. II. T. c. pp. 208, 210.
973. *NASSONOW, N. Zur Morphologie der Versonschen und Steinschen Drüsen der Insekten. Warsaw, 1903.
In Russian, cf. Zeitschr. wiss. Zool. lxxvi, p. 364.
974. NAVÁS, LONGINOS. Algunos *Neurópteros* de España nuevos. Bol. Soc. Aragon. ii, pp. 99-109.
975. —. Notas zoológicas. I. Las *Chrysopas* (Insectos *Neurópteros*). Bol. Soc. Aragon. iii, pp. 115-167. II. *Neuropteros* de la provincia de Barcelona cogidos por el P. EUGENIO SAZ, S.J. T. c. pp. 122-128. III. Algunos Insectos de Kurseong en la Cordillera del Himalaya. T. c. pp. 129-134. IV. Ortópteros de Mindanao (Filipinas). T. c. pp. 134-139. V. Excursion al Moncayo. T. c. pp. 139-167. VI. Excursion de la Sociedad Aragonesa de Ciencias naturales á la Sierra de Guara. T. c. pp. 190-201.
976. —. Notas *Neuropterológicas*. v. *Myrmeleonidos* de España. Butl. Inst. Catalan. i, pp. 6-10, 19-25, pl. i.
977. NEAVE, S. A. On a large collection of *Rhopalocera* from the shores of the Victoria Nyanza. Nov. Zool. xi, pp. 323-363, pl. i.
978. NEEDHAM, J. G. New dragon-fly nymphs in the United States National Museum. P. U. S. Mus. xxvii, No. 1371, pp. 685-720, pls. xxxviii-xliv. [*Odonata*.]
979. NEIRET, —. Paludisme et moustiques. Bull. econ. Madagascar iv, pp. 251-257.
980. NEWBERRY, E. A. *Ocyusa nigrata* Fairm., a species of *Coleoptera* new to Britain, with remarks on the other British species of *Ocyusa*. Ent. Mag. xl, p. 251.
981. NICOLAS, A. Note critique sur les *D[orcadion]* *neilense* Esc., *almarzense* Esc. (et v. v. *urbionense* Esc. et *costatum* Esc.) *villosladense* Esc. Bol. Soc. Aragon. iii, pp. 35-40. [*Coleoptera*.]
982. NORMAND, H. Catalogue raisonné des *Psélaphides* de Tunisie. Abeille xxx, pp. 209-222. [*Coleoptera*.]
983. —. La chasse aux *Coléoptères* hypogés dans les Albères. Echange xx, pp. 63, 69, 76.
984. NOUALHIER, M. & MARTIN, J. *Hémiptères* recueillis par M. A. Pavie. Mission Pavie iii, pp. 167-185, pls. x, xi.
985. NURSE, C. G. New species of Indian *Hymenoptera* *Apidae*. J. Bombay Soc. xv, pp. 557-585.
986. —. New species of Indian *Hymenoptera*. Op. cit. xvi, pp. 19-26.
987. OBERTHÜR, C. Études de *Lépidoptérologie* comparée. Fasc. 1. Rennes, 1904, 8vo, pp. 1-77, pls. i-vi.

988. [OBERTHÜR, C. Description d'une nouvelle espèce de *Sphingides*. Bull. Soc. ent. France 1904, pp. 13, 14. [*Lepidoptera*.]
989. —. Descriptions de nouveaux *Sphingides*. T. c. pp. 76–78. [*Lepidoptera*.]
990. OHAUS, F. Revision der *Anoplognathiden* (*Coleoptera Lamellicornia*). Stettin. Ent. Zeit. lxx, pp. 57–175, pls. i, ii.
991. —. Revision der Amerikanischen *Anoplognathiden*. Part I. T. c. pp. 254–341, pl. iii. [*Coleoptera*.]
992. —. Zur Biologie des *Geotrupes vernalis* L. Verh. Ver. Hamburg Unterh. xii, pp. 103–108. [*Coleoptera*.]
993. OLDENBERG, L. Die Gattung *Saucropus* Lw. (Dipt.). Zeitschr. Hym. Dipt. iv, pp. 65–81, pl. 1.
994. OLIVIER, E. Faune de l'Allier. Ordre des *Hémiptères*. Rev. Sci. Bourbonnais xvii, pp. 89–96 etc.
995. —. Faune de l'Allier. Les Pulicidés. T. c. pp. 48–55. [*Aphaniptera*.]
996. ORBIGNY, H. D'. *Onthophagides* africains de la collection du Musée civique de Gênes. Ann. Mus. Genova xli, pp. 253–331. [*Coleoptera*.]
997. —. *Onthophagides* provenant du voyage de M. L. Fea dans l'Afrique occidentale. T. c. pp. 416–448. [*Coleoptera*.]
998. —. Espèces nouvelles d'*Onthophagus* africains de la collection du Musée royal de Belgique. Ann. Soc. ent. Belgique xlviii, pp. 204–222. [*Coleoptera*.]
— [See also FELSCHÉ & D'ORBIGNY (494).]
999. ORMEROD, E. (the late). Eleanor Ormerod, LL.D., economic Entomologist, autobiography and correspondence. Edited by ROBERT WALLACE. London, 1904, 348 pp. [Cf. WALLACE (1468A).]
1000. OSBORN, H. Note on morphology of certain clasping organs in the *Pediculidæ*. Ohio Natural. iv, pp. 107, 108.
1001. —. Notes on S. American *Hemiptera-Heteroptera*. Op. cit. v, pp. 195–204.
1002. —. A suggestion in nomenclature. Bull. U. S. Dep. Agric. Ent. xlv, pp. 56–60.
1003. OSBURN, R. C. The *Diptera* of British Columbia. Second part. The *Syrphidæ*. Canad. Ent. xxxvi, pp. 213–220, 257–282.
For part I, see HINE (688).
1004. OSTEN SACKEN, C. R. Record of my life work in Entomology. Part third. List of my entomological publications from 1854 to 1904, pp. 205–240, addenda and portrait. Heidelberg, 1904.
1005. PACKARD, A. S. Opisthenogenesis, or the development of segments, median tubercles and markings a tergo. P. Amer. Phil. Soc. xliii, pp. 289–294.
1006. —. The origin of the markings of organisms (*Pœcilogenesis*) due to the physical rather than to the biological environment; with criticisms of the Bates-Müller hypotheses. T. c. pp. 393–450.
1007. —. Studies on the transformation of *Saturnian* moths, with notes on the life-history and affinities of *Brahmæa japonica*. P. Amer. Ac. xxxix, No. 22, pp. 545–578. [*Lepidoptera*.]

1008. [PACKARD, A. S.]. The colossal silk-worm moths of the genera *Attacus* and *Rothschildia*. Ent. News Philad. xv, pp. 4-6. [*Lepidoptera*.]
1009. —. Sound produced by a Japanese Saturnian caterpillar. J. N. York Ent. Soc. xii, p. 92. [*Lepidoptera*.]
1010. PANDELLÉ, L. Catalogue des *Muscides* de France. Supplement to Rev. Ent. franc. xxiii, pp. 1-41. [*Diptera*.]
Pp. 34-41 form the conclusion of his work on the *Muscidæ* of France.
1011. PARKER, G. H. Phototropism of *Vanessa antiopa*. Mark Anniv. Vol. pp. 453-469, pl. xxxiii. [*Lepidoptera*.]
— [See also FIELDE & PARKER (508).]
- 1011A. PAVIE, A. Mission Pavie. Indo-Chine 1879-1895. Études diverses. III. Recherches sur l'histoire Naturelle de l'Indo-Chine orientale. Paris, 1904, 4to, xxi+550 pp., xxv pls.
Most of the contents are republication; but the excellent plates are new.
1012. *PAZOS Y CABALLERO, J.-H. Del exterior é interior del Mosquito. Apuntes sobre la anatomia y morfologia. Rev. medic. trop. 1903.
1013. PEARSALL, R. C. A review of our *Geometrid* classification. Canad. Ent. xxxvi, pp. 208-210, 342, 344. [*Lepidoptera*.]
1014. PECHLAUER, E. Zum Nestbau der *Vespa germanica*. Verh. Ges. Wien liv, pp. 77-79. [*Hymenoptera*.]
1015. PÉNEAU, J. Notules hémiptérologiques. Bull. Soc. Ouest France (2) iv, pp. 257-261.
1016. PENECKE, K. A. Ein neuer *Microsauras* aus der Herzegowina. Wien. ent. Zeit. xxiii, p. 135. [*Coleoptera*.]
1017. PENZIG, O. Noterelle biologiche. I. Sopra una galla di *Toddalia aculeata* Pers. II. Un caso di simbiosi fra formiche e *Cicadelle*. Atti Soc. Ligustica xv, pp. 62-71, pls. i, ii.
1018. PÉREZ, C. Sur les *Phloeæ Hémiptères* mimétiques de Lichens. C.R. Soc. Biol. lvi, pp. 429, 430.
1019. —. Sur les sphères de granules dans la metamorphose des *Muscides*. T. c. pp. 781-783. [*Diptera*.]
1020. —. Digestion intra-cellulaire des sarcolytes dans l'histolyse nymphale des *Muscides*. T. c. pp. 992-994. [*Diptera*.]
1021. PÉREZ, J. Des effets des actions mécaniques sur le développement des œufs non fécondés du ver à soie. Pr.-verb. Soc. Sci. Bordeaux 1896/97, pp. 9, 10.
1022. —. Sur les Termites. T. c. 1895/96, pp. 65, 66.
1023. PERGANDE, T. North American *Phylloxerinae* affecting *Hicoria* (carya) and other trees. P. Davenport Ac. ix, pp. 185-273, pls. i-xxi. [*Aphidæ*.]
1024. —. On some of the *Aphides* affecting grains and grasses of the United States. Bull. U. S. Dep. Agric. Ent. xlv, pp. 5-23.
1025. —. *Aphididae* of the expedition. [in] Alaska viii, pp. 119-125.
This and the following are reprints of memoirs recorded in 1900.
1026. —. *Formicidae* of the expedition. [in] Alaska ix, pp. 113-117. [*Hymenoptera*.]
1027. PÉRINGUEY, L. Descriptive catalogue of the *Coleoptera* of South Africa (*Lucanidae* & *Scarabæidae*). Tr. S. African Soc. xiii, pp. 1-293, pls. i-iv.

1028. [PÉRINGUEY, L.] Sixth contribution of the South African *Coleopterous* fauna. Description of new species of *Coleoptera* in the collection of the South African Museum. Ann. S. African Mus. iii, pp. 167-299, pl. xiii.
1029. —. Some new *Coleoptera* collected by Rev. Henri A. Junod at Shilouvane, near Leydsdorp, in the Transvaal. Nov. Zool. xi, pp. 448-450.
1030. PERKINS, R. C. L. History of the occurrence of the sugar-cane leaf-hopper, *Perkinsiella saccharicida* Kirkaldy in Hawaii. Revised edition Rep. exp. Stat. Hawaii 1904, pp. 43-66. [*Homoptera*.]
1031. PERRAUD, J. Sur la perception des radiations lumineuses chez les Papillons nocturnes et l'emploi des lampes-pièges. C.R. Ac. Sci. cxxxviii, pp. 992-994. [*Lepidoptera*.]
1032. —. Sur la perception des radiations lumineuses chez les Papillons nocturnes et l'emploi des lampes-pièges. C.R. Soc. Biol. lvi, pp. 619-691.
1033. PETERSEN, W. Über indifferente Charaktere als Artmerkmale. Biol. Centrbl. xxiv, pp. 423-431 and 467-473.
Relates to a review of his previous work by Jordan (cf. Zool. Rec. 1903) and includes that physiological considerations must be included in discussions as to the origin of species.
1034. —. Ueber *Dendrolimus pini* L. und *D. segregatus* Butl. (*Lepidoptera*, *Lasiocampidae*). Rev. Russe Ent. iv, pp. 163-166.
1035. PETRI, K. Beschreibung einiger neuer *Lixus*-Arten. Wien. ent. Zeit. xxiii, pp. 65-77. [*Coleoptera*.]
1036. —. Bestimmungs-Tabelle der mir bekannt gewordenen Arten der Gattung *Lixus* Fab. aus Europa und den angrenzenden Gebieten. T. c. pp. 183-198. [*Coleoptera*.]
1037. —. Fünf neue *Lixus*-Arten. Ann. Mus. Hungar. ii, pp. 233-236. [*Coleoptera*.]
1038. PETRY, A. *Nepticula thuringiaca* n. sp. Ent. Zeit. Stettin lxx, pp. 179-181. [*Lepidoptera*.]
1039. —. Beschreibung neuer *Microlepidopteren* aus Korsika. T. c. pp. 242-254.
1040. —. Zwei neue *Gelechiiden* aus den Central-Pyrenäen. Deutsche ent. Zeitschr. Iris xvii, pp. 1-6. [*Lepidoptera*.]
1041. PEYERIMHOFF, P. DE. Description d'un nouveau *Silphide* cavernicole de l'Ardèche. Bull. Soc. ent. France 1904, pp. 185-187. [*Coleoptera*.]
1042. —. *Coléoptères* cavernicoles inédits recueillis dans les Basses-Alpes. T. c. pp. 201-203, and 214-216.
1043. —. Études sur le genre *Tychus* Leach. Abeille xxx, pp. 169-180. [*Coleoptera*.]
1044. —. La larve des Insectes Metabola et les idées de Fr. Brauer (Fin.). Feuille Natural. xxxiv, pp. 41-45.
1045. PHILIPTSCHENKO, J. Zur Anatomie der *Campodea staphylinus* Westw. Trudui St. Peterb. Obshch. xxxv, pp. 440-454 (in Russian); résumé in German pp. 455, 456.
1046. PHILLIPS, E. F. Variation in Bees.—a reply to Mr Lutz. Biol. Bull. vii, pp. 70-74.

- 1046A. [PHILLIPS, E. F.] The structure and development of the compound eye of the bee. Amer. Natural. xxxviii, pp. 520, 521. [*Hymenoptera*.]
1047. PHILPOTT, A. Notes on Southern *Lepidoptera*. Tr. N. Zealand Inst. xxxvi, pp. 161-170.
1048. PHISALIX, C. Recherches sur le venin d'Abeilles. C.R. Ac. Sci. cxxxix, pp. 326-329. [*Hymenoptera*.]
1049. —. Recherches sur le venin d'Abeilles. C.R. Soc. Biol. lvii, pp. 198-201. [*Hymenoptera*.]
1050. —. Recherches sur le venin des Abeilles. Bull. Soc. ent. France 1904, pp. 218-220.
1051. PIC, M. Sur les *Buprestides* principalement paléarctiques du Genera de Wytzman. Bull. Soc. zool. France xxix, pp. 135-138. [*Coleoptera*.]
1052. —. Description de *Coléoptères* nouveaux. Naturaliste 1904, pp. 56, 57, 103, 104.
1053. —. *Anthicides* nouveaux des collections du Muséum de Paris. Bull. Mus. Paris 1904, pp. 119-122. [*Coleoptera*.]
1054. —. Description de deux *Ptinides* et d'un *Notoxus* faisant partie des collections du Muséum de Paris. T. c. pp. 226-228. [*Coleoptera*.]
1055. —. Un nouveau *Malacoderme* de l'Afrique Australe. Bull. Soc. ent. France 1904, p. 12. [*Coleoptera*.]
1056. —. Descriptions de *Coléoptères* nouveaux de Madagascar. T. c. pp. 72, 73.
1057. —. Description d'un *Anthicus* nouveau de l'Amérique méridionale. T. c. p. 118. [*Coleoptera*.]
1058. —. *Coléoptères* asiatiques nouveaux. T. c. pp. 287, 289.
1059. —. Description d'un *Cardiophorus* Eschsch. de Syrie. T. c. p. 298. [*Coleoptera*.]
1060. —. *Coléoptères* français nouveaux. Echange xx, p. 2.
1061. —. Notes et descriptions. T. c. pp. 2-4, 9-11. [*Coleoptera*.]
1062. —. *Coléoptères* africains nouveaux. T. c. pp. 11, 12.
1063. —. *Longicornes* paléarctiques nouveaux. T. c. pp. 17, 18. [*Coleoptera*.]
1064. —. Diagnoses de seize *Coléoptères* exotiques appartenant à diverses familles. T. c. pp. 18-20.
1065. —. Diagnoses de *Coléoptères* asiatiques provenant surtout de Siberia. T. c. pp. 25-27.
1066. —. Diagnoses de *Malacodermes* africains et américains. T. c. pp. 27-29. [*Coleoptera*.]
1067. —. Essai dichotomique ser les "*Eupactus*" Lec. et genres voisins du Brésil. T. c. pp. 31, 32, 36, 37. [*Coleoptera*.]
1068. —. Diagnoses de *Coléoptères* paléarctiques et exotiques. T. c. pp. 33-36.
1069. —. Sur divers *Lariidæ* ou *Bruchidæ* et *Urodon*. T. c. pp. 39, 40.
1070. —. Six *Anthicides* nouveaux du Brésil. T. c. pp. 44, 45. [*Coleoptera*.]

1071. [PIC, M.] Descriptions d'un *Bryaxis* et de plusieurs *Malacodermes* ou *Rhynchophores*. Echange xx, pp. 49-51. [*Coleoptera*.]
1072. —. Diagnoses de divers *Coléoptères* d'Europe et Turquie d'Asie. T. c. pp. 57, 58.
1073. —. Diagnose d'un "*Clytus*" du mont Taurus. T. c. p. 65. [*Coleoptera*.]
1074. —. Nouveaux *Coléoptères* de l'Afrique australe. T. c. pp. 65, 66.
- 1075. —. *Coléoptères* nouveaux de la Turquie d'Asie. T. c. pp. 73, 74.
1076. —. Nouvelles espèces et variétés de *Coléoptères* paléarctiques. T. c. pp. 81, 82.
1077. —. Diagnoses ou descriptions abrégées de *Coléoptères* paléarctiques. T. c. pp. 89-94.
1078. —. Un *Anthicus* nouveau de la Somalie. Ann. Mus. Genova xli, p. 92. [*Coleoptera*.]
1079. —. Notes et diagnoses sur divers *Tychiini*. Bull. Soc. Autun xv, pp. 139-148. [*Coleoptera*.]
1080. PICARD, F. Note sur l'instinct du *Pompilus viaticus*. Feuille Natural. xxxiv, pp. 142-145.
1081. PICTET, A. Variations chez les papillons. Arch. Sci. Phys. Nat. (4) xvii, pp. 110-112.
1082. —. L'Instinct et le sommeil chez les Insectes. T. c. pp. 447-451.
1083. PIEPERS, M. Ueber die sogenannten "Schwanze" der Lepidoptera. Deutsche ent. Zeitschr. Iris xvi, p. 247-285.
1084. — & SNELLEN. Énumération des *Lépidoptères Hétérocères* de Java. v. Fam. viii, *Lithosiidae*. Tijdschr. Ent. xlvii, pp. 136-167, pls. x, xi.
1085. — & —. Énumération des *Lépidoptères Hétérocères* de Java. iv. Fam. vii, *Syntomidae*. T. c. pp. 42-62.
1086. PIERCE, W. D. Some Hypermetamorphic Beetles and their Hymenopterous Hosts. Stud. Univ. Nebraska iv, pp. 153-190, 2 pls. [*Coleoptera*, *Hymenoptera*.]
1087. PIERRE, —. L'éclosion des œufs de *Lestes viridis*. Ann. Soc. ent. France 1904, pp. 477-484, pl. iv. [*Odonata*.]
1088. PLATEAU, F. A propos de la reproduction des Abeilles. [Letter.] Naturaliste 1904, p. 61.
1089. PLOTNIKOW, W. Über die Häutung und über einige Elemente der Haut bei den Insekten. Zeitschr. wiss. Zool. lxxvi, pp. 333-366, pls. xxi, xxii.
1090. *—. Über die Häutung der Insekten. Tagb. xi Versamml. Russ. Naturf. 1901.
In Russian, cf. Zeitschr. wiss. Zool. lxxvi, p. 364.
1091. POMERANTZEV, D. Notes biologiques sur les *Coléoptères* vivant sous les écorces et utiles dans la sylviculture. VII. Rev. Russe Ent. iv, pp. 85-89.
Entirely in Russian.
1092. POOL, C. J. C. *Aulonium sulcatum* Oliv. (*trisulcum* Fourc.). A species of Colydiid *Coleoptera* new to Britain. Ent. Rec. xvi, p. 310.

1093. POPPIUS, B. Drei neue Arten der Gattung *Tachinus* Grav. aus Ost-Sibirien. *Ofv. Finska Forh.* xlv, No. 13, 6 pp. [*Coleoptera.*]
1094. —. Neue paläarctische *Coleopteren*. T. c. No. 16, 14 pp.
1095. —. Ueber einige *Lathridiiden*. *Medd. Soc. Faun. Fenn.* 1902/03, pp. 84–91. [*Coleoptera.*]
1096. —. Neue palaearktische *Omaliiden*. T. c. pp. 106–111. [*Coleoptera.*]
1097. PORRITT, G. T. List of Yorkshire *Lepidoptera*. London, 1904, 8vo, pp. xvi + 193–269 and Tr. Yorkshire Union 30.
1098. PORTA, A. Sulla filogenia degli *Scarabæidi* e dei *Curculionidi*. *Atti Soc. Modena* xxxv, pp. 1–6. [*Coleoptera.*]
1099. PORTER, C. E. Lista de los *Véspidos* di Chile, extractada del Genera insectorum de M. P. Wytzman i adicionada de notas. *Revist. chilena* viii, pp. 193–197. [*Hymenoptera.*]
1100. PORTEVIN, G. Remarques sur les Nécrophages du Muséum et description d'espèces nouvelles. *Bull. Mus. Paris* ix, pp. 329–336. [*Coleoptera.*]
1101. —. Contribution au catalogue des *Diptères* de Normandie. *Feuille Natural.* xxxiv, pp. 209–213. [*Syrphidae.*]
1102. POUJADE, G. A. *Lépidoptères* recueillis par M. A. Pavie en Indo-Chine. *Mission Pavie* iii, pp. 222–251, pl. xii bis.
1103. POULTON, E. B. President's Address. *P. ent. Soc. London* 1904, pp. xcv.
 "The bearing of the study of Insects upon the question, 'Are acquired characters hereditary?'"
 —. [See also LEIGH (871), SANDERS (1206), and SAUNDERS (1214).]
1104. POWELL, B. P. The development of wings of certain beetles, and some studies of the origin of the wings of insects. *J. N. York Ent. Soc.* xii, pp. 237–243, pls. xi–xvii, and xiii, pp. 5–22. [*Coleoptera.*]
1105. POYNTON, J. W. Notes on an Insect found in some hot springs at Taupo. *Tr. N. Zealand Inst.* xxxvi, pp. 170–172. [*Diptera.*]
1106. PREISS, P. Neue *Cetoniden* aus Deutsch-Ostafrika. *Jahrb. nassau. Ver.* pp. 13–28, pl. i. [*Coleoptera.*]
1107. PRENANT, A. Questions relatives aux cellules musculaires. IV. Le substance musculaire. *Arch. zool. exp. Notes* 1904, pp. c–civ, and cxiii–cxvii, and cxxix–cxxxviii.
1108. PROUT, L. B. Some recurrent phases of variation in the *Larentiidae*. *Entomologist* 1904, pp. 151–156. [*Lepidoptera.*]
1109. PUEL, J. Description d'un *Anisodactylus* nouveau du Midi de la France. *Bull. Soc. ent. France* 1904, p. 160. [*Coleoptera.*]
1110. PÜNGELER, R. Neue palaearktische *Macrolepidopteren*. *Deutsche ent. Zeitschr. Iris* xvi, pp. 286–301, pl. vi.
1111. —. Neue *Macrolepidopteren* aus Centralasien. *Soc. ent.* xix, pp. 121, 122, 130, 131.
1112. QUAIL, A. Notes on *Cossidae*. *Entomologist* 1904, pp. 93–97, pl. v. [*Lepidoptera.*]

1113. [QUAIL, A.] On the tubercles of thorax and abdomen in first larval stage of *Lepidoptera*. T. c. pp. 269-271, pl. ix.
1114. RAFFRAY, A. Genera et Catalogue des *Psélaphides*. Ann. Soc. ent. France 1903, pp. 484-604, and 1904, pp. 1-476, 3 pls. Addenda t. c. pp. 635-658.
Includes also a very large number of new species.
1115. RAGUSA, E. Osservazioni su alcuni *Coleotteri* di Sicilia, notati o omessi nel nuovo Catalogo dei *Coleotteri* d'Italia del Dott. Stefano Bertolini (Siena 1899). Natural. Sicil. xvii, pp. 1-9.
1116. RAINBOW, W. J. Notes on fleas parasitic on the Tiger cat. Rec. Austral. Mus. v, pp. 53-55. [*Aphaniptera*.]
1117. —. A new "bat tick." T. c. pp. 78, 79, pl. ix. [*Diptera*.]
1118. —. The mating of *Cyclochila australasie* Dou. and *Thopha saccata* Amyot. T. c. pp. 116, 117. [*Homoptera*.]
1119. —. Note on *Cicindela junci* and descriptions of two new beetles. T. c. pp. 245-247. [*Coleoptera*.]
1120. RAYNOR, G. H. & DONCASTER, L. Experiments on heredity and sex determination. Rep. Brit. Ass. 1904, p. 594.
1121. REBEL, H. Zwei neue *Saturniiden* aus Deutsch-Ostafrika. Ann. Hofmus. Wien xix, pp. 64-69, pls. ii, iii. [*Lepidoptera*.]
1122. —. Studien über die *Lepidopteren*fauna der Balkanländer. II Teil. Bosnien und Herzegowina. T. c. pp. 97-377, pls. iv, v.
1123. REED, E. C. Los *Dípteros* pupíparos de Chile. Revist. chilena viii, pp. 149-153.
1124. RÉGIMBART, M. *Dytiscides* et *Gyrinides* recueillis au Vénézuéla et à la Guyane par M. F. Geay et faisant partie des collections du Muséum d'Histoire naturelle. Bull. Mus. Paris 1904, pp. 224-226. [*Coleoptera*.]
1125. —. *Dytiscidae* et *Gyrinidae* recueillis par Mr L. Fea en Afrique occidentale. Ann. Mus. Genova xli, pp. 65-68. [*Coleoptera*.]
1126. REH, L. Zur naturgeschichte mittel- und nordeuropäischer Schildläuse (conclusion). Allg. Zeitschr. Ent. ix, pp. 12-36. [*Coccidae*.]
1127. —. Verbreitung und Nährpflanzen einiger *Diaspinen*. T. c. pp. 171-178. [*Coccidae*.]
1128. REHN, J. A. G. Studies in Old world *Forficulids* or earwigs, and *Blattids* or Cockroaches. P. U. S. Mus. xxvii, No. 1363, pp. 539-560. [*Orthoptera*.]
1129. —. Studies in American *Mantids* or soothsayers. T. c. No. 1364, pp. 561-574. [*Orthoptera*.]
1130. —. Studies in the *Orthopterous* family *Phasmidæ*. P. Ac. Philad. lvi, pp. 38-107.
1131. —. Notes on *Orthoptera* from Northern and Central Mexico. T. c. pp. 513-549.
1132. —. Notes on *Orthoptera* from Arizona. New Mexico, Colorado. T. c. pp. 562-575.
1133. —. Studies in the *Orthopterous* subfamilies *Acrydiinæ* (*Tettiginæ*), *Eumastacinæ* and *Proscopinæ*. T. c. pp. 658-683.

1134. [REHN, J. A. G.] & HEBARD, M. The *Orthoptera* of Thomas county Georgia, and Leon county Florida. T. c. pp. 774-802.
1135. —. A new species of roach of the genus *Kakerlac* (*Loboptera* auct.) from Southern Texas. Psyche xi, p. 72. [*Orthoptera*.]
1136. —. A new *Mantis* of the genus *Stagmatoptera* from Nicaragua. Canad. Ent. xxxvi, p. 107. [*Orthoptera*.]
1137. —. A new *Melanoplus* from New Jersey. Ent. News Philad. xv, p. 85. [*Orthoptera*.]
1138. —. A new roach of the genus *Chorisoneura* from South Carolina. T. c. p. 164. [*Orthoptera*.]
1139. —. Two new species of North American *Stenopalmatinae*. T. c. pp. 280-282. [*Orthoptera*.]
1140. REICHENAU, W. VON. Einiges über die *Macrolepidopteren* unseres "Gebietes unter Aufzählung sämtlicher bis jetzt beobachteter Arten, zugleich als Engänzung von" die Schuppenflügler (Lepidopteren) des Klg. Reg.-Bezirks Wiesbaden und ihre Entwicklungsgeschichte von Dr Adolf Rössler. (Jahrbuch 1880 & 1881; Jahrgang 33 & 34.) Erster Teil: Die Tafalter, Schwärmer und spinner. Jahrb. nassau. Ver. lvii, pp. 107-167.
1141. REITTER, E. Uebersicht der mir bekannten palaearktischen Arten der *Coleopteren*-Gattung *Dicercia* Eschsch. Wien. ent. Zeit. xxiii, pp. 21-24.
1142. —. Ein neuer *Bathyscia* aus der Herzegowina. T. c. p. 26. [*Coleoptera*.]
1143. —. *Coleopterologische* Notizen. T. c. pp. 24, 25, 83, 84, 259, 260.
1144. —. Ueber neue und wenig gekannte *Histeriden*. T. c. pp. 29-36. [*Coleoptera*.]
1145. —. Eine neue *Mycetaeiden*-Gattung aus Italien. T. c. pp. 41, 42. [*Coleoptera*.]
1146. —. *Alexia maritima* n. sp. T. c. p. 45. [*Coleoptera*.]
1147. —. *Pselaphus globiventris* n. sp. T. c. p. 46. [*Coleoptera*.]
1148. —. Bestimmungstabelle der *Coleopteren*-Gattung *Cionus* Clairv. Aus Europa und den angrenzenden Ländern. T. c. pp. 47-64.
1149. —. Über vier *Coleopteren* aus der palaearktischen Fauna. T. c. pp. 81, 82.
1150. —. Analytische Revision der *Coleopteren*-Gattung *Eusomus* Germ. T. c. pp. 86-91.
1151. —. Drei neue *Coleopteren* aus Europa. T. c. pp. 147, 148.
1152. —. Sechzehn neue *Coleopteren* aus Europa und den angrenzenden Ländern. T. c. pp. 151-160.
1153. —. Übersicht über die mit *M. piceus* F. zunächst verwandten *Mycetophagus*-Arten aus Europa und den angrenzenden Ländern. T. c. pp. 165, 166. [*Coleoptera*.]
1154. —. Ein neuer blinder *Brachynus* aus Deutsch-Ostafrika. T. c. p. 178. [*Coleoptera*.]
1155. —. Sechs neue *Coleopteren* aus der palaearktischen Region. T. c. pp. 255-258.

1156. [REITTER, E.] Neue Arten des *Coleopteren*-Genus *Athous* Esch. aus Spanien. Bol. Soc. espan. iv, pp. 236-240.
1157. REITZENSTEIN, W. v. Untersuchungen über die Entwicklung der Stirn- und Fühleraugen von *Periplaneta orientalis* und *Cloëon*. Zool. Jahrb. Anat. xxi, pp. 161-180, pls. ix, x.
1158. REUTER, E. Bidrag till kännedom om *Microlepidoptera*-faunan Ålands och Åbo Skärgårdar. II. Acta Soc. Faun. Fenn. xxvi, No. 1, 66 pp.
1159. —. Två för Finland nya *Coccider*. Medd. Soc. Faun. Fenn. 1902-03, pp. 66, 67.
1160. —. Für die finländische Fauna neue Schmetterlinge. T. c. pp. 147-162. [*Lepidoptera*.]
1161. REUTER, O. M. Neue Beiträge zur Kenntniss der *Copeognathen* Finnlands. Acta Soc. Faun. Fenn. xxvi, No. 9, 26 pp., 3 pls. [*Psocidæ*.]
1162. —. Uebersicht der paläarktischen *Stenodema*-Arten. Ofv. Finska Forh. xlv, No. 15, 21 pp. [*Heteroptera*.]
1163. —. Bemerkungen über einige *Phimodera*-Arten. T. c. No. 17, 15 pp. [*Heteroptera*.]
1164. —. *Capsidæ persicæ* a Do. N. A. Zarudny collectæ, enumeratæ novæque species descriptæ. Annuaire Mus. St. Petersb. ix, pp. 5-16. [*Hemiptera*.]
1165. —. *Capsidæ duæ* (*Hemiptera-Heteroptera*) e Corea. Rev. Russe Ent. iv, pp. 34-36.
1166. —. Description of a new species of the genus *Globiceps* [*Capsidæ*] from Spain. Ent. Mag. xl, p. 51. [*Hemiptera*.]
- 1166A. —. *Capsidæ* ex Abessinien et regionibus confinibus enumeratæ novæque species descriptæ. Ofv. Finska Forh. xlv, No. 6, 18 pp., 1 pl. [*Hemiptera*.]
- 1166B. —. *Capsidæ chinenses* et thibetanæ hactenus cognitæ enumeratæ novæque species descriptæ. T. c. No. 16, 23 pp., pl. ii. [*Hemiptera*.]
1167. —. *Capsidæ* novæ rossicæ. II. Op. cit. xlv, No. 4, 17 pp. [*Hemiptera*.]
1168. —. Ad cognitionem *Capsidarum* æthiopicarum. T. c. No. 10, 8 pp. [*Hemiptera*.]
1169. —. *Capsidæ palæarcticæ* novæ et minus cognitæ. T. c. No. 14, 18 pp. [*Hemiptera*.]
1170. RIBAGA, C. Attività del *Novius cardinalis* Muls. contro l'*Icerya purchasi* Mask. in Italia. Osservazioni sulla Biologia del *Novius cardinalis*. Riv. Patol. Veg. x, pp. 299-323.
1171. —. Sul genere *Ectopsocus* MacLachl. e descrizione di una nuova varietà dell'*Ectopsocus briggsi* MacLachl. Redia i, pp. 294-298.
1172. RICARDO, Miss G. Notes on the smaller genera of the *Tabaninæ* of the family *Tabanidæ* in the British Museum collection. Ann. Nat. Hist. xiv, pp. 349-372. [*Diptera*.]
1173. RILEY, W. A. The embryological development of the skeleton of the head of *Blatta*. Amer. Natural. xxxviii, pp. 777-810. [*Orthoptera*.]

1174. RIPPON, H. F. *Icones Ornithopterorum*, part 17, 10 pp., 4 pls. [*Lepidoptera*.]
1175. RIS, F. Ein unbekanntes Organ der *Phryganiden Oecetis notata* und *Oe. testacea*. Vierteljahrschr. Ges. Zurich xlix, pp. 370-374, pl. xii. [*Trichoptera*.]
1176. —. *Odonaten*. Hamburg. Magalhaen. Reise vii, 44 pp.
1177. RIVERA, M. J. El bruco de las arvejas (*Bruchus pisi*). Revist. chilena viii, pp. 25-42. [*Coleoptera*.]
1178. —. Biología de dos Coleópteros chilenos cuyas larvas atacan al trigo. T. c. pp. 241-254.
1179. RÖBER, J. Neue Schmetterlinge. Soc. ent. xix, pp. 105, 106. [*Lepidoptera*.]
1180. —. Neue *Caligo*-Arten. T. c. pp. 145, 146. [*Lepidoptera*.]
1181. ROBERTSON, C. Synopsis of *Anthophila*. Canad. Ent. xxxvi, pp. 37-43. [*Hymenoptera*.]
1182. —. Synopsis of *Prosopis* and *Colletes*, with supplementary notes and descriptions. T. c. pp. 273-278. [*Hymenoptera*.]
1183. ROCQUIGNY-ADANSON, G. DE. Expériences et observations sur la chenille processionnaire du pin. Feuille Natural. xxxiv, pp. 186, 187. [*Lepidoptera*.]
1184. ROGERS, L. Note on the rôle of the horse-fly in the transmission of Trypanosoma infection. Brit. Med. J. 1904, ii, pp. 1454, 1455.
1185. RÖHLER, E. Die antennalen Sinnesorgane von *Tryxalis*. Zool. Anz. xxviii, pp. 188-192. [*Orthoptera*.]
1186. ROMAN, A. Några svenska *Ichneumonid*-fynd. Ent. Tidskr. xxv, pp. 115-120. [*Hymenoptera*.]
1187. —. Sibirische *Ichneumon*en im schwedischen Reichsmuseum. T. c. pp. 138-150. [*Hymenoptera*.]
1188. ROSS, H. Die Gallenbildungen (Cecidien) der Pflanzen, deren Ursachen, Entwicklung, Bau und Gestalt. Ein Kapitel aus der Biologie der Pflanzen. Stuttgart, 1904, 8vo, 39 pp., 52 figg. and 1 pl.
1189. RÖSSIG, H. Von welchen Organen der Gallwespenlarven geht der Reiz zur Bildung der Pflanzengalle aus? Zool. Jahrb. Syst. xx, pp. 19-90, pls. iii-vi.
Untersuchung der Drüsenorgane der Gallwespenlarven, zugleich ein Beitrag zur postembryonalen Entwicklung derselben.
Abstract by HEYMONS, Zool. Zentrbl. 1905, pp. 101-103.
1190. ROSSUM, A. J. VAN. Levensgeschiedenis van *Cimbex fagi* Zadd. Tijdschr. Ent. xlvii, pp. 69-98, pls. iii-v. [*Hymenoptera*.]
1191. ROTHSCHILD, Hon. N. C. Further contributions to the knowledge of the *Siphonaptera*. Nov. Zool. xi, pp. 602-653, pls. vii-xvi.
1192. —. New species of *Siphonaptera* from Egypt. Entomologist 1904, pp. 1-4, pls. i, ii.
1193. —. Description of a new species of *Siphonaptera* from S. America. Revist. chilena viii, p. 147.
1194. ROTHSCHILD, Hon. W. *Lepidoptera* from British New Guinea, collected by Mr A. S. Meek. Nov. Zool. xi, pp. 310-322, pls. ii, iii.

1195. [ROTHSCHILD, Hon. W.] New *Sphingidæ*. T. c. pp. 435-440. [*Lepidoptera*.]
1196. —. A new African *Metanitis*. T. c. p. 451. [*Lepidoptera*.]
1197. —. New forms of butterflies. T. c. pp. 452-455. [*Lepidoptera*.]
1198. —. Two new *Saturniidaæ*. T. c. p. 601. [*Lepidoptera*.]
1199. —. A new subspecies of *Troides victoriæ*. T. c. p. 654. [*Lepidoptera*.]
1200. ROUBAUD, —. Sur les larves marines de *Dolichopodes* attribuées au genre *Aphrosylus* (Wlkr.). Bull. Mus. Paris ix, pp. 338-340. [*Diptera*.]
1201. ROVARA, F. A mezögazdaságra káros rovarokról. Verh. Ver. Presburg 1903, pp. 51-70.
1202. RUZSKY, M. Ueber die Ameisenfauna des Kaukasus und der Krim. Protok. Kazan. Univ. 1902-1903, No. 206, 33 pp.
1203. SAHLBERG, J. Entomologiska forskningsresor i Medelhafstrakterna och Centralasien företagna åren 1895-1896 samt 1898-1899. Ofv. Finska Forh. xlv, No. 1, pp. 1-38.
Reseberättelse III. Resor i Caucasien, Transcaspien och Turkestan.
1204. —. Nykomlingar till Finlands insektfauna. Medd. Soc. Faun. Fenn. 1902-1903, pp. 77-80. [*Coleoptera*, *Hymenoptera*.]
1205. SAMBON, L. W. The transmission of sleeping sickness by Flies of the genus *Glossina*. Brit. Med. J. 1904, i, pp. 696, 697.
1206. SANDERS, CORA B. On the *Lepidoptera Rhopalocera* collected by W. J. Burchell in Brazil, 1825-1830. Ann. Nat. Hist. xiii, pp. 305-323, 356-371, pl. vi.
Includes much matter by POULTON.
1207. SANDERS, J. G. Three new Scale insects from Ohio. Ohio Natural. iv, pp. 94-98, pl. viii. [*Coccidæ*.]
1208. —. The *Coccidæ* of Ohio. P. Ohio Ac. iv, pp. 27-80, 9 pls.
1209. SANDERSON, E. D. Insects mistaken for the Mexican Cotton Boll weevil. Bull. Texas Agric. exp. Stat. No. 74, 12 pp.
1210. —. The cotton boll weevil in Texas. Texas Agric. exp. Stat. Circular 3. [*Coleoptera*.]
1211. *SASAKI, C. On the feeding of the silkworms with the leaves of wild and cultivated Mulberry-trees. Bull. Agric. Tokyo Univ. vi, pp. 37-41.
Abstract, Allg. Zeitschr. Ent. ix, p. 358.
1212. SAUBER, A. Die Kleinschmetterlinge. Hamburgs und der Umgebung. Verh. Ver. Hamburg. Unterh. xii, pp. 1-60. [*Lepidoptera*.]
1213. —. Zwei neue palaearktische *Microlepidopteren* aus Centralasien. T. c. pp. 108, 109.
1214. SAUNDERS, E. *Hymenoptera aculeata* from Majorca (1901) and Spain (1901-2) with introduction, notes and appendix by E. B. POULTON. Tr. ent. Soc. London 1904, pp. 591-665.
1215. —. Aculeate *Hymenoptera*, collected in Tenerife by the Rev. A. E. Eaton, M.A., in the spring of 1904, with descriptions of new species. Ent. Mag. xl, pp. 200-203, 229-234.
1216. —. Two new British species of Aculeate *Hymenoptera*. T. c. pp. 10, 11.
1904. [VOL. XLI.]

1217. [SAUNDERS, E.] *Halictus fulvicornis* Kirb., distinct from *H. freygessneri* = *subfasciatus* Nyl. T. c. p. 250. [*Hymenoptera*.]
1218. SAUSSURE, H. DE, ANDRÉ, E. & DU BUYSSON, R. *Hyménoptères* recueillis par M. A. Pavie. Mission Pavie iii, pp. 188-203, pl. xii.
1219. *SAWAMURA, S. Investigations on the digestive enzymes of some *Lepidoptera*. Bull. Coll. Agric. Tokyo iv, pp. 337-347.
Brief abstract, Entomologist 1904, p. 11.
1220. SCHAEFFER, C. New genera and species of *Coleoptera*. J. N. York Ent. Soc. xii, pp. 197-236.
1221. SCHAPOSCHNIKOV, C. G. Notes sur les *Macrolépidoptères* de la partie centrale du Caucase septentrional-occidental. Annuaire Mus. St. Petersb. ix, pp. 189-259.
In Russian.
1222. —. Eine neue Erklärung der roten Färbung im Hinterflügel bei *Catocala* Schr. Biol. Centrbl. xxiv, pp. 514-520.
1223. SCHATZMAYR, A. Drei neue Arten der Kärntner *Koleopteren*-Fauna. Munchen. Kol. Zeitschr. ii, pp. 210-214.
1224. SCHAUDINN, F. Generations- und Wirtswechsel bei *Trypanosoma* und *Spirochaete*. (Vorläufige Mitteilung.) Arb. Kaiserl. Gesundheitsamte xx, pp. 387-439. [*Diptera*.]
Proboscis and feeding of *Culex*. Cf. LEON (874, 875).
1225. SCHAUS, W. New species of American *Heterocera*. Tr. Amer. ent. Soc. xxx, pp. 135-178.
1226. SCHENKLING, S. Die *Cleridengattung* *Phlæocopus* Guér. Ann. Mus. Genova xli, pp. 169-186. [*Coleoptera*.]
1227. SCHILSKY, J. Diagnosen neuer *Urodon*-Arten. Wien. ent. Zeit. xxiii, p. 78. [*Coleoptera*.]
1228. SCHMIDT, E. Beitrag zur Kenntniss der *Flatiden* von Sumatra. Stettin Ent. Zeit. lxxv, pp. 182-212. [*Homoptera*.]
1229. —. Neue und bemerkenswerthe *Flatiden* des Stettiner Museums. T. c. pp. 354-380. [*Homoptera*.]
1230. SCHMIDT, R. Ueber eine neue *Thorictus*-Art aus Ost-Buchara. Annuaire Mus. St. Petersb. viii, p. 389. [*Coleoptera*.]
1231. SCHMIEDEKNECHT, O. Opuscula Ichneumonologica. Fasc. v-vii, pp. 321-562. [*Hymenoptera*.]
1232. SCHNEE, P. Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur Fauna der Insel Nauru. Zool. Jahrb. Syst. xx, pp. 387-412.
Includes description of a new *Chrysopa* by KEMPNY.
1233. SCHNEIDER, G. *Anopheles claviger* Fabr. im Winter und Sommer. KB. Ver. Riga xlvii, pp. 41-45. [*Diptera*.]
1234. SCHÖTT, H. Études sur les *Collemboles* du Nord. Bih. Svenska Ak. xxviii, Afd. iv, No. 2, 48 pp., vi pls.
Overlooked in 1902.
1235. SCHOUTEDEN, H. *Hemiptera africana*. II. *Pentatomidæ*. Ann. Soc. ent. Belgique xlviii, pp. 135-144.
1236. —. Descriptions de *Scutellériens* nouveaux ou peu connus (*Pentatomides*). T. c. pp. 296-303. [*Hemiptera*.]

1237. [SCHOUTEDEN, H.] *Pentatómidos* de la Guinea española. Mem. Soc. Espan. i, pp. 141–160. [*Hemiptera*.]
1238. —. Faune entomologique de l'Afrique tropicale. *Rhynchota æthiopica*. 1. *Scutellerinæ* et *Graphosomatinae*. [Forms part of Ann. Mus. Congo, called also Ann. Mus. Tervueren.] pp. 1–131, pls. i, ii; also 12 unnumbered pages.
1239. —. *Heteroptera* fam. *Pentatomidæ*, subfam. *Scutellerinæ*. Wytsman Gen. Ins. fasc. xxiv, 98 pp., 5 pls.
1240. —. *Aphiden*. Hamburg. Magalhæn. Reise vii, 6 pp.
1241. SCHRÖDER, C. Eine Sammlung von Referaten neuerer Arbeiten über aussereuropäische, namentlich nordamerikanische Insekten-schädlinge und ihre Bekämpfung. Allg. Zeitschr. Ent. ix, pp. 60–93.
1242. —. Eine Sammlung von Referaten neuerer Arbeiten über die geschlechtsbestimmenden Ursachen, mit einzelnen kritischen Anmerkungen. T. c. pp. 110–126.
1243. —. Kritische Beiträge zur Mutations-, Selektions-, und zur Theorie der Zeichnungsphylogenie bei den *Lepidopteren*. T. c. pp. 215–223, 249–257, 281–297.
1244. —. Eine Sammlung von Referaten über neuere biometrische Arbeiten, mit einzelnen Anmerkungen. T. c. pp. 228–246.
1245. SCHROTTKY, C. Beitrag zur Kenntnis einiger südamerikanischer *Hymenopteren*. Allg. Zeitschr. Ent. ix, pp. 344–349.
1246. SCHULTHESS-RECHBERG, A. v. Beiträge zur Kenntnis der *Nortonia*-Arten. Zeitschr. Hym. Dipt. iv, pp. 270–283. [*Hymenoptera*.]
1247. SCHULTZ, O. Gynandromorphe (hermaphroditische) *Macrolepidopteren* der palaearctischen Fauna. iv. Berlin. ent. Zeitschr. xlix, pp. 71–116.
1248. —. Ueber einige Aberrationen aus dem Genus *Parnassius* Latr. T. c. pp. 274–281, pl. iii. [*Lepidoptera*.]
1249. —. Über einige in Schlesien gefangene interessante *Lepidopteren*-Aberrationen aus den Gattungen *Apatura* F. und *Limenitis* F. Abh. Ges. Grlitz xxiv, pp. 129–136.
1250. —. Einige nordische Tagfalter-Formen. T. c. pp. 137–140. [*Lepidoptera*.]
1251. —. Übersicht über die bisher bekannt gewordenen Fälle von Gynandromorphismus bei paläarktischen *Macrolepidopteren*, nach Familien, Gattungen und Species. Allg. Zeitschr. Ent. ix, pp. 304–310.
1252. SCHULTZE, A. Zwei neue paläarktische *Baris*-Arten. München. Kol. Zeitschr. ii, pp. 36–38. [*Coleoptera*.]
1253. SCHULZ, W. A. *Hymenopteren* Amazoniens. SB. Ak. München 1903, pp. 757–832, pl. i.
1254. —. Ein Beitrag zur Faunistik der paläarktischen *Spheciden*. Zeitschr. Ent. Breslau xxix, pp. 90–102. [*Hymenoptera*.]
1255. —. Ein Beitrag zur Kenntniss der papuanischen *Hymenopteren*-Fauna. Berlin. ent. Zeitschr. xlix, pp. 209–239.
1256. —. *Dipteren* als Ektoparasiten an südamerikanischen Tagfaltern. Zool. Anz. xxviii, p. 42.

1257. SCHUSTER, L. Der Pappelspinner (*Leucoma salicis* L.). Zool. Garten xlv, pp. 65-68. [*Lepidoptera.*]
1258. —. *Lepidopterologische* Notizen I. T. c. pp. 283-286.
1259. SCHWANGART, F. Studien zur Entodermfrage bei den *Lepidopteren*. Zeitschr. wiss. Zool. lxxvi, pp. 167-212, pls. xii, xiii.
1260. SCHWARZ, E. A. The insect-catching grass of Cuba. Science xx, pp. 761, 762.
1261. —. The cotton-boll weevil in Cuba. P. ent. Soc. Washington vi, pp. 13-17. [*Coleoptera.*]
1262. —. A new *Coccinellid* enemy of the San Jose Scale. T. c. p. 118. [*Coleoptera.*]
1263. —. Notes on North American *Psyllidæ*. Part I. T. c. pp. 234-245.
1264. —. *Coleoptera* of the expedition. [in] Alaska viii, pp. 169-185.
A reprint of a memoir recorded in 1900.
1265. SCHWARZ, O. Neue *Elateriden* aus Süd-Amerika. Deutsche ent. Zeitschr. 1904, pp. 49-80. [*Coleoptera.*]
1266. —. Diagnosis of a new species of *Elateridæ* in the Colombo Museum. Spolia Zeylan. ii, p. 46. [*Coleoptera.*]
1267. SCUDDER, S. H. & COCKERELL, T. D. A. A first list of the *Orthoptera* of New Mexico. P. Davenport Ac. ix, pp. 1-60, pls. i-iv.
1268. SEIDLITZ, G. Bericht über die wissenschaftlichen Leistungen im Gebiete der Entomologie während des Jahres 1902. Allgemeines und *Coleoptera*, pp. 1-290.
Published as a separate work, but taken from Arch. Naturg. 1904.
1269. SELLARDS, E. H. Some new structural characters of palaeozoic cockroaches. Amer. J. Sci. xv, pp. 307-315, pls. vii, viii. [*Orthoptera.*]
1270. —. A study of the structure of palaeozoic cockroaches, with descriptions of new forms from the coal measures. Op. cit. xviii, pp. 112-134, 213-227, pl. i. [*Orthoptera.*]
1271. SELYS LONGCHAMPS, M. DE. Recherches sur le développement embryonnaire de l'appendice du premier segment abdominal chez *Tenebrio molitor*. (Communication préliminaire.) Bull. Ac. Belgique 1904, pp. 413-447, 1 pl.
1272. SEMENOW, A. Synopsis *Elaphrorum* palæarcticorum subgeneris *Elaphroteri* Sem. gregem *El. riparii* (L.) efficientium. *Coleoptera*, *Carabidæ*. Rev. Russe Ent. iv, pp. 19-22.
1273. —. Analecta *Coleopterologica*. VI. T. c. pp. 37-39. VII. T. c. pp. 119-121. VIII. T. c. pp. 201, 202.
1274. —. Notice nécrologique sur T. S. Tschitschérine. (Avec portrait.) T. c. pp. 69-76.
1275. —. De duabus novis speciebus generis *Stomis* Clairv. e Transcaucasia (*Coleoptera*, *Carabidæ*). T. c. pp. 152, 153.
1276. —. De nova specie generis *Haliplus* Latr. e Rossia europæa. (*Coleoptera*, *Haliplidæ*.) T. c. p. 216.
1277. —. Sur la position dans le système des *Pulicidæ* (*Aphaniptera* s. *Siphonaptera* auctorum). T. c. pp. 277-288.

1278. [SEMENOW, A.] *Novæ Coleopterorum formæ e Sibiria*. T. c. pp. 289–291.
1279. —. K' phaunye nasyekom'ikh' ostrova kolgheva. Horæ Soc. ent. Ross. xxxvii, pp. 116–126.
Coleoptera North Russia: includes a description by TSCHITSCHERIN.
1280. —. Synopsis præcursoria generum et specierum subtribum *Stomini* efficientium (*Coleoptera*, *Carabidæ*). T. c. pp. 187–193.
1281. —. Dopolnĭtel'naya zamyetka o vidakh roda *Nyctiphantus* Sem. (*Coleoptera*, *Chrysomelidæ*). T. c. pp. 194–196.
1282. SEMICHON, L. Sur l'épithélium de l'intestin moyen de quelques Mellifères. Bull. Mus. Paris ix, pp. 365–368.
1283. —. Sur la ponte de la *Melecta armata* Panzer. Bull. Soc. ent. France 1904, pp. 188, 189. [*Hymenoptera*.]
 SEVERIN, H. [See MARSHALL & SEVERIN (917).]
1284. SHARP, D. The stridulation of *Pussalidæ*. Ent. Mag. xl, pp. 273, 274. [*Coleoptera*.]
1285. —. Description of a new genus and species of *Coleoptera* (Fam. *Hispidæ*) from New Britain. P. Linn. Soc. N. S. Wales xxviii, pp. 924, 925.
- 1285A. —. *Insecta*. Zool. Rec. 1903, 373 pp.
 —. [See also MUIR & SHARP (969).]
1286. SHARPE, EMILY M. On new species of butterflies from Equatorial Africa. Entomologist 1904, pp. 131–134. [*Lepidoptera*.]
1287. —. Descriptions of new *Lepidoptera* from Equatorial Africa. T. c. pp. 181–183.
1288. —. Descriptions of new *Lycænidae* from Equatorial Africa. T. c. pp. 202–204. [*Lycænidae*.]
1289. SHELFORD, R. W. C. A list of the butterflies of Borneo with descriptions of new species. Part I. *Danainæ* to *Amathusiinæ*. J. Straits Asiat. Soc. xli, pp. 81–111. [*Lepidoptera*.]
1290. —. A note on *Elymnias borneensis* Wall. Tr. ent. Soc. London 1904, pp. 487–489. [*Lepidoptera*.]
1291. SHIPLEY, A. E. The Orders of Insects. Zool. Anz. xxvii, pp. 259–262.
1292. SIEBER, N. & METALNIKOW, S. Ueber Ernährung und Verdauung der Bienenmotte (*Galleria mellonella*). Arch. ges. Physiol. cii, pp. 269–286.
1293. SILFVENIUS, A. J. Über die Metamorphose einiger *Hydropsychiden*. II. Acta Soc. Faun. Fenn. xxvi, No. 2, pp. 1–13, 1 pl. [*Trichoptera*.]
1294. —. Über die Metamorphose einiger *Hydroptiliden*. T. c. No. 6, 38 pp., 2 pls. [*Trichoptera*.]
1295. —. Ein Fall von Schädlichkeit der *Trichopterenlarven*. Medd. Soc. Faun. Fenn. 1902/03, pp. 54–57.
1296. —. *Trichopterenlarven* in nicht selbstverfertigten Gehäusen. Allg. Zeitschr. Ent. ix, pp. 147–150.

1297. SILVESTRI, F. *Thysanura*. Fauna Hawaiiensis iii, pp. 293-297, pl. viii.
1298. —. Contribuzioni alla conoscenza dei Mirmecofili. I. Osservazioni su alcuni mirmecofili dei diutorni di Portici. Ann. Mus. Napol (n. s.) i, No. 13, 5 pp.
1299. —. Resultati di uno studio biologico sopra i *Termitidi* sud-americani. Mem. Soc. Alzate xiii, pp. 353-378.
1300. —. Nuovi generi e specie di *Machilidæ*. Redia ii, pp. 4-9. [*Thysanura*.]
1301. SJÖSTEDT, Y. Monographie der *Termiten* Afrikas. Nachtrag. Svenska Ak. Handl. xxxviii, No. 4, 120 pp., 4 pls.
1302. SKINNER, H. New *Meloidæ* from Arizona. Ent. News Philad. xv, p. 217. [*Coleoptera*.]
1303. —. A new *Thecla* from the Northwest. T. c. p. 298. [*Lepidoptera*.]
1304. SLAVÍČEK, J. Rozbor čmeláků a pačmeláků (*Bombus*, *Psithyrus*) českomoravských s poznámkami biologickými. Vestník. Klub. Prostějov iv, pp. 83-106, 1 pl.
Entirely in Bohemian; the plate, of ♂ genitalia, is poor.
1305. SLEVOGT, B. Haben Insekten Ortssinn? Soc. ent. xix, p. 37.
1306. SLINGERLAND, M. V. The grape leaf-hopper. Bull. Cornell Exp. Stat., No. 215, pp. 83-102.
1307. —. The grape-berry moth. Op. cit. No. 223, pp. 43-60. [*Lepidoptera*.]
1308. —. Insect photography. Bull. U. S. Dep. Agric. Ent. xlv, pp. 5-14.
1309. — & JOHNSON, F. Two grape pests. Bull. Cornell Exp. Stat. No. 224, pp. 65-73. [*Diptera*.]
1310. SLOANE, T. G. Studies in Australian entomology. No. xiv. New species of Geodephagous *Coleoptera* from tropical Australia. P. Linn. Soc. N. S. Wales xxix, pp. 527-538.
1311. —. Revisional notes on Australian *Carabidæ*. Part i. Tribes *Carabini*, *Pamborini*, *Pseudozaenini*, *Clivinini*; and the genus *Nebriosoma*. Op. cit. 1904, pp. 699-733. [*Coleoptera*.]
1312. SMITH, J. B. Remarks on the catalogue of the *Noctuidæ* in the collection of the British Museum. J. N. York Ent. Soc. xii, pp. 93-104, pl. iv. [*Lepidoptera*.]
1313. —. New *Noctuidæ* for 1904. I. Canad. Ent. xxxvi, pp. 149-154. [*Lepidoptera*.]
1314. —. New species of *Noctuids* for 1904. No. 2. Psyche xi, pp. 54-60. [*Lepidoptera*.]
1315. —. Report of the New Jersey State Agricultural experiment Station upon the mosquitoes occurring within the State, their habits, life history, etc. Trenton, 1904, 8vo, 482 pp., 136 figs.
1316. —. Notes on some mosquito larvæ found in New Jersey. Ent. News Philad. xv, pp. 145-151, pls. ix-xii. [*Diptera*.]
1317. —. Notes on the life-history of *Culex dupreei* Coq. T. c. pp. 49-51, pl. vii. [*Diptera*.]

1318. [SMITH, J. B.] Report of the entomological department of the New Jersey Agric. Coll. exp. Stat. for year 1903, pp. 555-659.
1319. —. The mosquito investigation in New Jersey. Pop. Sci. Monthly lxvi, pp. 281-286.
1320. —. The New Jersey ideal in the study and report upon injurious insects. U. S. Dep. Agric. Bull. Exp. Stat. 142, 4 pp.
1321. —. Insecticide experiments for 1904. Bull. New Jersey Exp. Stat. No. 178, 8 pp.
1322. SNELLEN, P. C. T. Aanteekeningen over Nederlandsche *Lepidoptera* (Vervolg). Tijdschr. Ent. xlv, pp. 226-268.
— [See also PIEPERS & SNELLEN (1084, 1085) & VAN DEVENTER (1428).]
1323. SNODGRASS, R. E. The hypopygium of the *Tipulidæ*. T. Amer. ent. Soc. xxx, pp. 179-236, pls. viii-xviii. [*Diptera*.]
1324. —. The hypopygium of the *Dolichopodidæ*. P. Calif. Ac. (3) iii, pp. 273-294, pls. xxx-xxxiii. [*Diptera*.]
1325. SNOW, F. H. Lists of *Coleoptera*, *Lepidoptera*, *Diptera*, and *Hemiptera* collected in Arizona by the entomological expeditions of the University of Kansas in 1902 & 1903. Kansas Univ. Sci. Bull. ii, No. 12, pp. 323-350.
1326. SOLARI, A. & F. *Curculionidi* della fauna paleartica. Note e descrizioni. Ann. Mus. Genova xli, pp. 525-538. [*Coleoptera*.]
1327. SPAETH, F. Zur Kenntnis der *Cassiden* des Ostindischen Archipels. Ann. Mus. Genova xli, pp. 69-79. [*Coleoptera*.]
1328. SPEISER, P. Besprechung einiger Gattungen und Arten der *Diptera Pupipara*. II. Ann. Mus. Hungar. ii, pp. 386-395.
1329. —. Typenuntersuchungen an *Hippobosciden*. Zeitschr. Hym. Dipt. iv, pp. 82-89. [*Diptera*.]
1330. —. Drei palaearktische *Hippobosciden*. T. c. pp. 177-180. [*Diptera*.]
1331. —. Studien über *Hippobosciden*. II. Ann. Mus. Genova xli, pp. 332-350. [*Diptera*.]
1332. —. Die *Hemipteren*-gattung *Polycetes* Gigl. und ihre Stellung in System. Zool. Jahrb. Suppl. vii, pp. 373-380, pl. xx.
1333. —. Eine Sammlung von Referaten über neuere Arbeiten aus dem Gebiete der Insektenfaunistik. Allg. Zeitschr. Ent. ix, pp. 185-206.
1334. STAMM, R. H. Om Musklerne Befæstelse til det ydre Skelet hos Leddýrene. Danske Selsk. Skr. (7) i, 2, pp. 127-164, 2 pls.
Résumé in French, pp. 160-163.
1335. STAUFFACHER, H. Das statische Organ bei *Chermes coccineus* Ratz. Allg. Zeitschr. Ent. ix, pp. 361-374. [*Aphidæ*.]
1336. STEBBING, E. P. On the life-history of a new *Monophlebus* from India, with a note on that of a *Vedalia* predaceous on it. With a few remarks on the *Monophlebinæ* of the Indian region. J. Linn. Soc. London xxix, pp. 142-161, pls. 16-18. [*Coccidæ*.]
1337. —. On the life-history and habits of the moth *Duomitus leucotus* Walker in Calcutta. J. Asiat. Soc. Bengal lxxiii, 2, pp. 25-30. [*Lepidoptera*.]

1338. [STEBBING, E. P.] Insect life in India and how to study it, being a simple account of the more important families of insects with examples of the damage they do to crops, tea, coffee and indigo concerns, fruit and forest trees in India. Chapter v. *Hymenoptera*. J. Bombay Soc. xvi, pp. 115-131.
1339. STEFANI-PEREZ, T. DE. Osservazioni e notizie sui *Culicidi siciliani*. Natural. Sicil. xvii, pp. 9-13, 43-48. [*Diptera*.]
1340. —. Noterelle sparse di Entomologia. T. c. pp. 124-128.
1341. STEGAGNO, G. I locatari dei Cecidozoi sin qui noti in Italia. Marcellia iii, pp. 18-53.
1342. STEIN, P. Die amerikanischen *Anthomyiden* des königlichen Museums für Naturkunde zu Berlin und des ungarischen National-Museums zu Budapest. Ann. Mus. Hungar. ii, pp. 414-495. [*Diptera*.]
1343. —. Einige neue javanische *Anthomyiden*. Tijdschr. Ent. xlvii, pp. 99-113. [*Diptera*.]
1344. STERNBERG, C. Zur Gattung *Aegopsis* Burmeister. Deutsche ent. Zeitschr. 1904, pp. 17-32. [*Coleoptera*.]
1345. STERZEL, —. Über einige neue Fossilreste. Ber. Ges. Chemnitz xv, pp. lxix-lxxii. [*Blattidae*.]
1346. STICHEL, H. *Lepidoptera Rhopalocera*. Fam. *Nymphalidae*, Subfam. *Brassoliniæ*, pp. 48, pl. v. Wytsman Genera Insectorum, fasc. xx.
1347. —. Ueber die systematische Stellung der *Lepidopteren*-Gattungen *Hyantis* Hew. und *Morphopsis* Oberth. und den spezifischen Wert der benannten *Hyantis*-Formen. Berlin. ent. Zeitschr. xlix, pp. 303-313, pl. iv.
1348. —. *Brassolidarum novarum descriptio ad tempus proposita*. Ins. Börse 1904, pp. 6, 21. [*Lepidoptera*.]
1349. STITZ, H. Zur Kenntniss des Genitalapparats der *Trichopteren*. Zool. Jahrb. Anat. xx, pp. 277-314, pls. xvii-xix.
1350. STROBL, P. G. Ichneumoniden Steiermarks (und der Nachbarländer). Schluss. Mt. Ver. Steiermark xl, pp. 43-160. [*Hymenoptera*.]
1351. STRUCK, R. Beiträge zur Kenntnis der *Trichopteren*larven. II. Mt. Ges. Lubeck (2) xix, pp. 2-7.
1352. STSCHEKANOVZEW, J. P. Über die Eireifung bei viviparen *Aphiden*. Biol. Centrbl. xxiv, pp. 104-112.
1353. SUFFERT, E. Neue afrikanische Tagfalter aus dem Kön. Zool. Museum Berlin, und meiner Sammlung. Deutsche ent. Zeitschr. Iris xvii, pp. 12-107, pls. i-iii. [*Lepidoptera*.]
1354. —. Neue Tagfalter aus Deutsch-Ost-Africa. T. c. pp. 124-132. [*Lepidoptera*.]
1355. —. Eine neue *Lycænide* aus Deutsch-Ostafrika. Ins. Börse 1904, p. 134. [*Lepidoptera*.]
- 1355A. —. Neue *Nymphaliden* aus Africa. Deutsche ent. Zeitschr. Iris xvii, pp. 108-123. [*Lepidoptera*.]
1356. SURFACE, H. A. Special article: the apple-tree tent-caterpillar (*Clisiocampa americana*). Pennsylv. Dep. Agric. Bull. Zool. i, No. 11, pp. 35-51, pls. i-vii. [*Lepidoptera*.]

1357. SWENK, M. H. Two new *Colletes* from Costa Rica. *Canad. Ent.* xxxvi, pp. 76, 77. [*Hymenoptera*.]
1358. —. A new *Colletes*. *Ent. News Philad.* xv, p. 251. [*Hymenoptera*.]
 —. [See also VIERECK (1454).]
1359. SWEZEY, O. H. Observations on the life-history of *Liburnia campestris*, with notes on a *Hymenopterous* parasite infesting it. *Bull. U. S. Dep. Agric. Ent.* xlv, pp. 43-46.
1360. *—. Preliminary catalogue of the described species of the family of *Fulgoridæ* of North America, north of Mexico. *Ohio Dep. Agric. Bull.*, No. 3, 1904.
1361. SWINHOE, C. New species of Eastern, Australian, and African *Heterocera* in the national collection. *Tr. ent. Soc. London* 1904, pp. 139-158.
1362. —. On the *Geometridæ* of tropical Africa in the national collection. *T. c.* pp. 497-590. [*Lepidoptera*.]
1363. —. New species of Indo-Australian and African *Heterocera*. *Ann. Nat. Hist.* xiv, pp. 131-134.
1364. —. On some new butterflies and moths from the East. *T. c.* pp. 417-424. [*Lepidoptera*.]
1365. SZÉPLIGETI, V. Sudamerikanische *Braconiden*. *Ann. Mus. Hungar.* ii, pp. 173-197. [*Hymenoptera*.]
1366. —. Espèces nouvelles d'*Ichneumonides* et de *Braconides* du Muséum d'histoire naturelle de Paris. *Bull. Mus. Paris* ix, pp. 336-338. [*Hymenoptera*.]
1367. —. *Hymenoptera* Fam. *Braconidæ* (Première partie). Wytsman *Gen. Ins.*, fasc. xxii, xxiii, 253 pp., 3 pls.
 —. [See also MORICE & SZÉPLIGETI (959).]
1368. TAVARES, J. DE SILVA. Instrucciones sobre el modo de recoger y enviar las zoocecidias. *Bol. Soc. espan.* iv, pp. 119, 120.
1369. TAYLOR, G. W. A new genus and species belonging to the *Geometridæ*. *Canad. Ent.* xxxvi, pp. 255, 256. [*Lepidoptera*.]
1370. TEPPER, J. G. O. Descriptions of some new species of *Orthoptera* from North-western S. Australia. *Tr. R. Soc. S. Austral.* xxviii, pp. 162-167, pl. xxxii.
1371. THEOBALD, F. V. New *Culicidæ* from the federated Malay States. *Entomologist* 1904, pp. 12-15, 36-39, 77, 78, 111-113, 163-165, 211-213, 236-239. [*Diptera*.]
 Most of the new species are described by Dr LEICESTER.
1372. —. Second report on economic zoology. *British Museum (Natural history)*. London, 1904, iv + 197 pp.
1373. —. Report on a collection of mosquitoes or *Culicidæ*, etc., from Gambia, and descriptions of new species. *Liverpool School of Tropical medicine. Memoir* x. Appendix, pp. i-xi, pls. vi, vii; included in *Thompson Yates Lab. Rep.* v, Part i. [*Diptera*.]
1374. —. A new *Culicid* from Senegal and notes on the species of Mosquitoes, etc. *T. c.* Part II, *Mem.* xi. Appendix, pp. i-iii. [*Diptera*.]
1375. —. The 'Dura' Aphis or 'Asal Fly' (*Aphis sorghi* nov. sp.) [in] BALFOUR, A. First Report Wellcome Research Laboratories at the Gordon Memorial College, Khartoum, pp. 43-45, 1 pl. [*Diptera*.]

1376. [THEOBALD, F. V.] The Mosquitoes of Egypt, the Sudan, and Abyssinia. T. c. pp. 62-83, 6 pls.
1377. THÉRY, A. Espèces nouvelles de *Buprestides* exotiques. Bull. Soc. ent. France 1904, pp. 73-75. [*Coleoptera*.]
1378. —. *Buprestides* récoltés par le Dr Horn à Ceylan. Ann. Soc. ent. Belgique xlviii, pp. 158-167. [*Coleoptera*.]
1379. THIEME, O. Neue Tagschmetterlinge aus der südamerikanischen Cordillere. Berlin. ent. Zeitschr. xlix, pp. 159, 160. [*Lepidoptera*.]
1380. —. Zwei neue weisse Arten *Lymanopoda*. T. c. pp. 161, 162. [*Lepidoptera*.]
1381. —. Zwei unbeschriebene *Euploeen* der Insel Nias. T. c. p. 163. [*Lepidoptera*.]
1382. THIENEMANN, A. Die Putzapparate der *Trichopteren*puppen. Zool. Anz. xxvii, pp. 724-728.
1383. —. Zur *Trichopteren*-Fauna von Tirol. Allg. Zeitschr. Ent. ix, pp. 209-215, 257-261.
1384. —. *Ptilocolepus granulatus* Pt., eine Übergangsform von den *Rhyacophiliden* zu den *Hydroptiliden*. T. c. pp. 418-424 & 437-441. [*Trichoptera*.]
1385. THIERRY-MIEG, P. Descriptions de *Lépidoptères* nouveaux. Naturaliste 1904, pp. 140, 141 & 182, 183.
1386. THURAU, F. *Busseola sorghicida*, eine neue Ost-Afrikanische *Noctuide*. Berlin. ent. Zeitschr. xlix, pp. 55-58. [*Lepidoptera*.]
1387. TIRABOSCHI, C. Les rats, les souris et leurs parasites cutanés dans leurs rapports avec la propagation de la peste bubonique. Arch. parasit. viii, pp. 161-349 and note rectificative pp. 622-627. [*Aphaniptera*, *Anoplura*.]
1388. —. Gli animali propagatori della peste bubbonica. 4^a Nota. i ratti e i loro ectoparassiti. Boll. Soc. zool. Ital. xiii, pp. 88-97.
1389. TITUS, E. S. G. Notes on *Osmiinae* with descriptions of new genera and species. J. N. York Ent. Soc. xii, pp. 22-27. [*Hymenoptera*.]
1390. —. Some new *Osmiinae* in the United States National Museum. P. ent. Soc. Washington vi, pp. 98-102. [*Hymenoptera*.]
- [See also VIERECK (1454).]
1391. TOMALA, N. A radium hatása a lepkék bábjaira. Rov. Lapok xi, pp. 45-47. [*Lepidoptera*.]
1392. TOWNSEND, ANNE B. The histology of the light organs of *Photinus marginellus*. Amer. Natural. 1904, pp. 127-151. [*Coleoptera*.]
1393. TOWNSEND, R. M. Note on a parasitic fly (*Bengalia depressa*) which deposits its eggs or larvæ on the skin or covering of man and dogs. P. Rhodesia Ass. iv, pp. 7-9. [*Diptera*.]
1394. TRIMEN, R. On some new or imperfectly-known forms of South African butterflies. Tr. ent. Soc. London 1904, pp. 231-246, pls. xix, xx. [*Lepidoptera*.]
- [See also LEIGH (871).]
1395. TROST, A. Beitrag zur *Lepidopteren*-Fauna der Steiermark. B. *Heterocera* (Schwärmer und Nachtfalter). Mt. Ver. Steiermark xl, pp. 221-260.

1396. TROTTER, A. Nuovi zoocecidii della flora italiana. Seconda serie. Marcellia iii, pp. 5-13. [*Diptera*.]
1397. —. Nuovi...Terza serie. T. c. pp. —75.
1398. —. Galle della Colonia Eritrea (Africa). T. c. pp. 95-107.
1399. — & CECONI, G. Cecidotheca italica. T. c. pp. 76-81.
1400. TSCHETVERIKOV, S. *Lepidoptera palaeartica nova*. Rev. Russe Ent. iv, pp. 77-79.
1401. TSCHITSCHÉRINE, T. [the late]. Zur Kenntniss einiger caucasischen *Trechus*-Arten (*Coleoptera*, *Carabidæ*). Rev. Russe Ent. iv, pp. 147, 148.
1402. —. Notice sur la sous-tribu des *Stomini* et description d'une nouvelle espèce du genre *Stomis* Clairv. du Nord de la Perse. T. c. pp. 150, 151. [*Coleoptera*.]
1403. —. Fragments d'une revision des *Scaritini* (*Coleoptera*, *Carabidæ*) des régions paléarctique et paléantarctique; synopsis des genres et des *Scarites* (Fabr.). Rev. Russe Ent. 1904, pp. 257-265.
[—]. Obituary. See SEMENOW (1274).]
1404. TULLGREN, A. On some *Hymenoptera Aculeata* from the Cameroons: with an appendix; on some type-species of the genus *Scolia* & *Belonogaster* in the Royal Museum at Stockholm. Arkiv Zool. i, pp. 425-463.
1405. —. On some species of the genus *Scolia* (s. l.) from the East Indies collected by Carl Aurivillius. T. c. pp. 465-472. [*Hymenoptera*.]
1406. —. Ur den moderna, praktiskt entomologiska litteraturen. II. Ent. Tidskr. xxv, pp. 217-229.
1407. —. Om ett nytt skadedjur på jordgubbar. T. c. pp. 230-236. [*Hymenoptera*.]
1408. TURNER, A. J. Revision of Australian *Lepidoptera*. II. P. Linn. Soc. N. S. Wales 1904, pp. 832-862. [*Notodontidæ*, *Syntomidæ*.]
1409. —. Revision of Australian *Lepidoptera*. Family *Geometridæ*. P. Soc. Victoria xvi, pp. 218-284.
1410. —. A preliminary revision of the Australian *Thyrididæ* & *Pyralidæ*. Part i. P. Soc. Queensland xviii, pp. 109-199. [*Lepidoptera*.]
1411. —. New Australian *Lepidoptera*, with synonymic and other notes. Tr. R. Soc. S. Austral. xxviii, pp. 212-247.
1412. —. A classification of the Australian *Lymantriadæ*. Tr. ent. Soc. London 1904, pp. 469-481. [*Lepidoptera*.]
TURNER, R. E. [See WATERHOUSE & TURNER (1495).]
1413. TUTT, J. W. A natural history of the British *Lepidoptera*. Vol. iv. London, 1904, 8vo, xvii+535 pp. [*Sphingidæ*.]
Reviews: Entomologist 1904, pp. 193, 194; by J. J. W., Ent. Mag. xl, p. 164; by BATESON, Ent. Rec. xvi, pp. 234-236.
1414. —. *Ctenonympha mathewi*, n. sp. Ent. Rec. xvi, p. 308. [*Lepidoptera*.]
1415. UHAGON, S. DE. Ensayo sobre los *Zubrus* de España y Portugal. Mem. Soc. Espan. ii, pp. 363-436. [*Coleoptera*.]
1416. UHLER, P. R. List of *Hemiptera-Heteroptera* of Las Vegas hot springs, New Mexico, collected by Messrs E. A. Schwarz & Herbert S. Barber. P. U. S. Mus. xxvii, No. 1360, pp. 349-364.

1417. ULMER, G. Über einige *Trichopteren* mit rüsselförmigen Kopfanhängen. Zool. Anz. xxviii, pp. 56-59.
1418. ——. Über westafrikanische *Trichopteren*. T. c. pp. 353-358.
1419. ——. Über die von Herrn Prof. Yngve Sjöstedt in Kamerun gesammelten *Trichopteren*. Arkiv Zool. i, pp. 411-423.
1420. ——. Hamburgische Elb-Untersuchung. *Trichopteren*. Mt. Mus. Hamburg, Beih. ii, pp. 279-289.
1421. ——. Beiträge zur Metamorphose der deutschen *Trichopteren*. xvi & xvii. Allg. Zeitschr. Ent. ix, pp. 55-59.
1422. ——. *Trichopteren*. Hamburg. Magalhaen. Reise vii, 26 pp., 2 pls.
1423. ——. *Ephemeriden*. T. c. 8 pp.
1424. VACHAL, J. *Halictus* nouveaux ou présumés nouveaux d'Amérique. Bull. Soc. Correze xxvi, pp. 469-486. [*Hymenoptera*.]
1425. ——. Voyage de M. G. A. Baer au Tucuman (Argentine). *Hymenoptera mellifera*. Rev. Ent. franc. xxiii, pp. 9-26.
1426. ——. Étude sur les *Halictus*. Miscell. Ent. xii, pp. 9-16, 113-128, 137-144. [*Hymenoptera*.]
1427. ——. *Halictus* et *Sphecodes* provenant des chasses de M. le Dr G. Rivet à Riobamba, Ecuador. Bull. Mus. Paris 1904, pp. 313, 314. [*Hymenoptera*.]
1428. VAN DEVENTER, W. Over de ontwikkelingstoestanden van eenige *Microlepidoptera* van Java. Tijdschr. Ent. xlvii, pp. 70-89, pls. ix, x. Includes descriptions of new species by SNELLEN.
1429. ——. *Microlepidoptera* van Java. Op. cit. xlvii, pp. 1-42, pls. i, ii.
1430. VAN DUZEE, E. P. Annotated list of the *Pentatomidæ* recorded from America, North of Mexico, with descriptions of some new species. Tr. Amer. ent. Soc. xxx, pp. 1-80. [*Hemiptera*.]
1431. VARELA, A. G. *Redúvidos* de la Guinea española. Mem. Soc. espan. i, pp. 129-140. [*Hemiptera*.]
1432. ——. Notas *hemipterológicas*. *Redúvidos* nuevos. Bol. Soc. espan. iv, pp. 55, 56.
1433. VASSILIEV, I. Ueber eine neue, bei den Vertretern der Gattung *Telenomus* parasitierende *Encyrtus*-Art (*Hymenoptera*, *Chalcididæ*). Rev. Russe Ent. iv, pp. 117, 118.
1434. VERHOEFF, K. W. Zur vergleichenden Morphologie und Systematik der *Embiiden*: zugleich 3. Beitrag zur Kenntnis des Thorax der Insekten. Acta Ac. German. lxxxii, No. 2, pp. 65, pls. iv-vii.
1435. ——. Über Tracheaten-Beine. 6 Aufsatz: Hüften und Mundbeine der Chilopoden. Arch. Naturg. lxx, i, pp. 123-156, pls. vii, viii. Nachschrift, pp. 154-156. Vorläufige Mittheilung über die Verwechslung der beiden Maxillenpaare bei Insekten. Abstract by author, Zool. Zentrbl. 1904, pp. 832-834.
1436. VERITY, R. Elenco di *Lepidotteri* raccolti nell' Apennino Pistoiese (700 metri) 15 Luglio—3 Settembre 1903. Bull. Soc. ent. Ital. xxxvi, pp. 58-93.
1437. ——. New forms and new localities of some European butterflies. Entomologist 1904, pp. 53-59, pl. iv and 142. [*Lepidoptera*.]
Cf. WHEELER, t. c. p. 116.

1438. VERRALL, G. H. List of British *Dolichopodidæ*, with tables and notes. Ent. Mag. xl, pp. 164-173 etc. [*Diptera*.]
1439. —. *Callicera yerburyi* n. sp.: a British *Syrphid* new to science. T. c. p. 229. [*Diptera*.]
1440. VERNON, E. Die nachembryonale Entwicklung der Kopf- und Brustanhänge bei *Bombyx mori*. Zool. Anz. xxvii, pp. 429-434. [*Lepidoptera*.]
Practically an abstract of his paper of last year [Zool. Rec. Ins. VERNON (1602).]
1441. * —. La evoluzione postembrionale degli arti cefalaci e toracali nel Bombyce del Gelso. Stat. Bacalog operim Padova xv, pp. 1-49, 3 pls. Probably only another publication of last year's paper. Abstract by HEYMONS, Zool. Zentrbl. 1905, p. 98.
1442. —. Zur Entwicklungsgeschichte der männlichen Geschlechtsanhänge bei Insekten. T. c. p. 470.
Protest against Zander's treatment.
1443. —. Zur Färbung der *Lepidopteren*kokons. T. c. pp. 397-399.
1444. VIEHMEYER, H. Experimente zu Wasmann's *Lomechusa*-Pseudogynen-Theorie und andere biologische Beobachtungen an Ameisen. Allg. Zeitschr. Ent. ix, pp. 334-344. [*Hymenoptera*.]
1445. VIERECK, H. L. The species of *Odontophotopsis* (*Hymenoptera*). Tr. Amer. ent. Soc. xxx, pp. 81-92.
1446. —. Additions to *Sphegoidea* (*Hymenoptera*). T. c. pp. 237-244.
1447. —. The North American Cuckoo wasps of the genus *Parnopes*. T. c. pp. 245-250. [*Hymenoptera*.]
1448. —. Two new species of the Bee genus *Perdita* from Indiana and New Jersey. Ent. News Philad. xv, pp. 21-23. [*Hymenoptera*.]
1449. —. A handsome species of *Tachysphex* from Arizona. T. c. p. 87. [*Hymenoptera*.]
1450. —. A bee-visitor of *Pontederia* (Pickerel-weed). T. c. pp. 244, 245. [*Hymenoptera*.]
1451. —. The American genera of the bee family *Dufoureidæ*. T. c. pp. 261, 262. [*Hymenoptera*.]
1452. —. A new *Cryptine* from the nest of *Ceratina dupla*. T. c. p. 333. [*Hymenoptera*.]
1453. —. One of the smallest digger wasps. Psyche xi, p. 72. [*Hymenoptera*.]
1454. —. Synopsis of bees of Oregon, Washington, British Columbia and Vancouver. Assisted by T. D. A. COCKERELL, E. S. G. TITUS, J. C. CRAWFORD junr. and H. M. SWENK. Canad. Ent. xxxvi, pp. 93-100, 157-161, 189-196, 221-232. [*Hymenoptera*.]
1455. — & COCKERELL, T. D. A. The *Philanthidæ* of New Mexico. I. J. N. York. Ent. Soc. xii, pp. 84-88. II. T. c. pp. 129-145. [*Hymenoptera*.]
1456. VIGIER, P. Sur la présence d'un appareil d'accommodation dans les yeux composés de certains Insectes. C.R. Ac. Sci. cxxxviii, pp. 775-777. [*Odonata*.]
1457. VILLARD, J. A propos d'une prétendue chlorophylle de la soie. C.R. Ac. Sci. cxxxix, pp. 165, 166.

1458. [VILLARD, J.] A propos d'une prétendue chlorophylle de la soie. C.R. Soc. Biol. lvi, pp. 134-136.
1459. VILLENEUVE, J. Contribution au catalogue des *Diptères* de France. (Suite). Feuille Natural. xxxiv, pp. 69-73, 166-173, 225-229.
1460. VOINOV, D. N. Sur une disposition spéciale de la chromatine dans la spermatogénèse du *Gryllus campestris*, reproduisant des structures observées seulement dans l'ovogénèse. Arch. zool. exp. Notes 1904, pp. lxiii-lxvi.
1461. VOSS, F. Über den Thorax von *Gryllus domesticus*, mit besonderer Berücksichtigung des Flügelgelenks und dessen Bewegung. Erster Teil. Das Skelett. Zeitschr. wiss. Zool. lxxviii, pp. 268-354, pls. xv, xvi. [*Orthoptera*.]
- WAGNER, F. V. [See FRIESE & WAGNER (553).]
1462. WAGNER, H. Beiträge zur Kenntniss der Gattung *Apion* Herbst. München. Kol. Zeitschr. ii, pp. 373-379. [*Coleoptera*.]
1463. WAHLGREN, E. Über einige Zetterstedt'sche *Nemocerentypen*. Arkiv Zool. ii, No. 7, 19 pp. [*Diptera*.]
1464. WALKER, A. O. 'Atmospheric moisture as a factor in distribution. S.-East. Natural. 1903, pp. 42-47. [*Lepidoptera*.]
1465. WALKER, E. M. The crickets of Ontario. Canad. Ent. xxxvi, pp. 142-144, 181-188, 249-255, pl. iv. [*Orthoptera*.]
1466. —. Notes on the *Locustidae* of Ontario. T. c. pp. 325-330, 337-341. [*Orthoptera*.]
1467. WALKER, J. J. Antipodean Field-notes. II. A year's insect hunting in New Zealand. Ent. Mag. xl, pp. 24-28, etc.
1468. —. Notes on the *Lepidoptera* of the "Curtis" collection of British insects. T. c. pp. 187-194.
- [See also BROUN (185).]
- 1468A. [WALLACE, R. Eleanor Ormerod, LL.D., Economic entomologist. Autobiography and correspondence. London, 1904, xx+348 pp., xxx pls. Review, Nature lxx, pp. 219, 220.]
1469. WALSINGHAM, The Lord. Spanish and Moorish *Microlepidoptera* (continued). Ent. Mag. xl, pp. 7, 8.
1470. —. Algerian *Microlepidoptera*. T. c. pp. 214-223, 265-273.
1471. WARBURTON, C. Annual report for 1904 of the Zoologist. Royal Agricultural Society of England. J. Agric. Soc. Engl. 1904, pp. 273-287, 4 text-figg.
1472. WARD, H. B. On the development of *Dermatobia hominis*. Mark Anniv. Vol. pp. 483-513, pls. xxxv, xxxvi. [*Diptera*.]
1473. —. Some points in the development of *Dermatobia hominis*. Stud. Lab. Nebraska iii, No. 58.
1474. WARREN, W. New American *Thyrididae*, *Uraniidae* and *Geometridae*. Nov. Zool. xi, pp. 1-173. [*Lepidoptera*.]
1475. —. New *Drepanulidae*, *Thyrididae*, *Uraniidae* and *Geometridae* from the Aethiopian region. T. c. pp. 461-482. [*Lepidoptera*.]
1476. —. New *Thyrididae* and *Geometridae* from the Oriental regions. T. c. pp. 483-492. [*Lepidoptera*.]

1477. [WARREN, W.] New American *Thyrididæ*, *Uraniidæ* and *Geometridæ*. T. c. pp. 493-582.
1478. WASHBURN, F. L. Ninth annual report of the State Entomologist of Minnesota, for the year 1904. 196 pp. and 177 illustrations.
1479. —. The Mediterranean flour moth. Special report of the Entomologist. Minnesota 1904. [Extracted from preceding.]
1480. WASMANN, E. Die moderner Biologie und die Entwicklungstheorie. Zweite vermehrte Auflage. Freiburg im Breisgau 1904, 8vo, xii + 323 pp., illustrations & 4 pls.
1481. —. Neue Beiträge zur Kenntniss der *Paussiden*, mit biologischen und phylogenetischen Bemerkungen. Notes Leyden Mus. xxv, pp. 1-82, pls. i-vi; corrigenda p. 110. [*Coleoptera*, *Hymenoptera*.]
Abstract by ESCHERICH, Zool. Zentrbl. 1905, pp. 50-52.
1482. —. Contribuição para o estudo dos hospedes de abethas brasileiras. Revist. Mus. Paulista vi, pp. 482-487, pl. xvii.
1483. —. Zur Kontroverse über die psychischen Fähigkeiten der Tiere, insbesondere der Ameisen. Natur u. Schule iii, pp. 20-26, 80-89, 133-142.
1484. —. Zur Brutpflege der blutroten Raubameise (*Formica sanguinea* Ltr.). Ins.-Borse xx (1903), 3 pp.
- 1484A. —. Zur Kenntniss der Gäste der Treiberameisen und ihrer Wirthe am obern Congo, nach den Sammlungen und Beobachtungen von P. HERM. KOHL. Zool. Jahrb. Suppl. vii, pp. 611-682, pls. xxxi-xxxiii. [*Hymenoptera*, *Coleoptera*.]
1485. —. Termitophilen aus dem Sudan. Unter Mitwirkung von Prof. AUG. FOREL, K. ESCHERICH und G. BREDDIN. Swedish exp. White Nile, No. 13, 21 pp., 1 pl.
1486. —. Ein neuer *Atemeles* aus Luxemburg. Deutsche ent. Zeitschr. 1904, pp. 9-11. [*Coleoptera*.]
1487. —. Remarques critiques sur la phylogénie et la division systématique des *Termitides*. Ann. Soc. ent. Belgique 1904, pp. 370, 371.
Relates to DESNEUX (370).
1488. WASSILIEFF, A. Zur Spermatogenese bei *Blatta germanica*. Anat. Anz. xxv, pp. 257-260.
1489. —. Über Parthenogenese bei ben Arten der Schlupfwespengattung *Telenomus*. Zool. Anz. xxvii, pp. 578, 579. [*Hymenoptera*.]
— [See also JACOBSON (741).]
1490. WATERHOUSE, C. O. Supplementary list of generic names. London, 1904, 8 pp.
1491. —. Observations on *Coleoptera* of the family *Buprestidæ*, with descriptions of new species. Ann. Nat. Hist. xiv, pp. 245-267 and 314-348 (not completed).
1492. WATERHOUSE, G. A. On three collections of *Rhopalocera* from Fiji, and one from Samoa. Tr. ent. Soc. London, 1904, pp. 491-495.
1493. —. Notes on *Hesperidæ* described by Mabille and reputed to be Australian. Victorian Natural. xxi, pp. 109, 110. [*Lepidoptera*.]
1494. —. On a new species of *Heteronympha* and a new variety of *Tisiphone abeona* Don. P. Linn. Soc. N. S. Wales xxix, pp. 466-468. [*Lepidoptera*.]

1495. [WATERHOUSE, G. A.] & TURNER, R. E. Notes on Australian *Rhopalocera: Lycænidae*. Part iv. Op. cit. 1904, pp. 798-804.
1496. WEBB, S., McDAKIN & GRAY, G. The diminution and disappearance of the South-Eastern Fauna and Flora within the memory of present observers. S.-East. Natural. 1903, pp. 48-60.
1497. WEBER, L. Zur Kenntnis der *Carabus*-Larven. Allg. Zeitschr. Ent. ix, pp. 414-418. [*Coleoptera*.]
1498. WEBSTER, F. M. Studies of the life-history, habits and taxonomic relations of a new species of *Oberea* (*Oberea ulmicola* Chittenden). Bull. Illinois Lab. vii, pp. 1-14, pls. i, ii. [*Coleoptera*.]
The description is by CHITTENDEN. Abstract by MAY, Zool. Zentrbl. 1904, p. 797.
1499. —. Studies of the habits and development of *Neocerata rhodophaga* Coquillett. Bull. Illinois Lab. vii, pp. 15-25, pl. iii. [*Diptera*.]
1500. —. Diffusion of the hawk-moths in North America. Canad. Ent. xxxvi, pp. 65-69. [*Lepidoptera*.]
1501. WEELE, H. W. VAN DER. New and little-known *Neuroptera*. Notes Leyden Mus. xxiv, pp. 203-215.
1502. WEISE, J. Ueber einige *Chrysocloa*-Varietäten. Munchen. Kol. Zeitschr. ii, pp. 234-237. [*Coleoptera*.]
J. DANIEL adds note.
1503. —. Über bekannte und neue *Chrysomeliden*. Arch. Naturg. lxx, i, pp. 157-178. [*Coleoptera*.]
1504. —. Beschreibung einiger *Hispinen*. Arch. Naturg. lxxi, i, pp. 49-104. [*Coleoptera*.]
1505. —. *Pseudocolaspis substriata* n. sp. Deutsche ent. Zeitschr. 1904, p. 100. [*Coleoptera*.]
1506. —. Synonymische Bemerkungen zu Gorham, Biologia Centrali-Americana, Vol. vii. *Coccinellidae*. T. c. pp. 357-367. [*Coleoptera*.]
1507. —. Einige neue *Cassidinen* und *Hispinen*. T. c. pp. 433-452. [*Coleoptera*.]
1508. WELLENIUS, O. Ett meddelande om *Tomognathus sublaevis* Nyl. Medd. Soc. Faun. Fenn. 1902-03, pp. 70-72. [*Hymenoptera*.]
1509. WERNER, F. Über eine neue Gattung aus der *Orthopteren*-Familie der *Mantodeen*. Anz. Ak. Wiss. xxvii, pp. 403-405.
1510. —. Zoologische Kreuz- und Querfahrten in Süd-Bosnien und der Herzegowina. Zool. Garten xlv, pp. 41-57.
1511. —. Neue Beiträge zur Kenntnis der Reptilien- und *Orthopteren*-fauna Kleinasiens. Zool. Anz. xxviii, pp. 79-82.
1512. WERY, JOSÉPHINE. Quelques expériences sur l'attraction des Abeilles par les fleurs. Bull. Ac. Belgique 1904, pp. 1211-1261.
1513. WESCHÉ, W. The mouth-parts of the *Nemocera* and their relation to the other families of *Diptera*. J. R. Micr. Soc. 1904, pp. 28-107, pls. iii-viii.
Abstract by DE MEIJERE, Zool. Zentrbl. 1904, p. 456.
1514. —. The labial and maxillary palpi in *Diptera*. Tr. Linn. Soc. London ix, pp. 219-230, pls. viii-x.
1515. —. Some new sense-organs in *Diptera*. J. Quekett Club (2) ix, pp. 91-104, pls. vi, vii.

1516. WHEELER, W. M. Dr Castle and the Dzierzon theory. Science xix, pp. 587-591.
Relates to CASTLE (249). Includes a criticism of Petrunkevitch as to polar body becoming reproductive organ in bee.
1517. —. On the pupation of ants and the feasibility of establishing the Guatemalan Kelep or cotton-weevil ant in the United States. Science xx, pp. 437-440.
1518. —. Three new genera of inquiline ants from Utah and Colorado. Bull Amer. Mus. xx, pp. 1-17, pls. i, ii. [*Hymenoptera*.]
1519. —. The American ants of the subgenus *Colobopsis*. T. c. pp. 139-158. [*Hymenoptera*.]
1520. —. Ants from Catalina island, California. T. c. pp. 269-271. [*Hymenoptera*.]
1521. —. The ants of North Carolina. T. c. pp. 299-306. [*Hymenoptera*.]
1522. —. A new type of social parasitism among ants. T. c. pp. 347-375. [*Hymenoptera*.]
1523. —. A Crustacean-eating Ant (*Leptogenys elongata* Buckley). Biol. Bull. vi, pp. 251-259, 3 figg.
1524. —. The Phylogeny of the Termites. Biol. Bull. viii, pp. 29-37.
— [Translation of FOREL; see FOEL (523).]
1525. WHITNEY, C. P. Descriptions of some new species of *Tabanidæ*. Canad. Ent. xxxvi, pp. 205, 206. [*Diptera*.]
1526. WICKHAM, H. F. The influence of the mutations of the pleistocene lakes upon the present distribution of *Cicindela*. Amer. Natural. xxxviii, pp. 643-654.
1527. —. Reduplication of the tarsus in *Hydrocharis*. Ent. News Philad. xv, pp. 237, 238. [*Coleoptera*.]
1528. —. The metamorphoses of *Ægialites*. Canad. Ent. xxxvi, pp. 57-60, pl. ii. [*Coleoptera*.]
1529. —. On the systematic position of the *Ægialitidæ*. T. c. pp. 356, 357. [*Coleoptera*.]
1530. WILLIAMS, C. E. Notes on the life history of *Gongylus gongyloides* a *Mantis* of the tribe Empusides and a floral simulator. Tr. ent. Soc. London 1904, pp. 125-137. [*Orthoptera*.]
1531. WILLIAMSON, E. B. The dragonflies (*Odonata*) of Burma and Lower Siam. I. Subfamily *Calopterygineæ*. P. U. S. Mus. xxviii, No. 1389, pp. 165-187.
1532. —. A new species of *Psolodesmus* (order *Odonata*) from Formosa. Ent. News Philad. xv, pp. 247, 248.
1533. WILLIS, J. C. & BURKILL, I. H. Notes on the anthophilous insects of the Clova mountains. II. On the choice of flowers by *Syrphids*. Ann. Scott. Nat. Hist. 1904, pp. 166-168. [*Diptera*.]
1534. WIMMER, A. Studie dipterologické. Rozp. Ceske Ak. Praze ii, xiii, No. 1, 12 pp., 2 pls.
1535. WIRTNER, P. M. A preliminary list of the *Hemiptera* of Western Pennsylvania. Ann. Carnegie Mus. iii, pp. 183-232.

1536. WOODWORTH, C. W. Division of Entomology. [Report.] Rep. Agric. exp. Stat. California xxii, pp. 85-87.
1537. —. Directions for spraying for the Codling-moth. Bull. Agric. exp. Stat. California, No. 155, pp. 1-20, 4 figg.
- WULP, F. M. VAN DER (the late). [See MEIJERE (934).]
1538. WYTSMAN, P. Genera insectorum.
Cf. BERTHOUMIEU (111), DALLA TORRE (342), JACOBY & CLAVAREAU (750, 751), MABILLE (898).
1539. XAMBEU, —. Mœurs et métamorphoses des Insectes. Mélanges entomologiques (Suite). Ann. Soc. Linn. Lyon 1, pp. 79-129 and 167-221.
This is accompanied by an Index to this and to the parts of the series in Vols 48 and 49 of the same work.
1540. —. Mélanges entomologiques. (Suite) 5-8. Soc. Pyrenees-or. xlv, pp. 45-72.
YOUNG, D. B. [See FELT (495).]
1541. YOUNG, L. C. H. Synonymic catalogue of the *Lepidoptera Papilionina* in the Society's collection. J. Bombay Soc. xv, pp. 483-497.
1542. —. The distribution of butterflies in India. T. c. pp. 594-601. [*Lepidoptera*.]
1543. ZAITSCHEK, ARTHUR. Versuche über die Verdaulichkeit des Chitins und den Nährwert der Insecten. Arch. ges. Physiol. civ pp. 612-623.
1544. ZANDER, E. Zum Genital-apparat der *Lepidopteren*. Zool. Anz. xxviii, pp. 182-186.
1545. ZANG, R. Ueber einige *Passaliden* aus der Sammlung des koninklijk zoologisch Genootschap natura Artis Magistra. Tijdschr. Ent. xlvii, pp. 181-185. [*Coleoptera*.]
1546. —. *Parapelopides* und *Ophrygonius*, zwei neue Gattungen der *Passaliden*. Zool. Anz. xxvii, pp. 694-700. [*Coleoptera*.]
1547. ZAVATTARI, E. Contributo alla conoscenza degli *Imenotteri* dei Pirenei. Boll. Mus. Torino xix, No. 482, 12 pp.
1548. ZICKERT, F. Contributo ad un Catalogo delle *Zygene* dell' Italia meridionale con descrizioni di varietà ed aberrazioni poco note. Natural. Sicil. xvii, pp. 67-74. [*Lepidoptera*.]
1549. ZOUFAL, V. *Antroherpon loreki* n. sp. Wien. ent. Zeit. xxiii, p. 20. [*Coleoptera*.]

II. BIOLOGY.

SUBJECT-INDEX.

1. ANATOMY AND PHYSIOLOGY.

N.B. The arrangement in the subsections is of little importance, as each of them is not complete in itself.

Modern biology, much entomological matter, WASMANN (1480).

The morphology, embryology and sexual life of Insects, HENNEGUY (676).

a. Morphology. (See also **b.**)

Legs, maxillæ, hypopharynx, VERHOEFF (1435).

Morphology of the leg, BÖRNER (158).

Morphology of leg, abstract of Verhoeff's views, VERHOEFF, Zool. Zentrbl. 1904, p. 658.

Corpora allata, nerve-centres and metameres, *Chironomus* larva, HOLMGREN (699).

Morphology of head, HOLMGREN (699).

Endoderm, vitellus, mesenteron, MARCHAL (908).

Endoderm, origin of, bee, DICKELE (379).

Endoderm study, SCHWANGART (1259).

The segmentation of the primitive Insect, anatomy of thorax, six segments, new names, anatomy of *Embiidæ*, VERHOEFF (1434).

b. General (comprehensive) and External. (See also the other subsections for special systems or organs.)

Structure of the chitin skeleton *Coleoptera*, VON LINDEN (883).

Head of *Blatta*, morphology, RILEY (1173).

Morphology of head of *Dipterous* larvæ and T-shaped ridges of cesophagus of *Musca*, HOLMGREN (700).

Morphology of head and mouth-parts, *Rhynchop. Coleopt.*, MCCLENAHAN (930).

Thorax of *Gryllus*, skeleton, VOSS (1461).

Compound structure of maxilla and of thorax, BANKS (86).

Mouth-parts, *Mallophaga*, WATERHOUSE, p. v, P. ent. Soc. London 1904.

Trophi of *Diptera*, WESCHÉ (1513, 1514).

Mouth-parts of flies, WIMMER (1534).

Hypopharynx of *Machilis*, etc., maxillula, BÖRNER (157).

Mouth-parts, *Trichoptera*, ULMER (1417).

Labrum and hypopharynx, *Hymenoptera*, HILZHEIMER (686).

Labrum, adult and young, *Odonata*, BUTLER (211).

Mouth of *Anoplura*, ENDERLEIN (463).

Structure of proboscis *Anophelides*, LEON (875).

Ventral-tube, *Collembola*, HOFFMANN (694).

Internal anat. abdomen, *Aspidomorpha*, MUIR (969).

The abdomen of *Odonata*, and its appendages, larva and imago, HEYMONS (683); HANDLIRSCH (662).

Anatomy of honey-bee, HOMMELL (702).

Anatomy and development of a *Chalcid*, EMBLETON (450).

Anatomy of mosquito, LEBREDO (867).

Anatomy and morphology *Culex*, PAZOS Y CABALLERO (1012).

Anatomical points, *Culex mucidus alternans*, COLLEDGE (297).

Epistomal appendages *Culicidæ* larvæ, KNAB (821).

Structure of *Conopidæ* and larvæ, DE MEIJÉRE (933).

Anatomy of *Ranatra*, MARSHALL & SEVERIN (917).

Diaspis pentagona, brief anatomical notes, MAZZARELLI (929).

Anatomy of *Campodea*, PHILIPTSCHENKO (1045).

Mechanics of wing movement, BULL (200).

Luminescent organs, *Photinus*, TOWNSEND (1392).

Scent-organ of *Phassus*, DEGENER (359).

Scent of *Rhopalocera*, LONGSTAFF, p. lxxxix, P. ent. Soc. London 1904.

c. Nervous System, Sense-Organs. (For Senses, Psychology etc., see p. 85.)

Morphology of central nervous system, HALLER (652).

Nerves, histology, *Periplaneta*, FLOYD (521).

Sense-organs in *Diptera*, WESCHÉ (1515).

Sense-organs, antenna of *Tryxalis*, RÖHLER (1185).

Sense-organ ?, *Æcetis*, RIS (1175).

Eye of bee, structure and development, PHILLIPS (1046A).

Eyes *Coleopt.* no. of facettes, LEINEMANN (872).

Ocelli, development in *Periplaneta* and *Olozon*, REITZENSTEIN (1157).

Apparatus of accommodation, eye of *Æschna*, VIGIER (1456).

Static-organ, *Aphidæ*, STAUFFACHER (1335).

d. Muscular System.

Histology of muscle, *Coleoptera*, PRENANT (1107).

Histology of muscle, *Hydrophilus*, GRUVEL (643).

Mode of insertion of muscles on the skeleton, STAMM (1334).

e. Nutritive System and Glands (incl. Circulatory and Respiratory Organs, Excretion).

Peritrophic membrane, MARTYNOW (921).

Epithelium of mesenteron of *Bombus*, SEMICHON (1282).

Function of digestion, SAWAMURA (1219).

Food and digestion of *Galleria mellonella*, SIEBER & METALNIKOV (1292).

Alimentary canal, *Hydrophilus* and *Hydrous*, BORDAS (150).

Digestive system, larval, of *Spilosoma*, BORDAS (149).

Alimentary canal and proboscis of *Culex pipiens*, SCHAUDINN (1224).

Respiration, *Acridiidae*, EWING (472).

Glands of *Cynipidae* larvæ, RÖSSIG (1189).

Ecdysis glands, or Verson glands, NASSONOW (973); PLOTNIKOW (1089, 1090).

Salivary glands of *Periplaneta*, LEBEDEFF (866).

Salivary glands, *Nepa*, BORDAS (152).

Head glands, *Collembola*, HOFFMANN (694).

Wax-organs, *Melipona*, DREYLING (404).

Wax-organs of Honey-bee, DREYLING (403).

Wax-glands, *Chermes*, CHOLODKOVSKY (273).

Mandibular glands, *Lep.* larvæ, BORDAS (151).

Glands accessory to silk-apparatus, *Lepidoptera*, BORDAS (148).

Labial renal excretory organs, *Thysanura*, BRUNTZ (196).

Phagocytic organs of Insects, general, DAWYDOFF (354, 355).

Phagocytic organs, *Gryllidae*, DAWYDOFF (356); *Locustidae*, id. (357).

f. Sexual organs and Sex (incl. Hermaphrodites).

Gonapophyses, Klapálek (815, 816).

Morphology of genitalia, *Trichoptera*, Klapálek (817).

Comparative anatomy ♂ genitalia, *Tipulidae*, SNODGRASS (1323).

Male genitalia *Dolichopodidae*, SNODGRASS (1324).

Male and female sexual organs of *Trichoptera*, STITZ (1349).

Saws of *Cimbex* ♀, BISSCHOPP VAN TUINEN (131).

Intromittent organ in *Lepidoptera*, ZAUDER (1544).

Spermatogenesis, *Gryllus*, VOINOV (1460).

Spermatogenesis, *Blatta germanica*, WASSILIEFF (1488).

Spermatogenesis, *Syromastes*, GROSS (635, 636).

Ovaries and oogenesis, *Bacillus*, DAIBER (341).

Oogenesis in social *Hymenoptera* and other Insects, BRUNELLI (193).

Oogenesis, degeneration of ovules, *Dytiscus*, DUBUISSON (410).

Oogenesis in a *Chalcid*, peculiar eggs, EMBLETON (450).

Oocyte, perinuclear zone, GIARDINA (600).

Oogenesis, follicular epithel and nutrition of egg, *Melolontha*, MOLLISON (955).

Oogenesis in viviparous *Aphida*, STSCHELMKANOVZEW (1352).

Egg-tubes and eggs, *Rhyssa*, BUGNION (198, 199).

Sexes, comparative numbers, *Lep.*, TUTT, pp. 193-195, Ent. Rec. xvi ; CHAPMAN, t. c. p. 312.

Proportions of sexes in some raised broods of *Pteronurus ribesii*, LOISELLE, p. 234, Feuille Natural. xxxiv.

Relation of primary and secondary sexual characters, KELLOGG (781).

Sex in *Aphida*, BALBIANI (77).

Determination of sex, SCHRÖDER (1242) ; Determination of sex, MARCHAL (906, 907).

Determination of sex, *Hymenoptera*, CASTLE (249) ; WHEELER (1516) ; Determination of sex, bee, PLATEAU (1088).

Determination of sex, loss of weight in pupa, abstinence from food as affecting metamorphosis, KELLOGG & BELL (782).

Gynandromorph *Lep.*, descriptive catalogue, pt. iv, SCHULTZ (1247).

Gynandromorphic palearctic *Lep.*, catalogue, SCHULTZ (1251).

Argynnis pandora, hermaphrodite, LAMBERTIE, p. lxxi, Pr.-verb. Soc. Linn. Bordeaux lix.—*Argynnis paphia* ♂ et hermaph. in cop., JOANNIS, p. 280, Bull. Soc. ent. France 1904.—Gynandromorphic *Cænonympha* and *Lasiocampa*, SCHULTZ, p. 170, Soc. ent. xviii.—Gynandromorph *Pieris*, fig. 5, and *Automeris*, figg. 6, 7, Psyche xi, p. 113, pl. x.—Gynandrous *L. ægon*, SMALL, p. 263, Entomologist 1904.—Gynandromorph *Melinæa*, LATHY (858).—Gynandromorph hybrid *Smerinthus*, GILLMER (608).—Gynandromorph of *Porthetria dispar*, KUSNEZOV, p. 203, Rev. Russe Ent. iv.

Hermaphrodite of *Leptura*, BICKHARDT, p. 303, Deutsche ent. Zeitschr. 1904.

Four Hermaphrodites, eur. *Apidae*, ALFKEN, p. 123, Soc. ent. xix.—Gynandromorphic *Ichneumon*, BERTHOUMIEU, p. 79, Bull. Soc. ent. France 1904.

Scent of male *Pieridae*, DIXEY, pp. lvi-lx, P. ent. Soc. London 1904.

g. Physiology. (See also subsections b—f, and sections 2, 3.)

Radioactivity and *Lep. pupae*, TOMALA (1391).

Temperature experiments *Lepidoptera*, FRINGS (554) ; Temperature experiments, *Lycæna*, KRODEL (846).—Account of recent temperature and other experiments, VON LINDEN (882).

Results of feeding silkworms on wild and on cultivated leaves, SASAKI (1211).

Parthenogenesis and determination of sex, *Apis mellifica*, BUTTEL-REEPEN & BRESSLAU (212).

Parthenogenesis, *Apis*, BUTTEL-REEPEN (213).

Parthenogenesis, *Culex*, KELLOGG, p. 59, Allg. Zeitschr. Ent. ix.—Parthenogenesis in *Telenomus*, WASSILIEW (1489).—Parthenogenesis, hybrids, *Cimber*, VAN ROSSUM (1190).—Parthenogenesis *Epinophele*, BACHMETJEW (69).—Parthenogenesis in *Porthesia*, GARBOWSKI (584).

Artificial parthenogenesis, silkworm's eggs, PÉREZ (1021).

Regeneration larval legs, silkworm ; KELLOGG (780).

Regeneration pupa of *Lepidoptera*, HIRSCHLER (693).

Longevity of *Margarodes*, 15 years, MAYET, p. 206, Bull. Soc. ent. France 1904.

Tenacity of life, experiments, FIELDE (507).

Phosphorescence, BAGE (75).

Nature of poison of *Apis*, PHISALIX (1048-1050).

2. ETHOLOGY. HABITS, INSTINCT, including SENSES, PSYCHOLOGY. (Organs of Sense, see 1c, p. 83.)

The question of the bees' cell, DITTRICH (394).

Insect-psychology, FOREL (523, 524).

- Mental capacities of ants, WASMANN (1483).
 Recognition among ants, FIELDE (506).
 Hearing, ants, experiments, FIELDE & PARKER (508).
 Pupa sensitive to sound, SCHUSTER (1258).
 Ants and light-rays, FIELDE (502).
 Phototaxis, *Ranatra*, HOLMES (698).
 Sensitiveness of butterflies to light, PARKER (1011).
 Light that attracts *Lepidoptera*, PERRAUD (1031, 1032).
 Choice of flowers by *Syrphidae*, WILLIS & BURKILL (1533).
 Nervous system and respiration *Aceridiidae*, EWING (472).
 Prey-stinging and nidification, *Hymenoptera*, BRETHES (181).
 Instinct of *Pompilus viaticus*, PICARD (1080).
 Sleep, PICTET (1082).
 Permanent night-quarters, *Aeschna* etc., SLEVOGT (1305).
 Insect swarms on mountain-tops, POULTON, pp. xxiv-xxvi, P. ent. Soc. London 1904.
 Gregarious hibernation, KELLOGG, pp. xxiii, xxiv, P. ent. Soc. London 1904.
 Migration of *Crenis boisduvali*, BELL-MARLEY, p. 116, Entomologist 1904.
 Migration of *P. cardui*, AIGNER-ABAFI (19), see also *Lepidoptera*, *Nymphalidae*.
 Migrations of *Chermes*, variable, CHOLODKOVSKY (274).
 Migration of butterflies in the Amazons valley, GOELDI (616).
 Migration, butterflies, Ceylon, MANDERS (901).
 Popular summary, sounds of *Coleoptera*, HIRSCH (692).
 Stridulation of *Cychrus*, JONTEL, p. 60, J. N. York Ent. Soc. xii.
 Sound-production, *Lamellicorn Col.*, ARROW (38).
 Stridulation, *Passalidae*, SHARP (1284).
 Sound-producing caterpillar, PACKARD (1009).
 Courting, mayflies, MOORE, p. 289, Ent. News Philad. xv.
 Male and female relations, *Phassus schamyl*, SCHAPOSHNIKOW (359).
 Copula, insects of different genera, RAINBOW (1118).
Noctuids of different species in cop., DOD, p. 288, Canad. Ent. xxxvi.
 Copula and oviposition, *Anabius*, GILLETTE (607).
 Copula, no. of eggs, *Anasa*, GIRAULT (611).
 No. of eggs deposited by an ind., GIRAULT (609).
 Cop. between ♂ and hermaphrodite, JOANNIS, p. 280, Bull. Soc. ent. France 1904.
 Blood-sucking and oviposition etc. *Culicidae*, GOELDI (615).
 Oviposition of eggs of *Hemiptera* on the back, GIARD (597).
 Oviposition *Bombyx mori*, number of eggs, fertility, rapidity of deposition, GAL (579).
 Oviposition, *Orchelimum*, HANCOCK (656).
 Oviposition *Culex*, KNAB (822).
 Oothecas of *Cassididae* and their construction, MUIR & SHARP (969).
 Maternal solicitude, KIRKALDY (814).
 Protecting eggs, *Tectocoris*, DODD (395).
Idolothrips, eggs protected, FROGGATT (556).
Apis mellifica, nesting at large, BOUVIER, p. 187, Bull. Soc. ent. France 1904.
Bombi in Arctic regions, FRIESE (552).
 Biology of stingless bees, abstract of von Ihering's last year's paper, GRUNBERG (642).
 Symbiosis of bees and Acari, *Spolia zeylan.* i, pp. 117-119.
 Nests of wasps, DU BUYSSON (218).
 Nests of brazilian social *Vespidae*, DUCKE (411).
 Nest of *Vespa germanica*, census, PECHLANER (1014).
 Nest of *Vespa austriaca* with *rufa*, BERESFORD, p. 242, Irish Natural. 1904.

- Polistes*, habits, ADLERZ (14).
Chrysididæ at Pará, DUCKE (412).
 Recent work on ants, ESCHERICH (470).
 Habits of ants, FIELDE (501).
 Habits of ants; using larvæ for spinning silk, etc., FOREL (532).
 Social parasitism, ants, new form of, WHEELER (1522).
 Inquiline ants, WHEELER (1518).
 Mixed nests of ants artificial, FIELDE (503).
 Experiments on ants, temperature and submergence, FIELDE (504).
 Stopper-headed *Colobopsis*, WHEELER (1519).
 Crustacean-eating ant, WHEELER (1523).
Tomognathus sublævis, habits, WELLENIIUS (1508).
Formica sanguinea, composition of colonies as regards young etc., WASMANN (1484).
 Pupation of *Ectatomma tuberculatum*, COOK (311), WHEELER (1517).
Formica rubicunda and *Xenodusa*, relations, MUCKERMANN (968).
 The relations of *Lomechusa* and *Formica*, as regards production of pseudogynes, VIEHMEYER (1444).
 Symbiosis, ants and *Homoptera*, Java, PENZIG (1017).
 Ants and plants, symbiosis, FOREL (526).
 Ants as originators of mounds in swamps, HOLMGREN (701).
 Habits of Termites, establishing colony etc., JACOBSON (741).
 Termites, habits, founding nests, PÉREZ (1022).
Termitidæ, S. American, habits, SILVESTRI (1299).
 Nests etc. of Termites, SJÖSTEDT (1301).
 Termites as carriers of water, ELLIOT (448).
 Ants' nest, Insects, SILVESTRI (1298).
 Ants' nest, *Coleoptera*, BRUES (188).—*Ecitonidia* and its hosts, BRUES (189), FAUVEL (488).—Danish myrmecophilous *Col.*, JOHANSEN (764), NORMAND (983), SCHMIDT (1230), WASMANN (1484, 1486).—*Paussidæ*, WASMANN (1481).
 New suborder of Termitophilous insects, BREDDIN & BÖRNER (165).
 Termitophilous Insects, WASMANN (1485).
 Myrmecophilous and termitophilous *Hemiptera*, BREDDIN (167).
 Termitophilous *Coleoptera*, LEWIS (880), PÉRINGUEY (1028), WASMANN (1484A).
 Bees'-nest insects, Brazil, WASMANN (1482).
 Cave insects, ABSOLON (6), CHOBOUT (272), CSIKI (332), In Australia, LEA (864), MÜLLER (970). Cavern *Coleoptera*, ABEILLE (2).—Subterranean spring, n. g. *Dytiscidæ*, ABEILLE (3), ABEILLE (4), Basses Pyrénées, *Bathyscia*, 2 spp. n.—BREIT (174), CHOBOUT (268, 271), CSIKI (328), DODERO (397), MAYET (926), MÜLLER (971), PEYERIMHOFF (1041, 1042), REITTER (1142-1152).—African cave-beetle, REITTER (1154).—SCHATZMAYR (1223), ZOUFAL (1549).
 Dipteron in hot spring, abundance and continuance, POYNTON (1105).
 Marine larva of *Aphrosylus* commensal with *Balanus*, ROUBAUD (1200).
 Hypermetamorphic beetles and their hosts, triungulins and triunguloids, PIERCE (1086).
 Diptera mining in wings of live butterflies, SCHULZ (1256).
 Relations of *Anthophora* and *Melecta*, SEMICHON (1283).
 Parasitism of *Dermatobia*, WARD (1472, 1473).
 Pitcher-plant insects, JONES (766).
 Insect-catching grass, SCHWARZ (1260).
 Adobe walls, insects in, BEYER (123).
 Various insects, brief notes on habits, STEFANI-PÉREZ (1340).
 Notes on the habits of insects of various orders, ZAMBEU (1539, 1540).
 Habits of *Geotrupes*, OHAUS (992).
 Habits, nest-construction, *Attelabus bipustulatus*, GIRAULT (610).

- Habits of *Liodes* = *Anisotoma*, FLEISCHER (513).
 Larval habits, oviposition etc. *Oberca*, WEBSTER (1498).
 Habits of *Languria* larva, CHITTENDEN (265).
Hister carnivorous, DAVIS (352).
 Notes on habits of some Aculeate *Hymenopt.*, KOPP (840).
 Hymenoptera of *Rubus* and their parasites, HÖPPNER (705).
 Nest-habits *Trachusa serratulæ*, ADLERZ (15).
 Nest of Patagonian *Anthidium*, BRETHES (179).
Methoca ichneumonoides, habits, ADLERZ (16).
 Habits of *Ceropales maculata*, ADLERZ (13).
 Assembling, *Lasiocampa*, BATTLE, p. 320, Entomologist 1904.
 Drowning, *Lep.* larvæ, CHAPMAN, p. 81, Ent. Mag. xl.
 Processionary caterpillar, notes on, ROCQUIGNY-ADANSON (1183).
 Marching of *Hemileuca* larva, MARSHALL (916).
 Habits of *Clania*, an Australian *Psychid*, LITTLER (885).
Heterogynis, habits of, and species distinction, CHAPMAN (259).
 Emergence of *Limacodids* from cocoon, homeopraxy, KÜNCKEL (847).
 Construction of case, *Psychidæ*, BURKILL, P. Asiat. Soc. June 1903.
 Pupation habits, *Vanessa antiopa*, FIELD (500).
 Suspension of cocoons, variation in, *Telea*, COCKLE, p. 100, Canad. Ent. xxxvi.
 Spinning-habits, *Attaci*, WEBSTER, Canad. Ent. xxxvi, p. 133.
Lep. larvæ, stadium without feeding, CHAPMAN & others, P. ent. Soc. London 1904, pp. lxx-lxxii.
Conopidæ, habits of, DE MEIJERE (933).
 Habits of *Anopheles* in India, JAMES & LISTON (760).
 Predaceous larva of *Anopheles*, DYAR (426).
 Floor-maggot, attacking man, DUTTON etc. (419).
 Froth of *Aphrophora*, formation of, GIRAULT (612).
Vedalia and *Monophlebus*, STEBBING (1336).
 Hatching of *Lestes viridis*, PIERRE (1087) and p. 30 Bull. Soc. ent. France 1904.
Trichoptera larvæ in cases not prepared by themselves, SILFVENIUS (1296).
 Earwigs, habits of, BENNETT (100).
 Habits of *Gongylus*, a floral simulator, egg-case, WILLIAMS (1530).
Embia taurica, habits, KUSNEZOV (850).
 Leaf-rolling *Orthopteron*, CAUDELL (253).

3. DEVELOPMENT. (See also 1g. Physiology.)

- Physiology of metamorphosis, DEWITZ (377).
 Metamorphosis, origin of reparatory cells, intestinal epithelium of *Hymenoptera*, ANGLAS (33).
 Germinogony or specific polyembryony, *Proctotrypidæ* and *Chalcididæ*, MARCHAL (906).
 Polyembryonic development, determination of sex, MARCHAL (907).
 Amitosis in oogenesis, KELLOGG (779).
 Determinant of metamorphosis etc., BRUNELLI (194).
 Tracheæ and function of metamorphosis, ANGLAS (32, 34).
 Inanition and metamorphosis, BOHN (140).
 Embryology, appendage of 1st abdom. seg. *Tenebrio*, SELYS (1271).
 Development of male gonapophyses, historical, VERNON (1442).
 Development of head and thoracic appendages, *Bombyx*, abstract of paper of last year [VERNON (1602)], VERNON (1440).
 Postembryonic devel. of appendages of head and thorax, silkworm, VERNON (1441).

- Ocelli, development of in *Periplaneta* and *Cloëon*, REITZENSTEIN (1157).
 Development of wings, specially of *Coleoptera*, POWELL (1104).
 Development of rostrum of *Rhynclophora*, McCLENAHAN (930).
 Head-shield, Lep. pupa, HAVERHORST (666).
 Development of *Aphis ribis*, embryonic and post-embr., FLÖGEL (519).
 Parthenogenetic development, *Nematus*, DONCASTER (402).
 Central nervous system, post-embryonic changes, BAUER (93).
 Embryology of mesenteron, *Meloë*, CZERSKI (340).
 Metamorphosis of alimentary canal, DEEGENER (358).
 Irregular metamorphosis, *Charaxes*, retention of larval head, CHRÉTIEN,
 p. 108, Bull. Soc. ent. France 1904.
 Intracellular histolysis, *Muscidae*, PÉREZ (1020).
 Muscle, histolysis, *Muscidae*, PÉREZ (1019).
 Ecdysis. See glands.

4. GENERAL SUBJECTS.

Variation and Teratology.

- Physiological distinction of forms of variation, metabolism, VON LINDEN (881).
 Statistical and general discussion of variation in 24 species of various Orders, KELLOGG & BELL (783).
 Etiology of variation, *Lep.*, ROWLAND-BROWN, p. 17, Entomologist 1904.
 Sexual variation in *Pselaphidae*, PEYERIMHOFF (1043).
 Variation in size, *Lepidoptera*, wing, AUDEL (56).
 Variation in length of wing, *Aporia crataegi*, BACHMETJEW (72).
 Moisture and Lepidopterous variation, PICTET (1081).
 Seasonal forms in *Rhopalocera*, BUTLER (209).—Seasonal phases, *Calidryades*, BUTLER (208).
 Melanic varr. in *E. Tibet*, OBERTHÜR, p. 174, Bull. Soc. ent. France 1904.
Rhopalocera, 18 varr. of European, SCHULTZ, Soc. ent. xix, p. 9.
 Varr. of European *Rhop.*, specially Tuscan, VERITY (1436).
 Varr. of European *Lepidoptera*, OBERTHÜR (987).
 Varr. of Belgian *Lep.*, HAVERKAMPF (667).
 45 aberrations of exotic *Rhopalocera*, LATHY (858).
 Varr. of *Parnassius*, SCHULTZ (1248).
 Variation of *Lycaena lysimon*, GRAVES, p. 51, Ent. Rec. xvi.
Heodes phlæas variation, CHAPMAN, pp. 167–172, Ent. Rec. xvi.
 Variation in number of spots, *Epinephele*, and damp seasons, BACHMETJEW (71).
 Varr. of *Epinephele tithonus*, RUSSELL, p. 125, cuts, Entomologist 1904.
 Variation of *Basilarchia proserpina* and allies, FIELD (499).
 Variation of *Hypolimnas bolina* in Fiji and Samoa, WATERHOUSE (1492).
L. ægeria, Guernsey var., LUFF, p. 190, Rep. Guernsey Soc. 1903.
 Variation of larva of *Deilephila lineata livornica*, GIARD, p. 204, Bull. Soc. ent. France 1904.
 Variation in *Philosamia*, fitness, CRAMPTON (324).
Zygena fausta and *hippocrepidis*, copula and variation, DUPUY, pp. 11, 12, Feuille Natural. xxxv.
Catocala nupta, blue var., SMITS, p. 128, Feuille Natural. xxxiv.
 Different melanic forms of *Venusia* in Yorkshire, PORRITT, p. 377, Naturalist 1904.
 Variation in *Larentiidae*, PROUT (1108).
 Variation of *Eupithecia*, DIETZE (380).

Results of breeding from *Amphidasys betularia* and var. *doubledayaria*, CASSALL, p. 49, Ent. Rec. xvi.

Breeding varr. of *P. cenea* and *Hypolimnas misippus*, LEIGH (871).

Breeding experiments *Catopsilia*, MANDERS (901).

Crossing varr. of *Abraças*, RAYNOR & DONCASTER (1120).

Polymorphism, ants, FOREL (525); EMERY (452).

Dimorphism ♂, *Formicidæ*, FOREL (531).

Variation of *Bombus*, FRIESE & WAGNER (553).

Comparative variation of drones and worker bees, LUTZ (894).

In bees, LUTZ (894) & PHILIPPS (1046).

False drones, distinctions, BACHMETJEV (70).

Var. of *Carabus auratus*, CLÉMENT, p. 245, Bull. Soc. ent. France 1904.

Extraordinary variability of a beetle *Odontopezus cupreus*, GEBIEN, pp. 307-311, Deutsche ent. Zeitschr. 1904.

Goliathus giganteus varr., CSIKI, p. 302, Ann. Mus. Hungar. ii.

Variation of *Julodis*, ABEILLE (1).

Carabus nemoralis, anomalous tarsus, PÉNEAU, Bull. Soc. Ouest France (2) iii, p. xxxvi; *Lucanus cervus*, anomalous tarsus, MARCHAND, t. c. p. xxxvii.

Supernumerary tarsus, *Hydrocharis*, WICKHAM (1527).

Anomaly of nervuration in a *Geometer*, WARREN, p. 542, Nov. Zool. xi.

Plurality of wings, *Arctia caja*, CHAPMAN, p. lv, P. ent. Soc. London 1904.

Abnormal *Lepidoptera*, supernumerary wing, four antennæ etc., Psyche xi, p. 113, pl. x.

Pupa with larval head, *Sphinx ligustri*, ZANG, Allg. Zeitschr. Ent. ix, p. 224.

Hybrids.

Hybrids of *Sphingidæ* and *Zygænidæ*, OBERTHÜR (987).

Zygæna fausta and *hippocrepidis* copula, DUPUY, p. 226, Bull. Soc. ent. France 1904.

Hybrid, *Zygæna* and *Syntomis*, VAN ROSSUM, p. 94, Ent. Ber. Nederland. i.

Copula between different species or genera, RAINBOW (1118).

Colour.

Coloration, DEWITZ (377, 378).

Opisthenogenesis, or law of development and movement of colour etc., PACKARD (1005).

Iridescent and metallic coloration, BIEDERMANN (129).

Tyrosinase in coloration, GESSARD (593).

Coloration of *Corethra* larva by feeding, KOLMER (832).

Markings of *Lepidopterous* larvæ, KUSNEZOV (849).

Diffraction, scales *Lep.* and *Thysan.*, BALSAMO (79).

Cocoons, coloration of, DEWITZ (376); VERNON (1443).

Coloration of silk, CONTE (307); DUBOIS (409): Coloration of silk, question of chlorophyll, VILLARD (1457, 1458).

Protection.

Choosing suitable situations, HAMM, p. lxxv, CHAPMAN, p. lxxvi, P. ent. Soc. London 1904.

Protection by sharing like dangers, KAYE, Tr. ent. Soc. London 1904, p. 169.

Protective coloration, GREEN (628); in *Mantis*, CESNOLA (256B).

Prot. attitudes, LONGSTAFF, p. lxxxviii, P. ent. Soc. London 1904.

Birds and butterflies, POULTON, P. ent. Soc. London 1904, p. xxxvii.

Enemies of butterflies, AITKEN (20).

Protective resemblance, KUNZE (848).

Mimicry of lichen by *Phloea*, PÉREZ (1018).

Protective resemblance in *Curculionidae*, VITALE, pp. 12-16 etc., Riv. ital. Sci. Nat. xxiv.

The coloured wings of *Catocala*, SCHAPOSCHNIKOW (1222).—*Catocala*, the wings as protective, DYAR, p. 57, J. N. York Ent. Soc.

Spot and hairs of *Acronycta alni* larva, and "Nackestreifen" of *Gastropacha pini*, CHOLODKOVSKY (273).

Inedibility of *Meloë*, DONISTHORPE, p. 150, Ent. Rec. xvi.

Value of odour of *Hemiptera*, CONRADI (306).

Resemblance.

Resemblance, COLLINS (300-302), COMBES (303), ENTZ (466), KATHARINER (774), PACKARD (1006).

The *Papilio merope* question discussed at length, SCHRÖDER (1243).

Localised mimicry, ROTHNEY, p. lxxiii, P. ent. Soc. London 1904.

Mimicry, Aculeates, SCHULZ (1253).

Resemblance, *Volucella* etc., POULTON (1214).

Mimicry by *Glenea*, ANDREWES & POULTON, p. vii, P. ent. Soc. London 1904.

Resemblance between *Hyperichia* and *Xylocopa*, POULTON, p. lxxvi, cut, P. ent. Soc. London 1904.

Xylocopa and *Asilid* fly, GREEN, p. 158, Spolia Zeylan. ii.

The supposed mimicry of *Spilosoma mendica* ♀, FEDERLEY (493).

Phylogeny, Evolution, Heredity.

Convergence, taxonomy, Protentomon, HANDLIRSCH (658).

Acquired characters, criticism of Lamarck, POULTON (1103).

Parallel adaptation, parasite and host, KÜNCKEL (847).

Function and structure in pupæ and cases of *Trichoptera*, THIENEMANN (1382).

The importance of indifferent characters as specific distinctions, PETERSEN (1033).

Brauer's views as to larvæ, PEYERIMHOFF (1044).

Mutation, selection, pattern phylogeny *Lepidoptera*, SCHRÖDER (1243).

Development of pattern, *Spilosoma*, FEDERLEY (493).

The "tails" of wings of *Lepidoptera*, PIEPERS (1083).

Origin of sexual ornaments, LAMEERE (853).

Phylogeny of *Coleoptera*, BRUNELLI (194).

Phylogeny of *Tefftus*, with general remarks, KOLBE (829).

Phylogeny of *Scarabæidæ* and *Curculionidæ*, PORTA (1098).

Phylogeny of *Termitidæ*, DESNEUX (370, 371), WASMANN (1487), WHEELER (1524).

Abstracts of numerous recent works on Evolution, SCHRÖDER (1244).

Galls.

BEUTENMÜLLER (119), BEZZI (128), COCKERELL (287), COOK (308), MATTEI (923), TROTTER (1396-1398), TROTTER & CECCONI (1399).

Gall of *Chermes orientalis*, CHOLODKOVSKY (274).—Galls of Italy, arranged phytologically, CORTI (322).—Stalk-galls, chiefly histological, HOUDARD (719).—Cynipid galls on plants other than oak, KIEFFER (791).—Galls, *Lep.*, on *Toddalea* in Ceylon, PENZIG (1017).—Phylloxerine galls, PERGANDE (1023).—Introductory work, ROSS (1188).—The larval stimulus to gall-development, RÖSSIG (1189).—Gall-guests in Italy, STEGAGNO (1341).—Galls, collection and despatch, TAVARES (1368).—*Lep.*, galls, Algeria, WALSINGHAM (1470).—Gall on *Sagina ciliata*, TRAIL, p. 130, Ann. Scott. Nat. Hist. 1904.—TROTTER, Marocco, 6 galls, Marcellia iii, pp. 14, 15.

Insects and Flowers and Plants. (See also 2 **Ethology.**)

Berberaceæ, insects affecting, GOURY & GUIGNON (618).

Ranunculaceæ, insects affecting, GOURY & GUIGNON (617).

Insects and flowers, BOUVIER (163), WERY (1512).

Choice of flowers by *Syrphidæ*, WILLIS & BURKILL (1533).

Collections, Preservation, Museums, Nomenclature.

Softening chitine for sections, METALNIKOFF (941).

Preparation of small Insects, ENDERLEIN (459).

Collecting and preparing *Microlepidoptera*, KEARFOTT (778).

Vertical inflation of larvæ, BRAINERD, p. 52, *Canad. Ent.* xxxvi.

Larvæ, mode of drying skins, BURCHELL per POULTON pp. lxxx, lxxxi, *P. ent. Soc. London* 1904.

Preservation of galls, ZABRISKIE, p. 319, *Ent. News Philad.* xv.

Insect photography, SLINGERLAND (1308).

Portable ant-nests, FIELDE (505).

Entomological microscope, KÜSTER, *Zeitschr. wiss. Mikr.* xx, p. 429, *cut.*

Apparatus for capturing small insects by aspiration, WARNIER, pp. 52-54, *Bull. Soc. Reims* xiii.

Most successful form of lamp, PERRAUD (1031, 1032).

Collecting umbrella, PIC, pp. 6, 7, *Echance*, 1904.

Cyanide bottle, STEVENSON, p. 228, *Ent. News Philad.* xv.

Case for storing boxes, VIERECK, p. 177, *Ent. News Philad.* xv.

Selys Longchamps' collection to Belgian National Museum, *Ann. Soc. ent. Belgique* xlviii, p. 180.

F. W. MANN's collection in the Museum of the Senckenberg Soc., *Ber. Senckenberg Ges.* 1903, pp. 157*-159*.

Census of von Heyden's collection of Palearctic *Coleoptera*, VON HEYDEN (681).

Particulars of the collections of the Deutsche entomologische National-Museum, KRAATZ, pp. 461-464, *Deutsche ent. Zeitschr.* 1904.

Types of *Cynipidæ* (coll. Bassett, Osten Sacken); of *Lepidoptera*, and of *Diptera*; in the American Museum of Natural History, BEUTENMÜLLER (120-122).

Nomenclature, K. DANIEL (346).—Critical notes, SMITH, pp. 179-186, *Ent. News Philad.* xv.

Supplement to list of names of genera, WATERHOUSE (1490).

Type; use of the word, WHEELER and others, *Ent. Rec.* xvi, pp. 200, etc., etc.

Types of genera, DYAR & CAUDELL (441).

Selecting types of genera, DYAR, pp. 189-192, *J. N. York Ent. Soc.* xii.

Selection of types of genera, DYAR, pp. 155, 156, *P. ent. Soc. Washington* vi.

Nomenclature, necessity for unchanging names, OSBORN (1002).

Methods of literature reference, K. DANIEL (348).

Bibliography.

Record of Insecta, 1903, SHARP (1285A).

Record of *Coleoptera*, and Insecta Gen., 1902, SEIDLITZ (1268).

Records of *Hymenoptera* and *Lepidoptera* for 1900, LUCAS (889).

OSTEN SACKEN, List of his entomological writings (1004).

A. R. Grote's works, List of, BODE (139).

Townend Glover's works, DODGE, p. 12, *P. ent. Soc. Washington* vi.

Canadian entomology 1902, Bibliography, BETHUNE (115).

The honey bee, 2nd edition, COWAN (323).

Biography.

- Ormerod Eleanor, Autobiography and correspondence, ORMEROD (999) & WALLACE (1468A).
 Fea, Leonardo, GESTRO (594) & PARONA, Atti Soc. Ligustica xiv, pp. 304-308.
 Fickert, Karl Rudolf, Dietrich, VON LINDEN (884).
 Grote, A. Radcliffe, portrait and bibliographic list, BODE (139).
 Uhagon, Serafin de, portrait and bibliographic list, ESCALERA (468).
 Fabre, J. H., receives Prix Gegner, C.R. Ac. Sci. cxxxix, p. 1119.
 d'Orbigny, H., receives the Prix Thore, C.R. Ac. Sci. cxxxix, p. 1100.
 Brischke, C. G. A., VAN ROSSUM, p. 93, Ent. Ber. Nederland i.
 Notice and portrait of Rev. George William Taylor, Canad. Ent. xxvi, pp. 1, 2, pl. i.
 Reed, Edwin C., Revist. chilena vii, pp. 138-141, portrait.
 Lorquin, P. J. M., GRINNELL, Ent. News Philad. xv, pp. 202-204.
 Spencer, Herbert, extract from his will, P. ent. Soc. London 1904, pp. xvii-xx.

Obituary Notices (arranged alphabetically).

- Antiga y Sunyer, Pedro, MORICE, p. 239, Ent. Mag. xl.
 Beaupré, Marcel Vauloger de, Bull. Soc. ent. France 1904, p. 125.
 Behr, Dr Hans Hermann, Ent. News Philad. xv, pp. 142-144.
 Buckle, Claude W., Irish Natural. 1904, p. 156.
 Causard, Marcel, Bull. Soc. ent. France 1904, p. 137.
 Hiller, Reinhold, Deutsche ent. Zeitschr. 1904, p. 7.
 Hocking, Rev. John H., Ent. Mag. xl, p. 19.
 Kelsall, Thos., Entomologist 1904, p. 52, and BAILEY, p. 19, Ent. Mag. xl.
 Klein, J. T., Ent. News Philad. xv, p. 352.
 Komarov, A. V., SEMENOV, p. 252, Rev. Russe Ent. iv.
 Mason, Philip Brookes, W. W. F., Ent. Mag. xl, pp. 17, 18.
 McLachlan, Robert, Nature lxx, p. 106.—With portrait, CALVERT, p. 226, pl. xvi, Ent. News Philad. xv.—A. E. E. & E. S., Ent. Mag. xl, pp. 145-148.—K. J. M., Ann. Scott. Nat. Hist. 1904, pp. 201-203.—Entomologist 1904, pp. 195, 196.
 Merrin, Joseph, Ent. Mag. xl, p. 112.
 Moffat, John Alston, Canad. Ent. xxxvi, p. 84.
 Philippi, R., Bull. Soc. ent. France 1904, p. 261, and with portrait and list of writings, PORTER, pp. 174-177, Revist. chilena viii.
 Rocquigny-Adanson, G. de, Bull. Soc. ent. France 1904, p. 225, and PIERRE, Rev. Sci. Bourbonnais xvii, pp. 141-143.
 Sangster, Dr John Herbert, Canad. Ent. xxxvi, p. 72.
 Schaupp, F. G., Ent. News Philad. xv, p. 352.
 Schlieben, von, Deutsche ent. Zeitschr. 1904, p. 7.
 Schmitt, Rev. Jerome, with portrait, Ent. News Philad. xv, p. 225, pl. xv, and Canad. Ent. xxxvi, p. 188.
 Schneider, Oskar, Deutsche ent. Zeitschr. 1904, p. 7, and Munchen. Kol. Zeitschr. ii, p. 94.
 Sparke, E. G. J., Ent. Mag. xl, p. 160, and Entomologist 1904, p. 196.
 Tait, William, Ann. Scott. Nat. Hist. 1904, p. 137.
 Tschitscherine, T. S., with portrait, SEMENOW, Rev. Russe Ent. iv, pp. 69-76, and G. J., Annuaire Mus. St. Petersb. ix, p. xxxii.
 Vodoz, Georges, Munchen. Kol. Zeitschr. ii, p. 93.

ECONOMIC ENTOMOLOGY.

N.B. This section is drawn up primarily for the Entomologist; special attention is therefore only given to articles that may contain new matter. In some cases articles are not referred to because scientific names are not used at all in them.

Reports: California, WOODWORTH (1536).—Canada, injurious insects in 1902, FISHER and others, Rep. ent. Soc. Ontario xxxiii, pp. 15 etc.—Colorado, 1903, GILLETTE (605).—Connecticut, BRITTON (183).—Minnesota, WASHBURN (1478): [special report, see *Ephestia* below].—New Jersey, 1903, SMITH (1318).—New York, 1903, FELT (495A).—British and extra British, THEOBALD (1372).—England, Midland Counties, COLLINGE (299).—England, 1904, WARBURTON (1471).—Ireland, 1903, CARPENTER (244).—Sweden, 1903, LAMPA (856).—Ceylon, 1903, GREEN (627).—Australia, FROGGATT (563).—New Zealand, KIRK (807).—Hawaii, *Perkinsiella saccharicida*, PERKINS (1030).

Experimental Station Record, Vols. xv, xvi, contains many notes on papers on economic entomology.

Proceedings of the sixteenth annual meeting of the Association of Economic Entomologists, Bull. U. S. Dep. Agric. Ent. xlv, contains much matter of economic interest, not specially recorded.

Abstracts of 59 recent works on economic entomology, SCHRÖDER (1241).

Principles for framing economic reports, SMITH (1320).

Injurious insects, manual, LÉCAILLON (868).

Agricultural entomology and parasitology, GUÉNAUX (644).

American Economic Ent., HOWARD (721B).

Economic entomology in India, MAXWELL-LEFROY (924).—Economic entomology in India, *Hymenoptera* etc., STEBBING (1338).

Economic entomology at St. Louis exhibition, WASHBURN, p. 769, Science xx.

Relative importance of birds and insect parasites as destroyers of insects, GRIFFINI (630).

Importance of internal parasites, EMBLETON (450).

Value of parasites and of spraying, COMPÈRE (304).

Birds, food-habits of N. American, WASHBURN (1478).

Birds as insect destroyers, SMITH, pp. 632–642, Rep. New Jersey exp. Stat. 1903.

Imported insects, utility of, specially *Scutellista*, MARLATT (914).

Useful insects, gardens, Sweden, LAMPA (857).

Light—captures by, proportion of males and females, DEWITZ, Aug. Zeitschr. Ent. ix, pp. 401–409.

Stifling by cold in cocoons, LOVERDO (886).

Insecticide experiments, SMITH (1321).

Remedies for injurious insects, Sweden, TULLGREN (1406).

Value of cyanide pot. in killing injurious insects, COSTANTIN and others, Bull. Mus. Paris ix, pp. 415–419.

On feeding silkworms, and on *Ericerus pe-la*, SASAKI, Bull. Coll. Agric. Japan 1904.

Bee-culture in India, NURSE, p. 175, J. Bombay Soc. xvi.

Bees'-wax in India, HOOPER (703).

Digestibility of Chitin, value of insects as food, ZAITSCHEK (1543).

Coleoptera useful in forestry, *Malacoderm.* and *Tenebrion.*, POMERANTZEV (1091).

Novius cardinalis and *Icerya purchasi* in Italy, RIBAGA (1170).

Caterpillars and tree-growth, FOSTER (537).

Cocoa, insects of, BANKS (80).

Coffee, insects injurious to, in German East Africa, ZIMMERMANN, cf. Berlin. ent. Zeitschr. xlix, pp. 207, 208.

- Coffee and *Xylotrechus* in Tonkin, BOUTAN (162).
 Orange, *Coccide* of, COCKERELL (295).
 Apple and Plum, China, *Coleophora* injurious to, BUSCK (206).
 Pear, *Cecidomyia nigra* and *Sciara pyri*, FERRAUT (498).
 Grape, new *Cecidom.* pest, SLINGERLAND & JOHNSON (1309).
 Grape leaf-hopper, *Typhlocyba*, SLINGERLAND (1306).
 Cotton, West Indies, insects attacking, BALLOU (78).
 Tomato, *Dicyphus saparatus*, injurious to, cf. KYLE & GREEN, Entomologist 1904, p. 12.
 Sâl-tree, India, *Monophlebus*, etc., STEBBING (1336).
 Teak, enemies of, HOLE (696).
 Locust-tree (*Ceratonia siliqua*), *Cecidom.* injurious to, MARCHAL (911).
 Fig, coccid attacking, BERLESE (106).
 Beech-tree *Coccid*, NEWSTEAD, pp. 755-760, J. Board Agric. London xi.
 Trees destroyed by beetles, MELANDER, p. 19, Ent. News Philad. xv, pl. v.
 Roses attacked by *Platyptilia*, New York, MURTFELDT, p. 334, Canad. Ent. xxxvi.
 Rose *Cecid.*, *Neocerata rhodophaga*, WEBSTER (1499).
 Palms in New Britain injured by *Hispide*, SHARP (1285).
 Grass *Aphides*, PERGANDE (1024).
Sorghum, injurious insects of, THEOBALD (1375).
 Ferns and orchids, injurious insects to, Australia, FROGGATT (561).
Anthonomus grandis, SANDERSON (1209, 1210).—*Anthonomus grandis*, enemies, HERRERA (677).—Cotton-boll weevil in Cuba, SCHWARZ (1261).—Cotton-boll weevil, ant destroying, COOK (309, 310), WHEELER (1517).
Acanthia fulleri in California, MASKEW, pp. 46-50, Bull. U. S. Dep. Agric. Ent. xlv.
Brachyderes incanus, injuring firwood, JACOBI (737).
Cleonus punctiventris, ravages and diseases, WIZE, Bull. Ac. Cracovie 1904, pp. 713-726, ROVARA (1201).
Scolytus destructor in Germany, REHBERG, p. 92, Schr. Ges. Danzig xi.
Epicauta adspersa, injurious to *Solenaceæ* etc., BRÊTHES (182).
 Nut-weevils, injuries and remedies, CHITTENDEN (267).
 Pea-weevil in Canada, conference, LOCKHEAD, Rep. ent. Soc. Ontario xxxiii, pp. 3-15.
Bruchus pisi in Chile, RIVERA (1177).
Scarabæide, injurious to corn, Chile, RIVERA (1178).
Blennocampa geniculata, injuring strawberries, Sweden, TULLGREN (1407).
Janus compressus, injurious to pear-trees, JABLONOWSKI (732).
Nematus erichsoni, injuring larch, EFLVING, p. 72, Medd. Soc. Faun. Fenn. 1902/03.
Solenopsis geminata, injuring oranges in Porto Rico, BARRETT (89).
Clisiocampa americana, SURFACE (1356).
Deilephila livornica, injuring vines, Algeria, GIARD, pp. 203-206, Bull. Soc. ent. France 1904.
Ephestia kuehniella, reports on, WASHBURN (1478, 1479).
Oenophthira pilleriana, Pyral. of the vine, MARCHAL (912).
Leucania unipuncta in Australia, FROGGATT (559).
 Grape-berry moth, *Polychrosis viteana*, SLINGERLAND (1307).
 Moth *Oncoptera*, destructive to pastures, Tasmania, LITTLER, pp. xxvi, xxvii, P. ent. Soc. London 1904.
 Codling moth, WOODWORTH (1537).
 Asparagus-fly, *Platyparea pæcilopectera*, LESNE (879).
Pentatoma sayi, injuring grain, GILLETTE (605).
Aphis persicæ, treatment and parasites, Australia, FROGGATT (562).
Phylloxera in Europe, at present, BLUNNO (138).
Phylloxera winter egg destroyed by lysol, CANTIN (242).

- Phylloxera* on *Hicoria*, PERGANDE (1023).
Chrysomphalus minor in Europe, MARCHAL (913).
 Coccid destroying a noxious grass, FROGGATT (560).
 Termites injuries and mode of destruction in Turkestan, JACOBSON (741).
Psocid injurious in Germany, ENDERLEIN (454).
Trichoptera injurious to bridge-timbers, SILFVENIUS (1295).
Acridium succinctum and *peregrinum* in India, AITKEN, p. 157, J. Bombay Soc. xvi.
Acridium, destruction of in India, HEATH (669), MOSSE (967).
 Migratory locust of Peru characters, LYNCH ARRIÁZAGA (897).
 Sheep-maggot-fly, Australia, FROGGATT (564).
Phormia regina and *Lucilia caesar* attacking bird, VICENT, p. 136, Ent. News Philad. xv.
 Domestic animals, insects affecting, Amazons valley, MIRANDA (949).

Insects and disease in Man.

- Lawsuit as to mosquitoes, HOWARD, p. 7, P. ent. Soc. Washington vi.
 Insects attacking man, LELEAN (873), SAMBON (1205).
 Floor-maggot attacking man in Africa, DUTTON etc. (419).
Musca domestica as disseminator of disease, AUSTEN (67).
 Larva affecting man and dogs in French Guinea, LE DANTEC & BOYÉ (869).
 Parasites of rats and mice as conveyors of bubonic plague, TIRABOSCHI (1387, 1388).
Bengalia depressa, in Africa, attacks on man and dogs, TOWNSEND (1393).
 Insects attacking man, *Gastrophilus epilepsalis*, FRENCH, p. 83, Canad. Ent. xxxvi.
Hypoderma bovis attacking man in Sicily, CONDORELLI (305).
Dermatobia, attacks on man and animals in Costa Rica, WARD (1472, 1473).
 Larva of *Homalomyia* in the human stomach, FLORENTIN (520).
 Larvæ in the Nares, MARTINEZ (920).
 Transmission of sleeping sickness, BRUMPT & BLANCHARD (192A).
Glossina and disease, BRUMPT (191).
 Mosquito control, SMITH (1315, 1318), BRITTON (183).
 Destruction of mosquitoes by petroleum, Prince D'ARENBERG (37).
 Mosquitoes and disease, GOELDI (615).
 Mosquitoes and yellow fever, HOWARD (721A).
 Mosquitoes and malaria, GILES (601, 692).
 Malaria and mosquitoes in India, and their control, JAMES (758, 759).
Anopheles in India, JAMES & LISTON (760).
 Malaria and mosquitoes in Madagascar, NEIRET (979).
 Control of mosquitoes at Bathurst, Gambia, DUTTON (418).
 Malaria and mosquitoes in Victoria, LEACH (865).
Culicidae and their parasites, DYÉ (444).

FAUNISTIC: GEOGRAPHICAL DISTRIBUTION.

N.B.—The numbers in brackets refer to “Titles”; by their means it is intended to give a reference to every memoir containing a notice affecting the entomological fauna of each of the twelve regions here adopted. But synonymical notes and changes of systematic position are not included in these references. In addition to giving references to titles of works that actually add to the faunistic record of a region, there are also comprised references to a large number of works on local faunæ, or “stations.” In such cases the reference is, as a rule, made direct to the original work, not to our title-numbers, many of these local faunistic notes not being included at all in our list of titles.

In this Faunistic division varieties are not included: neither is a new genus (unless it is also a n. sp.), nor synonymy. When no subordinate locality is mentioned in connection with a memoir, it is to be understood that it refers to several divisions of the region indicated by the immediate subheading.

GENERAL.

Climate and distribution, WALKER (1464).

Distribution of some *Diaspini*, *Coccidæ*, REH (1127).

Ancient geography and modern distribution, *Cicindela*, WICKHAM (1526).

Summaries of numerous recent faunistic works, SPEISER (1333).

N. spp. without locality: see *Hymenoptera*, *Hyptia* & *Gasteruption*, *Pristaulacus*. *Colobathristes facetus* cf. *Hemiptera Lygæidæ*.

Diplatys æthiops, see *Orthoptera Forficulidæ*.

1. ARCTIC AND ANTARCTIC.

FAUVEL (485); New South Georgia, n. g. *Staphylinidæ*.

Crozet Ids. See Insular.

2. INSULAR (including NEW ZEALAND).

Madeira: *Coleoptera*, DESBROCHERS (361), *Laparocerus* sp. n. PETRI (1137), *Lixus* n. sp. *Hymenoptera*, *Formicidæ*, FOREL (531). *Diptera*, *Psychodidæ* n. sp., EATON (445).

Canary Ids.: *Hymenoptera*, *Aculeata*, SAUNDERS (1215), 8 spp. n. BERTHOUMIEU (112), *Ichneumonidæ*, 2 spp. n. *Diptera*, BECKER (95), *Peletochila* sp. n. *Hemiptera*, REUTER (1169), *Capsidæ*, 4 spp. n.

Galápagos: *Lepidoptera Perixera* sp. n., WARREN (1476).

Hawaiian Ids.: *Collembola*, CARPENTER (243). *Thysanura*, SILVESTRI (1297). *Mallophaga*, KELLOGG & CHAPMAN (784). *Macrolepidoptera*, MEYRICK (947, 948). *Hemiptera*, KIRKALDY (809), 6 spp. n. *Coccidæ*, KIRKALDY (810).—See also New Zealand, ALFKEN.

“Oceania”: *Hesperiidæ*, *Corone* n. sp., MABILLE (898).

Solomon Ids.: *Coleoptera*, JACOBY (749), *Mouhotina* & *Luperodes* n. sp. *Lepidoptera*, JORDAN (771), *Caprimima*, sp. n. *Rhopalocera* n. spp., ROTHSCILD (1197). *Metallochloa* n. sp., *Xanthomima* n. sp., WARREN (1476). *Phasmidæ*, KIRBY (805), *Necroscia*, sp. n.

Rossel Ids.: *Phasmidæ*, KIRBY (805), *Eurycantha*, sp. n.

New Pomerania: *Coleoptera*, WEISE (1504), *Hispidæ*, sp. n.

New Britain: *Coleoptera*, *Hispidæ* n. g., SHARP (1285). *Phasmidæ*, KIRBY (805), *Eurycantha*, sp. n.

Bismarck Archipelago: *Psocidæ* n. g., ENDERLEIN (455).

New Hebrides: *Coleoptera*, *Theca* n. sp., *Hyocis* n. sp., FAUVEL (486).

Tonga Ids.: *Hippoboscidæ* n. sp., SPEISER (1331).

Fiji Ids.: *Hemiptera*, HORVÁTH (714), *Colobathristinæ* n. sp.

Fiji & Samoa: *Lep. Rhop.*, WATERHOUSE (1492).

Marschall Ids., Insecta. *Chrysopa* 1 sp. n., SCHNEE (1232). KEMPNY (785), *Chrysopa* sp. n.

Thursday Ids.: *Phasmidae*, KIRBY (805), *Eurycantha*, sp. n.

Shortland Ids.: *Lepidoptera*, SWINHÖE (1364), *Tagiades* n. sp.

New Caledonia: *Coleoptera*, *Buprestidae*, *Tenebrionidae* n. spp., FAUVEL (486). RAFFRAY (1114), *Pselaphidae*, general work.

New Zealand & Hawaiian islands, *Insecta*, ALFKEN (22).

New Zealand: *Insecta*, HUTTON (726). New Zealand, Account of a year's collecting, WALKER (1467).

Coleoptera, BROUN (184), 41 spp. n., genn. n. Bounty Is., BROUN (185), *Hydrophilidae* n. g. RAFFRAY (1114) *Pselaphidae* general work, *Eupines* n. sp. *Hymenoptera*, COCKERELL (282) *Leioproctus*, 2 spp. n.

Lepidoptera, PHILPOTT (1047) Southern *Lep.* *Diptera*, HUTTON (727),

Phorocera, 7 n. spp.—id. *Limnia*, 2 spp. n. (728)—id. (730) Campbell

Is., *Calliphora* n. sp. *Neuroptera*, HUDSON (723), popular work.

Orthoptera, REHN (1128), *Ectobia*, sp. n. Chatham Is.: HUTTON (729),

Pleiopteron, sp. n.

Falkland Ids.: *Insecta*, VALLENTIN, few species, Mem. Manchester Soc. xlviii, No. 23, pp. 20–22.

Kerguelen Ids., ENDERLEIN (462), n. g. *Anoplura*.

Crozet Ids.: *Coleoptera*, ENDERLEIN (460), *Curculionidae*, 3 spp. n., n. g. *Hemiptera*, ENDERLEIN (461) n. g. *Henicocephalidae*.

3. PALÆARCTIC REGION.

(a.) Collective: i.e. papers referring to more than one of the following sub-divisions, c—h.

China, with the exception of Mongolia, is included in "Asia."

Coleoptera. ABEILLE (1), Mediterranean and Persia, *Buprest*, spp. n. BERNHAUER (107), *Aleocharini*, part 2, n. spp. DU BUYSSON (214), Basses Pyrénées and Amurland, *Elateridae*, 4 spp. n. DU BUYSSON (215), Bagdad, Spain, *Athous* n. sp. DANIEL (343), *Crepidodera*, revision, 2 spp. n. DANIEL & DANIEL (349), 10 spp. n., *Carabidae*, *Elateridae*, *Curculionidae*, *Bruchidae*, *Chrysomelidae*. DESBROCHERS (361), *Curculionidae*, 18 spp. n. DESBROCHERS (362), revision of *Lixus*, 5 spp. n. DESBROCHERS (363, 365), Caucasus and N. Persia, *Eusomus*, 4 spp. n. DESBROCHERS (364), incl. Arabia, *Curculionidae*, 5 spp. n. ESCALERA (467), Spain and Syria, *Acmaeodera*, 2 spp. n. FAUST (481), incl. Persia, Arabia, Mongolia, *Cleonides*, many spp. n. ✓FAUVEL (483), Sinai and Red Sea, *Staphylinidae*, 6 spp. n. FLEISCHER (514), *Scaritides*, tables, n. spp. ✓FORMÁNEK (534), Astrabad, Syria, Basses Alpes, *Barypithes*, *Omiis*, spp. n. GANGLBAUER (582), Croatia, Slavonia, Servia, *Anophthalmus*, *Hydroporus*, *Riolus* n. sp. JACOBSON (740), Manchuria list, *Anomala* n. sp. ✓JAKOVLEFF (752), Mediterranean and West Asia incl. Buchara, Persia, *Sphenoptera*, 8 spp. n. KLIMA (820), *Trogophloeus*, revision, 3 spp. n., Amurland, Corfu and Turkestan. PETRI (1035), *Lixus* n. spp. PETRI (1036), Siberia, Alexander Mts., *Lixus* n. sp. PIC (1063), Amurland, *Cerambycidae*, spp. n., Spain, *Dorcadion* sp. n. PIC (1065), Siberia, Tokat, 9 spp. n. PIC (1068), 6 spp. n. PIC (1071), Mediterranean, Bagdad, Amurland, *Bryaxis*, *Malacod.*, *Curcul.* spp. n. PIC (1072), Spain *Dorcadion*, France *Crepidodera*, Taurus *Chrysanthia* and *Titubæa* n. sp. PIC (1077), 22 spp. n. POPPIUS (1094), N. Russia, E. Siberia, Mongolia, *Mycetoporus*, *Choleva*, *Epuraeu*, *Simplovaria*, *Anatolica*, *Scythis* sp. n. RAFFRAY (1114), *Pselaphidae* general work. REITTER (1143), notes on localities etc. REITTER (1144), Pal. including Mongolia, *Saprinus*, 7 spp. n. REITTER (1148),

Cionus n. spp. REITTER (1149), Asia Minor, *Eurostus* sp. n., Galicia
Aphthona sp. n. REITTER (1152), 15 spp. n. REITTER (1155),
 Algeria, *Ammæcius*, Persia, *Lethrus*, *Prosodes*, Afghanistan and Gobi,
Acinæodera, spp. n. SCHILSKY (1227), incl. Bucharâ, *Urodon*, 3 spp. n.
 SEMENOV (1272), Mongolia and Tibet, *Elaphrus*, 2 spp. n. SEMENOV
 (1273), localities of various species. SOLARI (1326), E. Europe and
 Tangier *Curculionidæ*, 8 spp. n. WAGNER (1462), Austria, Corfu, *Apion*,
 3 spp. n.

Lepidoptera. ALFKEN (23), *Prosopis*, 3 spp. n. BERTHOUMIEU (110),
Ichneumonidæ, 11 spp. n. KOKUJEV (827), Corea, *Exetastes*, 2 spp. n.,
 W. China, *Ichneumonidæ* spp. n., *Braconidæ*, 4 spp. n. KOKUJEV (828),
 Ural and Transcaucasus, *Ichneumonidæ*, 2 spp. n. KONOW (836), N. &
 Central Europe, *Lygæonematus* revision, 9 spp. n. KONOW (837), Pal.
 incl. Saghalin Id. *Sessiliventes*, 15 spp. n. KONOW (834), *Pachynematus*
 n. spp. KONOW (835), Europe and East Siberia, *Pteronius*, 3 spp. n.
 MORICE (957), *Colletes*, 6 spp. n. SCHMIEDEKNECHT (1231), Oran,
 Switzerland, *Ichneumonidæ*, 3 spp. n. Localities for Palæarctic *Sphegidæ*,
 SCHULZ (1254).

Lepidoptera. ✓ BARTEL (91), Palestine, *Noctuidæ*, 2 spp. n. DIETZE
 (380), *Eupithecia*, 16 n. spp. FUCHS (572), Sarepta, *Cucullia* n. sp.;
 Bornich, *Eriocrania* n. sp. HERZ (680), Korea, *Noctuidæ*, *Geometridæ*,
 320 spp., 18 spp. n. PÜNGELER (1110), *Noctuidæ* *Geometridæ*, 14 spp. n.
 ISCHETVERIKOV (1400), Mongolia, *Dasychira* sp. n., *Noctuidæ*, 3 spp. n.
 TUTT (1413), *Sphingidæ* Catalogue. JOANNIS, *Microlepidoptera* 5 novel-
 ties, Bull. Soc. ent. France 1904, p. 173.

Diptera. BECKER (96), *Lispa* monograph, 9 spp. n. ✓ SPEISER (1330),
 Europe, Sinai, Smyrna, *Hippoboscidæ*, 2 spp. n.

Hemiptera. JAKOVLEFF (754), Siberia, Corea, Turkestan, Mongolia,
Heteroptera, 7 spp. n. JAKOVLEFF (755), Mantchuria, Central Asia,
 Transcaucasus, *Acanthosoma* sp. n., *Coriomeris*, 2 spp. n. MELICHAR
 (938), *Membracidæ* and *Cercopidæ*. REUTER (1162), Siberia and Trans-
 caspian, *Stenodema*, 2 spp. n. REUTER (1169), Germany, Mongolia,
 Crete, Central Asia, *Capsidæ*, 11 spp. n. MELICHAR (939), *Cicadidæ*.

Trichoptera. MORTON (963), *Hydroptilidæ*, numerous localities; Cintra
 sp. n., Britain sp. n.

(b.) Europe, collectively.

Coleoptera. GANGLBAUER (580), Central Europe, general work, n. g.,
 n. spp.

Hymenoptera. MAYR (928), Germany and S. Europe, *Chalcididæ*,
Proctotrypidæ, spp. n., *Ormyrus* revision.

Lepidoptera. RIESEN makes some corrections to his lists of *Macrolepi-
 doptera* published in Stettin Ent. Zeit. from 1887 to 1901; Ent. Zeit.
 Stettin. lxx, pp. 212-214.

Diptera. CZERNY (339), *Helomyza*, 3 spp. n.

(c.) British Islands.

THE FAUNA AS A WHOLE.

Insecta. Eddystone lighthouse, CLARKE (279). Disappearance, South-
 eastern Counties, WEBB, McDAKIN & GRAY (1496). Fire at Wicken fen,
 VERRALL, p. 112, Ent. Mag. xl.

Coleoptera. *Catops sericatus*, novelty, CHAMPION, p. 78, Ent. Mag. xl.
Agathidium bodium, novelty, CHASTER (261). *Calodera nigrata*, novelty,

NEWBERY, p. 251, Ent. Mag. xl. *Aulonium sulcatum*, novelty, POOL (1902).

Rhynchites sericeus withdrawn, CHAMPION, p. 79, Ent. Mag. xl.

Introduced Longicorns, BAGNALL, p. 262, Ent. Rec. xvi. Introduction of *Ptinus tectus*, HUDSON-BEARE, p. 4, Ent. Mag. xl. Doubtful or very rare British *Coleoptera*, NEWBERY, pp. 204, 205, Ent. Rec. xvi: HUDSON-BEARE, t. c. pp. 289-291. Doubtful species in the Power collection, NEWBERY, pp. 133, 134, Ent. Mag. xl. *Morimus funereus* in the Docks, ANSORGE, p. 117, Entomologist 1904. *Leptidea brevipennis* as British, WOOD & HOLLAND, Ent. Mag. xl. p. 60. Retrospect of a Coleopterist for 1903, HUDSON-BEARE, Ent. Rec. xvi, pp. 29-31. Ten years captures of new British beetles, DONISTHORPE, pp. 135-143, Tr. Leicester Soc. viii. British nomenclature of *Phytophaga* compared with Bedel, NEWBERY, pp. 80-83, Ent. Rec. xvi. Catalogue of British *Coleoptera*, BEARE & DONISTHORPE (94).

Hymenoptera. MORICE continues his notes of the characters of British *Tenthredinidæ*, Ent. Mag. xl, pp. 33 etc.

Crabro styrius and *Halictus semipunctulatus*, novelties, SAUNDERS, Ent. Mag. xl, p. 10. *Halictus freygessneri*, novelty, SAUNDERS (1217). *Rhadinocerca micans*, novelty, MORICE, p. 100, Ent. Mag. xl.

Lepidoptera. *Ceramidia butleri* at Marlborough, MEYRICK, p. 253, Ent. Mag. xl. *P. podalirius*, BRANDE, p. 264, Entomologist 1904, and MEYRICK, t. c. p. 284. TUTT, vol. IV of British *Lepidoptera*, *Sphingidæ* (1413). Curtis coll. at Sydney, nomenclature, WALKER (1468). *Deilephila livornica* in England 1904, Entomologist 1904, pp. 188, 189. *Deilephila livornica* in England, COSTE, Nature lxx, pp. 389 & 506, THOMAS, t. c. p. 455; in Ireland, MEEHAN, p. 628, t. c.

Colias hyale in England 1900, PILLEY, Tr. Woolhope Club 1900-1902, pp. 171-173. *V. cardui* swarm at Hunstanton, BARRETT, Ent. Mag. xl, p. 61.

Diptera. *Dilophus ternatus*, *Chyliza vittata*, *Tanypeza longimana*, novelties, BLOOMFIELD, Ent. Mag. xl, p. 60. *Corethra obscuripes*, novelty, COLLIN, p. xxxiii, P. ent. Soc. London 1904. *Psychodidæ*, 2 spp. n., EATON (445). *Hydrotea pilipes*, novelty, GRIMSHAW (632). *Oncomyia sundewalli*, novelty, GRIMSHAW (633). *Asteia elegantula*, novelty, JENKINSON, p. 4, Ent. Mag. xl. *Periscelis annulata*, *Ochthera mantispa*, novelties, LAMB, p. 277, Ent. Mag. xl. *Callicera yerburyi* n. sp., VERRALL, Ent. Mag. xl, p. 229. *Neoitamus cothurnatus*, *Anthrax circumdata*, novelties, VERRALL, p. xxxiii, t. c. *Dolichopododidæ*, catalogue, novelties, VERRALL (1438).

Catalogue of *Cecidomyiidae*, COLLIN (298). The British *Diptera brachycera*, VERRALL, pp. xxviii-xxxii, P. ent. Soc. London 1904. *Oxycera dives*, confirmed, Perth, CARTER, p. 16, Ent. Mag. xl. Retrospect of a Dipterist for 1903, COLLIN, pp. 57, 58, Ent. Rec. xvi. *Trypetidæ*, some rare, DALE, pp. 212, 213, Ent. Mag. xl, and cf. VERRALL, t. c. p. 238. Notes on desiderata, VERRALL, pp. 165, 166, Entomologist 1904.

Hemiptera. *Drymus confusus*, *Salda setulosa*, novelties, BUTLER, p. 275, Ent. Mag. xl.

Trichoptera. *Oxyethira* n. sp., Rannoch, MORTON (963).

Odonata. Notable captures and novelty 1902, 1903, LUCAS (890).

Orthoptera. The British *Stenobothrus*, BURR, pp. 273-275, Ent. Rec. xvi.

Collembola. CARPENTER & EVANS (245); novelties, n. sp. *Aenylla brevicauda*, novelty, CARPENTER, p. 198, pl. xa, Irish Natural. 1904.

LOCAL LISTS.

The arrangement adopted in each Order is roughly, Channel Islands, England from South to North and from West to East, Wales, Scotland, Ireland.

Insecta. Guernsey, LUFF, pp. 197–199, Rep. Guernsey Soc. 1903 (incl. *Calosoma sycophanta*). Scilly isles, *Diptera* and *Col.*, YERBURY, pp. 154–156, Ent. Mag. xl. Dorset, RICHARDSON, first appearance, 1902, P. Dorset Club xxiv, p. 187. Hastings, BLOOMFIELD, p. 32, Rep. Hastings Soc. xi. Ashford, *Lep.* and *Dipt.*, JEFFREY, Rep. E. Kent Soc. (2) iii, p. 25 and iv, p. 35. Faversham, chiefly *Col.*, in old hedges; CHITTY, pp. 100–103, Ent. Mag. xl. Marlborough, MEYRICK, pp. 35–44, Rep. Marlbor. Soc. lii. Horsley, LUCAS, pp. 9–13, P. South London Soc. 1903. Hertfordshire, *Lep.* and *Col.*, GIBBS, pp. 139–141, Entomologist 1904. Amersham, *Col.* and *Lep.*, TURNER, pp. 3–6, P. South London Soc. 1903. Cambridgeshire, FARREN and others (479). Suffolk, TUCK, Entomological notes, Tr. Norfolk Soc. vii, pp. 635, 636. Norfolk Broads; BROWNE (186). Yorkshire, many notices see Naturalist 1904, Index, pp. 392–395. Hull; FOSTER, H. M., List of the aquatic larvæ of flies occurring in the Hull district, Tr. Hull Club iii, pp. 180, 181. Aberdeen, *Diptera* and *Tenthredinidae*, BLOOMFIELD, p. 193, Ann. Scott. Nat. Hist. 1904. South Kerry, BOUSKELL, F., Three weeks in the wilds of, with notes on the Insects and Plants, Tr. Leicester Soc. pp. 49–60. Sligo, *Col.*, HALBERT, pp. 194–196, *Hemipt.*, HALBERT, pp. 196, 197, *Aptera*, CARPENTER, pp. 197, 198, Irish Natural. 1904.

Coleoptera. Guernsey, *Calosoma sycophanta*, LUFF, p. 59, Ent. Mag. xl. Plymouth, KEYS, p. 14, t. c. Looe, *Strangalia aurulenta*, WOOD, p. 261, t. c. Isle of Wight, HUDSON BEARE, t. c. p. 257. New Forest, *Trachys parvulus*, DONISTHORPE, p. xxxix, P. ent. Soc. London 1904. New Forest, DONISTHORPE, p. 325, Ent. Rec. xvi. Dean Forest, *C. castaneus* etc., MORSE, p. 138, Ent. Mag. xl. Tewkesbury, DONISTHORPE, p. 206, Ent. Rec. xvi. Berkshire, JOY, pp. 39, 40, Ent. Mag. xl. Berkshire, JOY, p. 182, t. c. Berks, *Orochares*, JOY, p. 182, t. c. Berkshire, *Bledius femoralis*, JOY, p. 237, t. c.; FOWLER, t. c. p. 238. Berkshire, JOY, p. 279, t. c. Wokingham, *Bem. obliquum*; Oxford, *Medon dilutus*; JOY, t. c. p. 14. Oxford, *Plagioderia*, WALKER, p. 210, t. c. Oxford, *Apion brunnipes*, HOLLAND, p. 108, t. c. Bagley Wood, WALKER, p. 138, t. c. KENT, *Omalium septentrionis*, DONISTHORPE, p. 149, Ent. Rec. xvi. Canterbury etc., MAUDSON, p. 46, Rep. E. Kent Soc. (2) i, and p. 24, op. cit. iii. Sheppey, WALKER, p. 259, Ent. Mag. xl. Hastings, BENNETT, p. 326, Ent. Rec. xvi. Surrey, CHAMPION, p. 256, Ent. Mag. xl. Surrey, W. E. SHARP, Ent. Mag. xl, p. 43. Surrey, *Peritelus*, DONISTHORPE, p. 150, Ent. Rec. xvi. Woking, *Bagois brevis* etc., WALKER, p. 158, Ent. Mag. xl. Woking, *Conopalpus*, CHAMPION, p. 183, t. c. North London, *Clytus arcuatus*, WILLIAMS, p. 167, Entomologist 1904. Henley-on-Thames, *Panagæus*, FOWLER, p. 238, Ent. Mag. xl. Brandon, JENNINGS, p. 87, t. c. Brandon, TOMLIN, p. 60, t. c. Sherwood, *Rhinomacer*, TAYLOR, p. 158, t. c. Sherwood, TAYLOR, p. 258, t. c. Norfolk and Suffolk, MORLEY (960). Norfolk, EDWARDS, Tr. Norfolk Soc. vii, pp. 744–746. Norfolk, *Odonteus*, SMITH, p. 210, Ent. Mag. xl. Norfolk, *Odonteus*, ATMORE, p. 238, t. c. King's Lynn, *Ceuth. angulosus*, NEWBERY, p. 86, t. c. Norfolk, *Tetropium castaneum*, ATMORE, p. 85, t. c. Buxton, *Meloë*, TAYLOR, Ent. Mag. xl, p. 136. Derwent valley, *Metoeus*, BAGNALL, p. 159, t. c. Derwent valley, *Bembidium*, BAGNALL, p. 259, t. c. Derwent valley, *Longicornia*, BAGNALL, p. 86, t. c. Derwent valley, *Triplax ænea*, BAGNALL, p. 108, t. c. Derwent valley, *Monohammus sutor*, BAGNALL, p. 59, t. c. Yorkshire, *Geodephaga*, CARTER, pp. 148–150, Naturalist 1904. Knutsford, *Lampyrus*, OLDHAM, p. 316, Naturalist 1904. Chelford, *Prionus*, OLDHAM, p. 315, t. c.

Lake District, *Geotrupes typhaeus*, OLDHAM, p. 284, ARMITT, p. 316, Naturalist 1904. Cumberland, DAY, pp. 135, 136, Ent. Rec. xvi. Northumberland, Durham, *Clinocara*, BAGNALL, p. 108, Ent. Mag. xl. Northumberland and Durham, additions, BAGNALL, pp. 260-262, Ent. Rec. xvi. Gibside, *Triplax*, BAGNALL, p. 210, Ent. Mag. xl. Isle of Man, TOMLIN, pp. 177-179, t. c. Isle of Man, *Otiorrhynchus*, BAILEY, pp. 180, 181, t. c. Isle of Man, *Longitars. curtus*, TOMLIN, p. 60, t. c. Wales, *Quedius longicornis*, BEDWELL, p. 60, t. c. N. Wales, *Lamia*, JACKSON, p. 211, t. c. Snowdon, BEDWELL, p. 1, P. ent. Soc. London 1904. S. Wales, TOMLIN, *Lath. angusticollis*, Ent. Rec. xvi, p. 18. Peebles, BLACK, Ent. Rec. xvi, p. 17. Wigtownshire, GORDON, pp. 78-80, Ent. Rec. xvi. Rannoch, WOOD, p. 260, Ent. Mag. xl. Co. Down, *Dytiscidae*, JOHNSON, p. 93, Entomologist 1904.

Hymenoptera. Guernsey, *Aculeata*, *Chrysididae*, LUFF, p. 281, Ent. Mag. xl. Guernsey, LUFF, *The Chrysididae, Ichneumonidae* and *Bracconidae* of, Rep. Guernsey Soc. 1903, pp. 245-247. Lyme Regis, *Aculeata*, NEVINSON, p. 13, Ent. Mag. xl. Torcross, *Aculeata*, SAUNDERS, p. 62, t. c. New Forest, *Aculeata*, BLOOMFIELD, t. c. p. 13. Milford-on-Sea, *Aculeata*, SAUNDERS, p. 280, t. c. Margate, *Andrena niveata*, SAUNDERS, p. 159, t. c. Rochester, *Aculeata*, MALLOCH, p. 87, t. c. Wellington, *Stelis 8-maculata*, BANKS, p. 179, t. c. Oxford, *Aculeata*, PERKINS and others, Rep. Oxfordsh. Soc. 1900 (no pagin.). Porthcawl, SAUNDERS, Ent. Mag. xl, p. 12. Hertfordshire, *Sirex juvenicus, gigas*, GIBBS, p. 40, t. c. Hertfordshire, *Sirex noctilio, gigas*, GIBBS, pp. 73-76, Tr. Hertfordsh. Soc. xii. King's Lynn, *Aculeata*, MALLOCH, p. 63, Ent. Mag. xl. Lincolnshire, *Hym.* galls, STOW, p. 284-346, Naturalist 1904. Louth, *Sirex noctilio*, CARTER, p. 377, Naturalist 1904. North Durham, *Aculeata*, HARRISON, p. 41, Ent. Mag. xl. Scotland, *Aculeata*, SAUNDERS, pp. 248, 249, t. c. Scotland, *Crabro styrius* and *capitosus*, EVANS, Ann. Scott. Nat. Hist. 1904, p. 58. Forth, *Andrena helvola*, CARTER, p. 248, t. c. Dumbartonshire, *Tenthredinidae* and *Aculeata*, MALLOCH, pp. 41-43, Ent. Mag. xl. Bute and Arran, *Sirex gigas* and *S. juvenicus*, BALLANTYNE, Tr. Soc. Glasgow vi, pp. 305, 306. Fort William, *Aculeata*, ROTHNEY, p. 280, Ent. Mag. xl. Aviemore, *Crabro carbonarius*, MALLOCH, p. 62, Ent. Mag. xl. Ireland, *Ichneumon.* and *Bracon.*, JOHNSON, p. 256, Irish Natural. 1904. Ireland, *Ichneumonidae*, JOHNSON, p. 262, Ent. Mag. xl.

Lepidoptera. Jersey, CONEY, pp. 127-131, Entomologist 1904. Dawlish, BROWNE, pp. 22-26, TURNER, pp. 27, 28, P. South London Soc. 1903. Mortehoe, N. Devon, further notes, LONGSTAFF, pp. 29-32, Ent. Mag. xl. Dorset, *Nola albulalis*, RICHARDSON, p. 211, Ent. Mag. xl. Dorset, BANKES, pp. 253-255, t. c. Isle of Purbeck, BANKES, p. 235, t. c. Isle of Wight, *V. antiopa*, TARRANT, p. 323, Entomologist 1904. Freshwater, DOUGLAS, pp. 296-299, Entomologist 1904. Hampshire, *D. livornica*, DRUITT, p. 288, Entomologist 1904. Bournemouth, *D. livornica*, CRALLAN, p. 168, Entomologist 1904. Bournemouth, *D. livornica*, p. 243, Entomologist 1904. Eastbourne, *Charocampa nerii*, CHARTRES, p. 242, Entomologist 1904. Mid-Kent, notes on the *Lepidoptera* of South-east, Naturalist 1904, pp. 47-54. Kent, *D. livornica*, ABBOTT, p. 265, Entomologist 1904. *V. antiopa*, FROHAWK, t. c. p. 268. Kent, PALMER, Rochester Natural. iii, pp. 223 etc. Kent, SMALL, Rep. E. Kent. Soc. ii, p. 39. Surrey, *Orthotania branderiana*, SOUTH, p. 242, Entomologist 1904. Surrey, *Trichoptilus paludum*, SOUTH, p. 287, Entomologist 1904; *Orobena straminealis*, id. l. c. Limpsfield, ADKIN, pp. 14-17, P. South London Soc. 1903. Hertfordshire 1902, BARRAUD, Tr. Hertfordsh. Soc. xii, pp. 23-35. Hertfordshire, COTTAM, A. Notes on the habits of some of our *Lepidopterous* insects: ii, the larger moths: Tr. Hertfordsh. Soc. xii, pp. 53-61. Hertfordshire, GIBBS, pp. 135, 136, Ent. Mag. xl.

Oxford, *Lep.* of the district, Rep. Ashmolean Soc. 1901, pp. 16-31. Calne, Wilts, EDDRUP, pp. 71-73, Rep. Marlbor. Soc. lii. Somersetshire, *P. argiades*, B. D. R., p. 47, Entomologist 1904. Mary Knowl Valley, *Rhopalocera*, WINTERBOURN, p. 167, Tr. Woolhope Club 1900-1902. Worcestershire, *P. moneta*, McNAUGHT, p. 243, Entomologist 1904. Leicestershire, BIRKENHEAD, pp. 84, 85, Tr. Leicester Soc. 1904. Rugby, KEYNES, Rep. Rugby Soc. 1903, pp. 39-42. Wendover, TURNER, pp. 18, 19, P. South London Soc. 1903. Felixstowe, *Botys nubilalis*, BARRETT, p. 89, Ent. Mag. xl. Suffolk, *Nola centonalis*, WALLER, p. 236, t. c. Lowestoft, *C. fraxini*, BOYD, p. 256, t. c. Suffolk, 1903, BLOOMFIELD, pp. 79-81, t. c. King's Lynn, ATMORE, pp. 103, 104, Ent. Rec. xvi. North Staffordshire, BOSTOCK, *Heterogenea limacodes*; Rep. North Staffordsh. Club xxxviii, p. 106. Chester, *Laphygma*, ARLE, p. 62, Ent. Mag. xl. Yorkshire, PORRITT (1907). Halifax, novelties; HALLIDAY, Halifax Natural. viii, p. 86. Skipwith, ASH, *Coccyx cosmophorana* etc., Ent. Rec. xvi, p. 50. Durham, *Pyrameis cardui*, HARRISON, p. 41, Ent. Rec. xvi. Durham, *Vanessa cardui*, 1903; Tr. Weardale Club i, pp. 226-228. Cumberland, *Acidalia ornata*, WOOTTON, p. 15, Ent. Mag. xl. Mid-Northumberland, ARKLE, pp. 74-77, Entomologist 1904. Monmouth, *D. livornica* and *P. moneta*, THORNEWILL, p. 214, Entomologist 1904. S. Wales, *D. livornica* etc., RANDELL, p. 265, Entomologist 1904. Londonderry, *Geometra papilionaria*, CAMPBELL, p. 257, Irish Natural. 1904. Wexford, JOHNSON, Irish Natural. 1904, p. 75. Kildare, *S. convolvuli*, LANGDALE, Zoologist 1904, p. 388.

Diptera. Jersey, BLOOMFIELD, Ent. Mag. xl, p. 88. Padstow, *Lucina fasciata*, LAMB, p. 282, t. c. Beaulieu, *Mochlonyx*, COLLIN, p. xxxix, P. ent. Soc. London 1904. New Forest, ADAMS, Ent. Mag. xl, pp. 109-111. Oxford, HUGHES, p. 51, Rep. Ashmolean Soc. 1903, p. 51. Jedburgh, *Chrysonotus bipunctatus*, EVANS, Ann. Scott. Nat. Hist. 1904, p. 129. Scotland, novelties, GRIMSHAW (633). Edinburgh, list, with *Nycteribia lutreillii*, EVANS, Ann. Scott. Nat. Hist. 1904, pp. 128, 129. Forth district, GRIMSHAW (631). Forth, *Polietes hirticrus*, WATERSTON, p. 193, Ann. Scott. Nat. Hist. 1904. Forth, *Myopa testacea*, EVANS, p. 194, Ann. Scott. Nat. Hist. 1904. Midlothian, *Trichopticus aculeipes*, GRIMSHAW, p. 195, Ann. Scott. Nat. Hist. 1904. Nairn, *Laphria flava*, YERBURY, p. 212, Ent. Mag. xl. Forres, *Loxocera fulviventris*, JENKINSON, p. 17, Ent. Mag. xl. Shetlands and Orkneys, *Syrphidae*, BLOOMFIELD, p. 88, Ent. Mag. xl.

Aphaniptera. Edinburgh, list, EVANS, pp. 193, 194, Ann. Scott. Nat. Hist. 1904.

Hemiptera. Herm, *Leptopus*, LUFF, p. 280, Ent. Mag. xl. Somersetshire, *Orthostira nigrina*, SAUNDERS, p. 38, t. c. Norfolk, additions, EDWARDS, pp. 746, 747, Tr. Norfolk Soc. vii. Norwich, *Corizus hyalinus*, THOULESS, p. 16, Ent. Mag. xl. Derby, *Elasmotethus ferrugatus*, SAUNDERS, p. 38, t. c.

Coccidæ. Guernsey, the *Coccidæ* of, LUFF, Rep. Guernsey Soc. 1903, pp. 272-277. Swanage, *Ripersia*, TOMLIN, p. 282, Ent. Mag. xl. Some Hertfordshire scale-insects, HOPKINSON, pp. 49-52, Tr. Hertfordsh. Soc. xii.

Neuroptera. Lake district, MORTON, pp. 52-54, Ent. Mag. xl. Wigtownshire, *Neuronia*, MORTON, p. 281, t. c. Arran, *Trichoptera*, *Neuroptera*, *Perlidae*, *Psocidae*, WATERSTON, p. 194, Ann. Scott. Nat. Hist. 1904.

Odonata. New Forest and Surrey, DODSON, pp. 102-105, Entomologist 1904. Stroud, *Aeschna grandis*, WATKINS, p. 15, Ent. Mag. xl. Epping Forest, F. & H. CAMPION, Entomologist 1904, p. 19. Epping Forest, 1904, F. & H. CAMPION, t. c. p. 300. Norfolk Broads, PORRITT, p. 251,

Entomologist 1904. Cumberland, *Orthetrum cærulescens*, DAY, p. 111, Ent. Mag. xl. Ambleside, *Cordulia*, ARMITT, p. 250, Naturalist 1904.

Orthoptera. Christchurch, *Labidura*, CHITTY, p. liv, P. ent. Soc. London 1904. Barnsley, *Blattidæ*, BAYFORD, pp. 90, 91, Naturalist 1904.

(d.) *North Europe and Siberia* [see also (a.) and (b.).]

Insecta. ANNANDALE (35), Faroe islds. *Aptera*, *Coccidæ*, *Forficulidæ*, *Lepidoptera*, short lists. SAHLBERG (1204), Finland, novelties, 5 spp. *Col.* and *Euceros crassicornis*. Cf. also summary of additions to the Finnish fauna, pp. 244-252, Medd. Soc. Faun. Fenn. 1902/03.

Coleoptera. POPPIUS (1093), E. Siberia, *Tachinus* 3 n. spp. POPPIUS (1095), E. Siberia, *Lathridiidae*, 3 spp. n. POPPIUS (1096), Lapland, *Omalium*, 2 spp. n., E. Siberia, *Boreaphilus* and *Coryphium* sp. n. SEMENOW (1278), Siberia, *Lathridius*, *Dapsa*, *Lycoperdina* sp. n. SEMENOW (1279), N. Russia, short list, *Platysma* sp. n. Finland novelties, J. SAHLBERG, pp. 39-41, also 142-144, Medd. Soc. Faun. Fenn. 1902/03: id. *Mycetoporus* 2 spp. t. c. pp. 210-282, Finland, 3 novelties, U. SAHLBERG, t. c. pp. 97-99. STRAND, Minarc Meddelelser vedrørende Norges *Coleopterfauna*, Arch. Math. Naturv. Kristian. xxvi, No. 3, 31 pp. Sweden localities MUCHARDT, p. 106, VARENIUS, pp. 88-132, Ent. Tidskr. xxv: MJÖBERG, t. c. p. 133. VARENIUS, *Leptura livida*, novelty, Ent. Tidskr. xxv, p. 300.

Hymenoptera. AURIVILLIUS (59), *Sphegidæ* of Sweden. KOKUJEV (826), Irkutsk, *Ichneumon*, 5 spp. n. MOCSÁRY (951), Amurland, *Clavellaria* sp. n. ROMAN (1186), *Ichneumon.*, *Bracon.*, novelties. ROMAN (1187), Siberia, *Ichneumon*, 2 spp. n. Finland, Ants new or rare, WELLENIUS, p. 124, Medd. Soc. Faun. Fenn. 1902/03.

Lepidoptera. HERZ (679), N. Russia, short list. HERZ (680A), Lena, *Rhopalocera*, *Sesia* sp. n., *Noctuidæ*, 3 spp. n., *Acidalia*, 2 spp. n. REUTER (1158), Finland, *Pterophoridae*, *Tineidæ*, annotated list. REUTER (1160), Finland novelties.

Diptera. WAHLGREN (1463), Scandinavia, *Tipulidæ* sp. n., *Pericoma* sp. n. New for Finland or rare, list, Medd. Soc. Faun. Fenn. 1902/03.

Hemiptera. MJÖBERG, Sweden, 2 spp., p. 134, Ent. Tidskr. xxv. Notes on Strand's list of Norwegian *Hem.* REUTER, pp. 111-114, Ent. Tidskr. xxv.

Coccidæ. REUTER (1159), Finland, novelties sp. n.

Pertidæ. KLAPÁLEK (819), Siberia, *Dictyopteryx* sp. n.

Psocidæ. REUTER (1161), Finland, 1 sp. n.

Collembola. AGREN (18), Lapland, *Collembola*, 4 spp. n. AXELSON (68), Norway, *Collembola* 37 spp. AXELSON (68A), Siberia, *Isotoma* sp. n. SCHÖTT (1234), Sweden, *Collembola*, 7 spp. n.

(e.) *Central and Eastern Europe*, incl. *Denmark* [see also (a.) and (b.) and for *France* (f.), for *Caucasus* (h.).]

Insecta. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg, Verh. Ver. Hamburg naturw. xi, Insekten, pp. 6-19. HÜBER (725), Germany, *Col.* and *Hemipt.*, notes on varieties. The Alpine fauna of the Ardennes, FREDERICQ (540). PAVESI, Lombardy, Esquisse d'une faune Valdôtaine, Atti Mus. Milano xliii, Ins. pp. 227-249. HANDLIRSCH (661), Kama, Permian fossils, n. genn., n. spp.

Coleoptera. JOHANSEN (764), Danish myrmecophilous *Col.* Denmark. *Agathidium polonicum*, novelty, MUCHARDT, p. 340. Denmark. WIELANDT, Ent. Meddel. ii, pp. 334-339; Trekroner, list. EVERTS, Eerste lijst van soorten en vareiteiten nieuw voor de Nederlandsche fauna, sedert

de uitgave der "Coleoptera neerlandica" bekend geworden; Tijdschr. Ent. xlv, pp. 135, 136. EVERTS (471), Netherlands, recent additions. SEVERIN, Ann. Soc. ent. Belgique xlviii, pp. 223, 224, Belgium novelties. ROUSSEAU, Belgium, *Cryptocephalus exiguus*, Ann. Soc. ent. Belgique xlviii, p. 145. Holland, Eene schimmel-fauna, LEESBERG, pp. 152, 153, Ent. Ber. Nederl. i. Maastricht, list, EVERTS, pp. 104-108, Ent. Ber. Nederl. i. WASMANN (1486), Luxemburg, *Atemeles* sp. n. Lower Elbe, HAGEDORN, suppl. to Koltze, Verh. Ver. Hamburg. Unterh. xii, pp. 101, 102. HAGEDORN (647), Centr. Eur., *Cryphalus* sp. n. GERHARDT, Neuheiten der schlesischen Käferfauna aus dem Jahre 1903; Deutsche ent. Zeitschr. 1904, p. 365. GERHARDT, Zeitschr. Ent. Breslau xxix, pp. 71-76, Neue Fundorte seltenerer schlesischer Käfer aus dem Jahre 1903, nebst Bemerkungen. GERHARDT, t. c. pp. 77, 78, Neuheiten der schlesischen Koleopterenfauna aus dem Jahre 1903. GERHARDT (591, 592); Germany, *Isomira* n. sp. REITTER (1151), Silesia, *Neuraphes* n. sp. VORBRINGER, Sammelbericht aus Ostpreussen Deutsche ent. Zeitschr. 1904, pp. 453, 454. VORBRINGER, East Prussia, list, novelties, Deutsche ent. Zeitschr. 1904, pp. 43-45. LOMNICKI, Galicia, novelties, Kosmos polski. xxix, pp. 367-373. FORMANÉK (535), Moravian *Scolytidae*. ROUBAL, J. Für Böhmen neue Käfer, Verh. Ges. Wien liv, pp. 643-645. CSIKI (328), Hungary, *Pholevon* sp. n. CSIKI, Hungary, pp. 4-8, Rov. Lapok xi; supplement to catalogue. CSIKI (332), Hungary, *Anophthalmus* sp. n. CSIKI (330), *Cerambycidae* of Hungary, tables. SEMENOW (1276), Saratov, *Halipus* sp. n. HEYDEN, L. VON, Beiträge zur Coleopteren-Fauna der nordwestlichen Teile Russlands, K.B. Ver. Riga xlv, pp. 18-35. HOLDHAUS (695), Venetian Alps, long list, *Anophthalmus*, *Amara*, *Bythinus* sp. n. GANGLBAUER (581), Rhætian Alps, *Trechus*, *Pselaphidae*, *Leptusa*, *Simplocaria* spp. n. SCHATZMAYR (1223), Carinthia, *Anophthalmus*, *Megarthus* and *Tyrus* sp. n. JAQUET & PONCEY, Roumania, pp. 66-69, Bull. Soc. Bucarest xiii. HURMUZACHI, Roumania, Troisième catalogue des Coléoptères récoltés par les membres de la Société des Naturalistes de Roumanie, Bull. Soc. Bucarest xiii, pp. 52-65. FLECK (510), Roumania, first part of General Catalogue. BORN, P., Alps of Piedmont, *Carabidae*, Soc. ent. xix, pp. 42, 50. BORN, Val Aosta, *Carabus* list, Soc. ent. xix, pp. 113, 114.

Hymenoptera. JACOBS (738), Belgium, *Apidae*, catalogue. ROERMONA, *Tenthredinidae*, list, OUDEMANS, pp. 120, 121, Ent. Ber. Nederl. i. SEVERIN, Ann. Soc. ent. Belgique xlviii, p. 224, Belgium, *Nematus abietinum*. KIEFFER (796), Bitsch n. g. *Chalcidinae*. KRIEGER (845), Saxony, *Trichomma* n. sp. ENDERLEIN (456), Pomerania, *Braunsia* sp. n. BAER, W., Zur *Apiden*fauna der preussischen Oberlausitz, Abh. Ges. Gorlitz xxiv, pp. 107-121. ALFKEN (24), Wallis, *Andrena* n. sp. FOREL (531), Vaud etc., *Formicidae*. VASSILIEV (1433), Charkov, *Encyrtus* sp. n. STROBL (1350), Styria, Catalogue completed, 4 spp. ASHMEAD (43), St Petersburg, *Parasitica* 3 spp. n.

Lepidoptera. SNELLEN (1322), Supplement to the Catalogue of Netherlands *Lepidoptera*. TER HAAR, Groningen, *L. optilete*, p. 97, Ent. Ber. Nederl. i. HIPPERT, Belgium, Ann. Soc. ent. Belgique xlviii, pp. 80-82, and t. c. p. 145. SAUBER (1212), Hamburg, *Microlepidoptera*, Catalogue, *Ornix* sp. n. TESCH, Braunschweig, novelties, Jahresber. Ver. Braunschweig xiii, p. 91. HERRMANN (678), Frankfurt a. O., *Macrolepidoptera*. PETRY (1038), Thuringia, *Nepticula* n. sp. REICHENAU (1140), Nassau, changes in 25 years. Swiss *Rhopalocera*, Moss (966). JONES, Laquintal, Ent. Mag. xl, pp. 1-4. Chamonix etc., TUTT, pp. 34-37, Ent. Rec. xvi. HIMSL (687), Upper Austria, *Geometridae*, Catalogue. ROWLAND-BROWN, Entomologist 1904, pp. 222-226, Butterfly hunting in the South Tyrol, and LOWE, t. c. p. 272. PREISSECKER, Lower Austria, novelties, Verh. Ges. Wien liv, p. 612.

WAGNER, Verh. Ges. Wien liv, p. 1, Pola, *Gnophos tibiaria*. TROST (1395), Styria, *Macrolepidoptera*, list completed. AIGNER, Hungary, Rev. Lapok xi, pp. 191-193, on recent additions. FLECK, Die *Macrolepidopteren* Rumäniens, Nachtrag ii, Bull. Soc. Bucarest xiii, pp. 288-308. HORMUZAKI (796), Bukowina, Supplement to Catalogue. BLOECKER, St. Petersburg, *Pyrrhia exprimens*, Rev. Russe Ent. iv, p. 225. SLEVOGT, Bathen, *Noctuidæ*, Soc. ent. xix, p. 124. HOYNINGEN-HUENE (722), Perm, Catalogue. KUSNEZOW (851), Pleskau, *Macrolep.* suppl. to Cat. KRULIKOVSKY, Ourjoum, Volga, captures, Rev. Russe Ent. iv, pp. 27-31.

Diptera. GUILLAUME (646), Belgium, *Trypetidæ*, catalogue. Roemond, list, DE MEIJERE, pp. 114-116, Ent. Ber. Nederl. i. BECKER (95), Lioland, *Pelotophila* sp. n. SPEISER, Prussia supplement to Czwalińska's Catalogue, Allg. Zeitschr. Ent. ix, pp. 265-268. OLDENBERG (993), Piedmont and Germany, *Saucropus*, 2 spp. n. CZERNY (338), Kremsmünster n. g. *Ocithiphilini*. BEZZI (124), Austria-Hungary, *Empidæ*, 4 spp. n. SPEISER (1328), Hungary, *Ornithesza* n. sp. KERTÉSZ (790), *Culicidæ* of Hungary. FLECK (512), Roumania.

Homoptera. HUEBER (724), Germany, Cat. of *Homoptera* (except *Aphidæ* and *Coccidæ*).

Aphidæ. SCHOUTEDEN, Belgium, n. g., 2 spp. n. [(1345) of last year; reference then omitted].

Neuroptera. Middelaar, Limburg, *Neuroptera* s.l.; VAN DER WEELE, pp. 136-139, Ent. Ber. Nederl. i.

Trichoptera. ULMER (1420), Elbe, *Trichoptera*. ULMER, Zur *Trichopterenfauna* von Thüringen, Allg. Zeitschr. Ent. ix, pp. 182-185. THIENEMANN (1383), Tyrol, 49 spp.

Orthoptera. BAER, W., Zur *Orthopterenfauna* der preussischen Oberlausitz, Abh. Ges. Götting xxiv, pp. 123-127. ADELUNG (11), Charkov, *Ectobia* sp. n.

Collembola. ABSOLON (6), Moravian caverns, 2 n. spp.

(f.) *France* [see also (a.), (b.) and (g.)].

Coleoptera. The Fauna as a whole, ABEILLE (2), Ariège, *Anophthalmus* n. sp. ABEILLE (3), var., n. g. *Dytiscidæ*. ABEILLE (4), Basses Pyrénées, *Bathyscia*, 2 spp. n. ABEILLE (5), *Metallites*, *Pachybrachis* and *Coroebus* sp. n. BEDEL (97), *Degorsia* introduced. CHABAUT (271), Nîmes, *Bathyscia* n. sp. CHABAUT (268), Ariège, *Anophthalmus* n. sp. CHABAUT (269), Alpes maritimes, *Rhipidius* sp. n. DESBROCHERS (366), France and Corsica, *Lebiides*. DEVILLE (375), novelties and corrections. DODERO (396), Montpellier, *Mirus* sp. n. MAYET (925), Nîmes, *Aphodius* sp. n. MAYET (926), Gard, *Diaprysius* sp. n. PEYERIMHOFF (1041), Ardèche, *Diaprysius* sp. n. PEYERIMHOFF (1042), Basses-Alpes, *Anophthalmus*, 2 spp. n., *Bythinus* n. sp. PIC (1060), *Ernobius* sp. n. PUEL (1109), Gard, *Anisodactylus* sp. n. REITER (1146), Alpes maritimes, *Alexia* n. sp. REITER (1151), Plantey, *Loricaster* sp. n. ABEILLE, Miscell. ent. xii, p. 100, East Pyrenees, *Ptenidium* n. sp.

Coleoptera. Local lists. North France, COLIN, pp. 112-114, Bull. Soc. Nord France xvi.

HOULBERT & BÉTIS (721), W. France, *Cleridæ*. DEVILLE, Haute Marne, *Dytiscidæ* *Hydrophilidæ*, Bull. Soc. ent. France 1904, pp. 160-162. DEVILLE, Haute-Marne, Echange xx, pp. 47 etc. BEDEL, Féré-Ais (Seine-et-Oise), list, Bull. Soc. ent. France 1904, pp. 210-212. ESTIOT, Draveil, *Tetropium fuscum*, *Anoxia* etc., Bull. Soc. ent. France 1904, p. 197. COULON, French Col. in Mus. d'Elbeuf, Bull. Soc. Elbeuf xxii, suppl. CARRET, Souvenirs entomologiques, Mont-Cenis Haute-Maurienne,

Echange xx, pp. 45 etc. Touraine. MÉQUIGNON, *Coléoptères de Touraine: Contributions à la faune du département d'Indre-et-Loire*, Abeille xxx, pp. 229-234. DESBROCHERS, Tours, flood-refuge, Frelon xii, pp. 109-118. FAUCONNET & VITURAT (480), Saône-et-Loire, *Staphylinidae, Pselaphidae, Scydmenidae*. Saône-et-Loire, PIC, Bull. Soc. Autun xv, pp. 251-254; also MARCHAL, t. c. pp. 263-265, PIC, op. cit. xvi, pp. 187-192. PIC, *Coléoptères recueillis en Saône-et-Loire sur deux vieux châtaigniers*, Bull. Soc. Autun xvi, pp. 165-172. Chartreuse, *Aphodius liguricus*, AGNUS, p. 31, Feuille Natural. xxxv. Bordeaux, LAMBERTIE, Pr.-verb. Soc. Linn. Bordeaux, pp. cxix-cxxii. PÉREZ, Bordeaux, Pr.-verb. Soc. Linn. Bordeaux lix, p. xlix. GAVOY, Catalogue Col. de l'Aude, 5ième part. *Curculionidae*, Bull. Soc. Aude xiii, pp. 223-272; 6ième part. *Cerambycidae—Coccinellidae*, op. cit. xv, pp. 167-207. CHABAUT, S. France, on *Genista*, Bull. Soc. Nîmes xxxi, pp. 92-99. XAMBEU, Pyrénées orientales, Catalogue, continuation, pp. 19-66, suppl. to Echange 1904.

Hymenoptera. GIARD (599), Argenteuil, *Dacnusa* sp. n. GADEAU DE KERVILLE (578), Normandy. KIEFFER (793), S. France, *Evania* sp. n. ZAVATTARI (1547), French Pyrenees, general list. Supplément au catalogue des Mellifères du Sud-ouest, PEREZ, Act. Soc. Bordeaux, pp. 5-7. DUCHASSEINT, Auvergne, *Parnopes carnea*, Feuille Natural. xxxiv, p. 267.

Lepidoptera. ANDRÉ, Saône-et-Loire, *Rhopalocera* (31). CHRÉTIEN (276), Basses Alpes, *Anacamptis, Coleophora* and *Nepticula* sp. n. PETRY (1040), Pyrenees, *Gelechiidae*, 2 spp. n. VIARD, *Microlepidoptera*, novelties, Bull. Soc. ent. France 1904, p. 38. North France, *Rhopalocera*, GURNEY, pp. 324, 325, Entomologist 1904. MEADE-WALDO, Normandy, Entomologist, pp. 301-303. Touraine, WALDO, Entomologist 1904, pp. 69-71. DEWITZ, Villefranche, Rhone, by light, Allg. Zeitschr. Ent. ix, pp. 382-386, 401-408. BALESTRE, Alpes maritimes, *Plusia*, 6 spp. SIEPI, Feuille Natural. xxxiv, p. 247, Sainte Baume, *Parnassius mnemosyne*. SIEPI, t. c. p. 248, Marseille, short list.

Diptera. GIARD (598), Garden of the Luxembourg, Paris, rarities. GIARD (599), Argenteuil, *Agromyza simplex*. PANDELLÉ (1010), *Muscidae*, Catalogue. VILLENEUVE (1459), Catalogue, continuation, *Ploas* sp. n., *Dysmachus* sp. n. PORTEVIN (1101), Normandy, *Syrphidae*, list. VILLENEUVE, 3 novelties, Bull. Soc. ent. France 1904, p. 235. POUJADE, Digne, id. Fontainebleau, *Echinomyia popelii*, novelty, Bull. Soc. ent. France 1904, p. 22. VILLENEUVE, *Anthomyiidae*, 24 novelties, pp. 190, 191, Bull. Soc. ent. France 1904. LESNE, Paris, *Penthetria holosericea*, Bull. Soc. ent. France 1904, p. 153.

Aphaniptera. OLIVIER (995), L'Allier.

Hemiptera. GUÉRIN & PÉNEAU (645), West France, descriptive work. OLIVIER (994), L'Allier, *Homoptera*, list with remarks. PÉNEAU (1015), *Hebrus* of France. PÉNEAU (1015), Nantes, novelties. PÉNEAU, Nantes, novelties, Bull. Soc. Ouest France (2) iv, pp. xii, xiii. FLEUTIAUX, Seine, *Orthotylus scotti*, p. 197, Bull. Soc. ent. France 1904. LAMBERTIE, Premier supplément à la contribution à la faune des *Hémiptères* (*Hétéroptères, Cicadines* et *Psyllides* du Sud-Ouest de la France, Act. Soc. Bordeaux lix, pp. 21-30; also cf. Pr. verb. lix, pp. xlvii, xlviii.

Orthoptera. Coëvrons, Mayenne, HOULBERT, C.R. Ass. Franc. xxxii, 2, pp. 750-753. Meuse, *Mantis*, VUILLEMIN, pp. 27-29, Feuille Natural. xxxv. SIEPI, Saint-Baume, *Saga serrata*, Feuille Natural. xxxiv, p. 248.

(g.) *Southern Europe and Mediterranean Basin* [see also (a.), (b.) and (f.) and for Caucasus and Transcaucasus (h.)].

Insecta. CHAMPION (258), Moncayo, *Col.* and *Hemipt.* FUENTE (573), Ciudad Real, *Coleoptera*, *Orthopt.*, *Hemipt.*, novelties. NAVÁS (975), Spain, *Coleoptera*, *Lep.*, *Orthopt.*, *Neuropt.* sp.? NAVÁS (975), Sierra de Guara, *Ephippiger* sp. n., *Acrid.* 2 spp. n. CORTI (322), Galls of Italy. TROTTER & CECONI (1399), Italian galls, arranged according to plants. COBELLI, Rovereto *Hym. Homopt.* 4 spp. *Allg. Zeitschr.* Ent. ix, pp. 11, 12. WERNER (1510), Bosnia and Herzegovina, account of journey. Majorca, MUSCHAMP, pp. 221, 222, *Ent. Rec.* xvi. Cephalonia, SANGIORGI, *Atti Soc. Modena* xxxvi, pp. 72-93.

Coleoptera. NORMAND (983), Albères, subterranean, list. DESBROCHERS (367), Spain, Portugal, Bosnia, *Thylacites*, 3 spp. n. PIC (1076), Spain and Balearic islds., *Anthicus*, Algeria, *Tychius* sp. n. REITTER (1156), Spain, *Athous*, 5 spp. n. UHAGON (1415), Spain, *Zabrus*, monograph, 2 spp. n. FERRER Y VERT, Barcelona, short lists, *Butll. Inst. Catalan.* i, pp. 14, 15, 78-80 & 105-111. FONT, Coves, short list, *Butll. Inst. Catalan.* i, pp. 116-119. FUENTE, Moncayo, *Bol. Soc. Aragon* ii, pp. 232, 233. FRANÇOIS (539), Carthage, *Thorectes* sp. n. DODERO (397), Sardinia, *Bythinus* n. sp. Capri, N. Italy, *Bathyscia*, 3 spp. n. REITTER (1145), Lucano, n. g. *Endomychidae*. VITALE, Messina, *Boll. Natural.* xxiv, pp. 26-28, 37-40, 54-56, 74-76. DODERO, Italy, *Bathyscia*, list of, *Nat. Sicil.* xvii, pp. 121-123. CARRET (246), N. Italy, *Athous* sp. n. MÜLLER (970), Dalmatia, *Apholeuonius*, 2 spp. n. MÜLLER (972), Dalmatia, *Bythinus* sp. n., *Alphitophagus* sp. n. GANGLBAUER (583), Meleda isld., Dalmatia, list with 1 sp. n. MÜLLER, Austrian coast, *Munchen. Kol. Zeitschr.* ii, pp. 314-320. ZOUFAL (1549), Herzegovina, *Silphidae*, 1 sp. n. REITTER (1142), Herzegovina, *Bathyscia* sp. n. REITTER (1141), Herzegovina, *Dicerca* sp. n. REITTER (1151), Herzegovina, *Elater* sp. n. MÜLLER (971), Herzegovina, *Antroherpon* sp. n., *Bathyscia* sp. n. PENECKE (1016), Herzegovina, *Quedius* sp. n. BREIT (174), Herzegovina, *Anophthalmus* sp. n., Piedmont, *Lathrobium* sp. n. PIC, Greece and Corfu, *Malachius*, *Bull. Soc. ent. France* 1904, p. 42. CSIKI (329), Servia, *Otiorrhynchus* sp. n., *Phytonomus* sp. n. CSIKI (331), Servia, *Platynus* sp. n. RAGUSA (1115), Sicily. REITTER (1147), Sicily, *Pselaphus* n. sp. VITALE, *Nat. Sicil.* xvii, pp. 77 etc.; Sicily, *Curculionidae*, novelties. VITALE, *Nat. Sicil.* xvii, pp. 26-41; Sicily, *Cossolini*. RAGUSA, xvii, pp. 49-54, 84-92; *Coleotteri* nuovi o poco conosciuti della Sicilia. RAGUSA, *Nat. Sicil.* xvii, pp. 21-24; Sicily, *Curculionidae*. FIORI (509), Sicily, *Malthodes*, 2 spp. n. SCHULTZE (1252), Corsica and Algeria, *Baris*, 2 spp. n. FAUVEL (484), Algeria, *Geotiba* sp. n. DEVILLE (374), S. France and Algeria, *Dyschirius* sp. n. DU BUYSSON (216), Morocco, *Agriotes* sp. n. NORMAND (982), Tunis, *Pselaphidae*, 5 spp. n. PIC (1075), Asia Minor, *Dermest.*, *Ceton.*, *Malacod.*, *Cistelid.*, *Anthacid.* sp. n. PIC (1073), Taurus, *Clytus* sp. n. PIC (1069), Egypt and Anatolia, *Laria* and *Urodon* spp. n. PIC (1061), S. Europe, Asia Minor, *Attagenus*, *Malacoderm.*, *Anthicus*, *Curcul.*, spp. n. PIC (1059), Syria, *Cardiophorus* sp. n. PIC (1058), Tokat, *Prionychus* n. sp. DEMAISON (360), Asia Minor, *Oochrotus* sp. n. K. DANIEL (347), Crete and Asia Minor, *Leptura*, 2 spp. n.

Hymenoptera. ANTIGA and others (36), Catalonia, *Aculeata* and *Chryside*. BERTHOUMIEU (112), Spain, *Ichneumonidae*, 4 spp. n. BERTHOUMIEU (113), Escorial, *Catadelphus* sp. n. DUSMET (417), Alicante, *Alastor* n. sp. GARCIA (585), Spain, Syria, Cairo, *Chrysid.* 4 spp. n. GARCIA (586), *Hedychridium* sp. n. GARCIA (587), Spain, *Bembex*,

3 spp. n. GARCIA (588), Madrid, *Nysson* n. sp. SAUNDERS & POULTON (1214), Majorca and Spain, *Aculeata*, 5 spp. n. MANTERO (904), Island of Giglio, n. g. *Bracon.*, *Pompilus* n. sp. MANTERO (902), North Italy, *Braconidae*, 82 spp. STEGAGNO (1341), Guests in galls, Italy. BUYSSON (217), Zante, *Hedychridium* sp. n., Turkey, *Chrysis* sp. n. KIEFFER (794), S. Eur. and Tunis, *Proctotryp.*, 23 spp. n. FOREL (532), Kairouan, list, *Oxyopomyrmex* sp. n., *Biskra Stenamma* n. sp. KIEFFER (793), *Gasteruption* sp. n. FOREL (532), Jerusalem, short list.

Lepidoptera. CHAPMAN (259), Canales, *Heterogynis* sp. n. CHRÉTIEN (275), Segovia *Tephroclystia* sp. n. TUTT (1414), Vigo, *Cænonympha* n. sp. WALSINGHAM (1469), Spain and Morocco, *Microlep.* spp. n. N. Spain, *Geometridæ*, PROUT, pp. 284-289, Ent. Rec. xvi. Sierra de la Demanda and Moncayo, CHAPMAN, pp. 85 etc., etc., Ent. Rec. xvi. MALUQUER, Ubach, Tarrasa, short list, Butl. Inst. Catalan i, pp. 56-59. BROWNE, Mediterranean, Entomologist 1904, pp. 186-188, 204-207. FLETCHER (517), Malta, list. VERITY (1436), Pistoja, list. VERITY (1437), Tuscany, *Rhop.* varr. VERITY, Italy, *Ochrostigma melagona*, novelty, Bull. Soc. ent. Ital. xxxvi, p. 11. PERLINI, Cat. of Italian *Lep.* continued, Riv. ital. Sci. Nat. xxiv, pp. 1 etc., etc. CANNAVIELLO, S. Italy, Riv. ital. Sci. Nat. xxiv, pp. 16-19 etc. FLECK (511), Dobrudscha, account of travelling. REBEL (1122), Bosnia, Herzegowina, Catalogue and comparative distribution, *Tineidae*, 6 spp. n. ZICKERT (1548), S. Italy, *Zygæna*. RAGUSA, Sicily, novelties, Nat. Sicil. xvii, pp. 18-20. PETRY (1039), Corsica, *Scoparia*, *Conchylis*, *Lita*, *Stagmatophora*, *Lithocolletis*, sp. n. WALSINGHAM (1470), Algeria, *Tineidae* n. spp., n. genn. CHRÉTIEN, Algeria, *Pyralide* and *Microlep.*, Naturaliste 1904, pp. 45, 46. FONTAINE (538), Asia Minor, list. BARTEL (90), Syria, *Eriogaster* sp. n.

Diptera. CORTI (321), Portugal, list of 86 spp. TROTTER (1396, 1397), Galls, *Perrisia* n. sp. KIEFFER (792), Vallombrosa, *Cecidomyiidae*, 2 spp. n. BEZZI (124), Bosnia, *Clinocera* n. sp. EATON (445), Algeria, *Psychodidae* sp. n. MARCHAL (911), Cyprus, *Cecidom.* sp. n. GILES (604), Asia Minor, *Culex fuscus*.

Aphaniptera. KOHAUT (824), Bosnia, *Typhlopsylla* n. sp. KOHAUT (825), Bosnia, *Typhlopsylla* n. sp. ROTHCHILD, N. (1192), Egypt, 4 spp. n.

Hemiptera Heteroptera. REUTER (1166), Soria, *Globiceps* n. sp. ARDID, Zaragoza, Bol. Soc. Aragon. ii, pp. 270-273. Cyprus, KIRKALDY, *Rincoti* raccolti dal Dott. G. Ceconi nell' isola di Cipro, Bull. Soc. ent. Ital. xxxvi, pp. 94-98. SPEISER (1332), Egypt, *Polycetes* sp. n.

Homoptera. COBELLI, R., Contribuzioni alla *Cicadologia* del Trentino. Verh. Ges. Wien liv, pp. 556-558. HORVÁTH (716), Spain, Morocco, Asia Minor, *Caliscelis*, 3 spp. n.

Coccidae. BERLESE (106), S. Italy, *Mytilaspis* n. sp.

Neuroptera. VENTALLÓ, Tarrasa, Butl. Inst. Catalana i, pp. 113-115. NAVÁS (974), *Planipennia*, *Perlidae*, *Ephemeridae*, spp. n. NAVÁS (976), *Myrmeleonides*, 1 sp. n. KIRBY (806), Amanus Mts., *Chasmatoptera* sp. n. *Perlidae*. MORTON, Algeria, *Strobliella minuta*, Ent. Mag. xl, p. 39. *Termitidae*. SJÖSTEDT (1301), Algeria and Tangier, *Termitidae*, 2 spp. n. *Thysanura*. SILVESTRI (1300), Umbria, *Machilidae*, 2 spp. n. KUSNEZOV, Crimea, *Japyx solifugus*, Rev. Russe Ent. iv, p. 227.

Orthoptera. MEI (932), Alpes maritimes, *Locust.*, *Acrid.* SHUGUROV, S. Russia, *Acrida turrita*, distribution, p. 255, Rev. Russe Ent. iv. WERNER (1511), Asia Minor, *Saga*, list.

(h.) *Caucasus* and *West and Central Asia*, including *Arabia* [see also (a.) and (b.)]: for *Tibet* see 6, for *Mediterranean Asia* see (g.).

Insecta. SAHLBERG (1203), expedition with lists *Col.* and *Hemipt.*

Coleoptera. BAECKMANN (74), *Turkestan*, *Anoplites* n. sp. CHOBAUT (270), *Arabia*, *Thorictus* n. sp., *Mordellistena* n. sp. ESCHERICH (469), *Turkestan*, *Tibet*, *Algeria*, *Meloidæ*, 9 spp. n. JAKOVLEFF (753), *Tiflis*, *Sphenoptera* n. sp. LESNE (876), *Lob-Nor*, *Xylogenes* n. sp. LUZE (895), *Russian Centr. Asia*, *Staphylinidæ*, 32 spp. n. LUZE (896), *Central Asia*, *Staphylinidæ*, 2 spp. n. PETRI (1037), *Turkestan*, *Lixus* n. sp. PIC (1079), *Araxes Vall*, *Mongolia*, *Buchara* etc., *Curculionidæ* spp. n. PORTEVIN (1100), *Mongolia*, *Liodes*, sp. n. REITTER (1150), *Transcaucasus*, *Eusomus* sp. n. REITTER (1153), *Caucasus*, *Mycetophagus* n. sp. SCHMIDT (1230), *East Buchara*, *Thorictus* sp. n. SEMENOV (1275), *Transcaucasus*, *Stomis*, 2 spp. n. SEMENOV (1281), *Lake Balkash*, *Nyctiphantus* n. sp. TSCHITSCHERIN (1401), *Caucasus*, *Trechus* sp. n. TSCHITSCHERIN (1402), *N. Persia*, *Stomis* n. sp. WATERHOUSE (1491), *Acmæodera* n. sp., *Steraspis* n. sp. WEISE (1505), *Mesopotamia*, *Pseudocolaspis* sp. n.

Hymenoptera. FOREL (527), *Buchara*, list, *Gobi*, *Formica* sp. n.

FOREL (532), *Caucasus*, ants, list. KONOW (833), *Caucasus*, *Entodecta* sp. n. RUZSKY (1202), *Caucasus* and *Crimea*, *Leptothorax* sp. n.

Lepidoptera. PÜNGELER (1111), *Centr. Asia*, 10 spp. n. SAUBER (1213), *Anklam*, *Crampus*, *Phlyctenodes* sp. n. SCHAPOSCHNIKOV (1221), *Caucasus*, *Macrolep.* Catalogue, 575 spp.

Diptera. SPEISEN (1331), *Merv*, *Lychnia exornata*.

Hemiptera. JAKOWLEW (757), *Koukou-noor*, *Palomena* n. sp. HORVATH (717), *Turkestan*, lists of *Heteroptera* and *Homoptera* spp. n. REUTER (1164), *Persia*, *Capsidæ*, 7 spp. n. REUTER (1166A), *Aden*, *Capsidæ*, 2 n. spp. REUTER (1167), *Turkestan*, *Mongolia*, *E. Siberia*, *Capsidæ*, 12 n. spp.

Termitidæ. JACOBSON (741), *Turkestan*, *Hodotermes*, 2 spp. n.

4. AFRICA (TROPICAL & SOUTH). For *North Africa* see 3 (g.): for *Comoro* and *Aldabra Ids.* see 5. *Socotra*, see 3 (h.).

Insecta. TROTTER (1398), *Galls of Erythrea*. WASMANN and others (1485), *White Nile*, *Termitophilous Ins.*, 10 spp. n.

Coleoptera. AURIVILLIUS (57), *Cerambycidæ*, 13 spp. n., *genn. n.* BERNHAUER (107), *W. Africa*, *Dinusa æthiopica* and *Platyola simplex* n. sp. BERNHAUER (108), *W. Africa*, *Staphylinus*, *Leistotrophus* sp. n. BERNHAUER (109), *Eleusis*, *Lispinus*, *Holosus*, *Omalium*, *Osorius* spp. n. BOILEAU (143), *Lucanidæ*, 3 spp. BOURGEOIS (161), *S. Africa*, *Chlamydolycus* n. sp. CAMERON (221), *Perim*, *Di glossa*, 2 spp. n. DISTANT (382), *S. Africa*, *Cerambycidæ*, monograph. FAUST (481), *Cleonides* many spp. n., n. g. FAUVEL (485), *Staphylinidæ* n. spp. FAUVEL (487), *Upper Egypt*, *Platyprosopus* sp. n. FAUVEL (489), *Staphylinidæ*, 14 spp. n. FELSCHÉ & D'ORBIGNY (494), *Cameroons*, *Copridæ*, 3 spp. n. GEBIEN (589), *Cameroon*, *Tenebrionidæ*, 19 spp. n., n. g. GEBIEN (590), *Pycnocerini*, 6 spp. n. GESTRO (595), *W. Africa*, *Cælenomenodera*, 2 spp. n. GESTRO (596), *Platypria* n. spp. GROUVELLE (639), *Nitid.*, *Colyd.*, *Cucuj.*, *Mycetoph.*, 8 spp. n. HAGEDORN (649), *Caffraria*, *Scolytoplatus* n. sp. HARTMANN (663), *E. Africa*, *Curculionidæ*, 46 spp. n., *genn. n.* HAUSER (664), *Cetoniidæ*, 5 spp. n., *genn. n.* HEATH (668), *E. Africa*, *Cælorrhina* and *Eudicella*, n. sp.

- HELLER (674), Cameroons, *Curculionidae*, 14 spp. n. HELLER (675), E. Africa, *Zygopides* sp. n. HORN (709), E. Africa, *Cicindelidae*, 4 spp. n. HORN (711), Cameroons, *Cicindelidae*, 2 spp. n. HORN (712), E. Africa, *Megacephala* sp. n. JACOBY (745), *Chrysomelidae*, 63 spp. n. JORDAN (768), *Anthribidae*, 8 spp. n. JORDAN (770), Brit. E. Africa, *Cerambycidae*, 4 spp. n. KERREMANS (786), Trop. Africa, *Julodines*, descriptions. KOLBE (830), *Copride*, *Dynastid.*, *Ceton.*, *Psammodes* spp. n. KOLBE (831), Cameroons, *Valgidae* n. g. LEWIS (880), *Histeridae*, 4 spp. n. MANTERO (903), Somaliland and Scioa, *Rhogas*, 3 spp. n. MARSHALL (915), *Hipporrhinus* monograph, 21 spp. n. MÖLLENKAMP (954), W. Africa, *Metopodontus* sp. n. MOSER (964), E. Africa and Sao Thomé, *Cetoniidae*, 11 spp. n. SHARP (969), Natal, *Cassida* sp. n. D'ORBIGNY (996), *Onthophagides*, 24 spp. n. D'ORBIGNY (997), W. Africa, *Onthophagides*, 12 spp. n. D'ORBIGNY (998), *Onthophagus*, 14 spp. n. PÉRINGUEY (1027), S. Africa, *Melolonthini* of, n. genn., n. spp. PÉRINGUEY (1028), S. Africa, about 200 spp. n., *Cicindelidae*, *Carabidae*, *Paussidae*, *Staphylinidae*, *Coprides*, *Ptinidae*, *Tenebrionidae*, *Cantharidae*, *Lagride*. PÉRINGUEY (1029), Transvaal, *Dromica*, 2 spp. n., *Anomalipus*, 4 spp. n. PIC (1053), Abyssinia, Niger, *Anthicidae*, 2 spp. n. PIC (1055), Natal, *Malacodermidae* n. sp. PIC (1062), *Malacod.*, *Anobiid.*, *Anthicid.* spp. n. PIC (1064), Caffraria, *Malegia* sp. n. PIC (1066), Natal, *Malacodermid.*, 5 spp. n. PIC (1068), Dunbrody, *Malcod.*, *Notoxus*, *Salpingus* n. sp. PIC (1073), S. Africa, *Malacod.*, 5 spp. n., *Rhipiph.* g. n. PIC (1078), Somali, *Anthicus* n. sp. PREISS (1106), German E. Africa, *Cetoniidae*, 6 spp. n. RAFFRAY (1114), *Pselaphidae*, general work. RÉGIMBART (1125), W. Africa, *Dytiscidae*, 2 spp. n., *Dineutes*, sp. n. REITTER (1154), E. Africa, blind Carabid, n. gen. SCHENKLING (1226), Somali land, *Phlocopopus* sp. n. THÉRY (1377), E. Africa, *Buprest.* sp. n. WASMANN (1481), *Paussidae*, 6 spp. n. WASMANN (1484A), Congo, n. genn., n. spp., Myrmecophilous *Staphylinidae*. WATERHOUSE (1491), *Buprestidae*, 17 spp. n. WEISE (1503), *Chrysomelidae*, incl. *Cassidae* and *Hispidae*, 23 spp. n., n. g. WEISE (1504), *Hispidae*, 2 spp. n. WEISE (1507), *Hispidae*, 3 spp. n.
- Hymenoptera*. ANDRÉ (28), W. Africa, *Mutillidae*, 11 spp. n. ASHMEAD (51), Liberia, *Curriea* sp. n. DU BUYSSON (217), *Chrysid.*, 5 spp. n. DU BUYSSON (219), Damara land, *Masaris* sp. n. CAMERON (223), S. Africa, *Vespidae*, *Bracon.*, *Chalc.* sp. n. CAMERON (224), Cape Colony, *Fossoria*, *Proctotryp.*, *Ichneum.*, *Bracon.*, *Evaniid.*, *Cynip.* spp. n. CAMERON (225), *Thynnides*, *Ichneum.*, *Bracon.*, *Cynip.*, 20 spp. n., genn. n. CAMERON (237), S. Africa, *Pimplina* n. g. CAMERON (238), Uitenhage, *Apteropompilus* sp. n. ENDERLEIN (456), *Braunsia*, 9 spp. n. ENDERLEIN (457), Somali, n. g. *Rhopalosomidae*. ENDERLEIN (465), Trop. Africa, *Ichneumonidae*, 3 spp. n. FOREL (529), *Carebara* sp. n. FOREL (531), Natal, *Plagiolipsis* sp. n. FRIESE (544), *Anthidium* and *Serapis*, 8 spp. n. FRIESE (546), *Apidae*, 10 spp. n. FRIESE (549), *Megachile*, 12 spp. n. FRIESE (551), *Celiobys* revision, spp. n. KONOW (838), *Arge*, 3 spp. n., *Distega* n. g. KIEFFER (793), *Proctotrypidae* and *Evaniidae* spp. n. KIEFFER (794), *Proctotrypidae*, 17 spp. n. KIEFFER (795), *Oberthurella* n. sp. MORICE & SZÉPLIGETI (959), White Nile, *Aculeata*, 3 spp. n., *Iphiaulax* sp. n. MAYR (927), White Nile, *Formicidae*, 2 spp. n. MAYR (928), Cape, *Ponera* sp. n. MOCSÁRY (952), S. Africa, *Chrysis*, 9 spp. n. SZÉPLIGETI (1367), *Braconidae* n. spp. TULLGREN (1404), Cameroons, *Diploptera* and *Fossoria*, 19 spp. n. WASMANN (1484A), Congo, *Dorylus* n. sp.
- Lepidoptera*. AURIVILLIUS (60), Cameroons, spp. n., genn. n. AURIVILLIUS (61), *Acræa*, 3 n. spp., *Euryphene* and *Diastogyna*, 1 sp. n. AURIVILLIUS (62), *Bombyces*, 9 spp. n. AURIVILLIUS (63), White

- Nile list. AURIVILLIUS (64), Cameroons, *Papilio* n. sp. BETHUNE-BAKER (117), Sierra Leone, *Rhopalocera*, 15 spp. n. CATOR (250), Sierra Leone, *Lycenidae*, 4 spp. n. HEYN (685), E. Africa, *Ilema* n. sp. JORDAN (771), *Syntomid.*, 3 spp. n., *Phragmatobia* sp. n., *Agaristidae*, 4 spp. n., *Sindris* sp. n. NEAVE (977), Victoria Nyanza, *Rhopalocera*, with table of distribution and n. spp. REBEL (1121), German East Africa, *Saturniidae* sp. n. ROTHSCHILD (1195), *Sphingidae*, 5 spp. n. ROTHSCHILD (1196), Aruwimi For., *Melanitis* n. sp. SHARPE (1286), Equatorial Afr., *Rhopalocera*, 4 spp. n. SHARPE (1287), Africa equat., *Rhopalocera*, 6 spp. n. SHARPE (1288), Equat. Africa, *Lycenidae*, 5 spp. n. SUFFERT (1353), *Rhopalocera*, many spp. n. SUFFERT (1354), German E. Africa, *Rhopalocera*, 6 spp. n. SUFFERT (1355), E. Africa, *Alena* sp. n. SUFFERT (1355A), *Nymphalidae*, 4 spp. n. SWINHOE (1361), *Agaristidae*, *Lymantr.*, *Aganaiidae*, *Limacodidae*, *Margaronia* spp. n. SWINHOE (1362), Trop. Africa, *Geometridae*, list, many spp. n. SWINHOE (1363), W. Africa, *Euproctis* sp. n. THURAU (1386), E. Africa, n. g. *Noctuidae*. TRIMEN (1394), E. Africa, *Zerites*, *Lycæna* sp. n. WARREN (1475), *Drepan.*, *Thyrid.*, *Uran.*, *Geometr.* spp. n.
- Diptera*. BALFOUR (77A), Nile, *Culicidae*. BISCHOF (130), Algoa Bay, *Tachinidae*, 4 spp. n. BRUMPT (191), Centr. Africa, *Glossina* n. sp. GILES (603), Angola, *Culex* n. sp. GRÜNBERG (641), Cameroons, *Rhinoestrus* sp. n. THEOBALD (1373), Gambia, *Culicidae*, 6 spp. n. THEOBALD (1374), Senegal, *Culicidae* n. g. THEOBALD (1376), Egypt etc., *Culicidae*, 8 spp. n.
- Aphaniptera*. ROTHSCHILD (1191), Cape Colony, n. spp.
- Hemiptera*. BREDDIN & BÖRNER (173), Natal with Termites, n. sub-order.
- Hemiptera Heteroptera*. BERGROTH (102), Soudan, *Glypsus* n. sp. BERGROTH (103), Cameroons, *Reduviidae*, 3 spp. n. BERGROTH (104), Cameroons, *Megadæum* sp. n. DISTANT (385), Transvaal, *Macrocoris* n. sp. DISTANT (386), Old Calabar, *Chauliops*, Cape Colony, *Henicocephalus* sp. n. DISTANT (387), S. Africa n. genn., n. spp. DISTANT (390), Transvaal, *Heteroptera*, 14 spp. n., gen. n. DISTANT (391), W., E. and S. Africa, spp. n., *Coreidae*, *Pyrrhocoridae*, *Nepidae*. HORVÁTH (715), *Pentatomidae* spp. n., genn. n., St. Thomé Is. list. KIRKALDY (808), S. Africa, *Metrocoris* n. sp. REUTER (1166A), Abyssinia, *Capsidae*, 9 spp. n. REUTER (1168), Congo, *Capsidae*, 6 spp. n. SCHOUTEDEN (1235), *Pentatomidae*, 13 spp. n. SCHOUTEDEN (1237), Guinea, *Pentatomidae*, 8 spp. n. SCHOUTEDEN (1238), Trop. Africa, *Pentatomidae*, n. genn., n. spp. VARELA (1431), Guinea, *Reduviidae*, 8 spp. n. VARELA (1432), Cameroons, *Reduviidae*, 3 spp. n.
- Homoptera*. DISTANT (384), *Cicadidae*, 4 spp. n. DISTANT (393), *Cicadidae*, 4 spp. n. JACOBI (733), Somali Land, Soudan, *Homoptera*, 10 spp. n. JACOBI (735), E. Africa, *Locris*, sp. n. MELICHAR (937), Shoa, Galla and Somali, *Homoptera*, 30 spp. n. SCHMIDT (1229), Benue, *Flatid.* sp. n.
- Aphidae*. THEOBALD (1375), Sudan, *Aphis* sp. n.
- Trichoptera*. ULMER (1418), W. Africa, 3 spp. n., gen. n. ULMER (1419), Cameroons, 3 spp. n., n. g.
- Neuroptera*. WEELE (1501), W. Africa, *Cymothalis* sp. n.
- Termitidae*. SJÖSTEDT (1301), *Termitidae*, 19 spp. n. DESNEUX (369), Cameroons, *Termes* sp. n.
- Embiidae*. VERHOEFF (1434), Cameroons, *Embia* sp. n.
- Orthoptera*. ADELUNG (12), Abyssinia, *Blattidae*, 8 spp. n. BOLÍVAR (144), *Chrotogoninae*, 9 spp. n. BOLÍVAR (145), *Petasia*, *Maura*, 5 spp. n. BOLÍVAR (146), *Pirgomorphidae*, 5 spp. n. BOLÍVAR (147), *Pæcilocerinae* and *Pyrgomorphinae* spp. n. BORG (155), Cameroons, *Blattidae*, 14 spp. n. BORG (156), Cameroons, *Forficulidae*, 9 spp. n. BURR

(201), *Forficulidæ* spp. n. BURR in DISTANT (382), S. Africa, *Bormansia* n. sp. KIRBY (804), *Mantidæ*, 5 spp. n., gen. n. REHN (1128), Zulu and Gaboon, 2 spp. n. REHN (1130), S. Africa and Mombasa, *Phasmidæ*. REHN (1133), W. Africa, *Acridiidae*, 3 spp. n.

5. MADAGASCAR, including ALDABRA ISLDS., etc.

Coleoptera. BEGUIN-BILLECOCQ (98), Madagascar and Mayotte, *Apion*, 8 spp. n. BERNHAUER (108), *Medon*, *Eulissus*, *Xantholinus*, *Pachycorinus*. BERNHAUER (109), *Eleusis*, *Osorius*. FAIRMAIRE (473), 125 spp. n., genn. n. FAIRMAIRE (477), *Cicindelidæ* 3, *Carabidæ* 2, spp. n. FAUVEL (485), *Staphylinidæ* n. spp. FAUVEL (491), *Staphylinidæ*, 54 spp. n. FLEUTIAUX (518), *Cardiophorus* sp. n. HORN (708), *Pogonostoma* sp. n. PIC (1053), *Anthicidæ*, 3 spp. n. PIC (1054), *Ptinus*, 2 spp. n. PIC (1056), *Salpingus*, *Hylophilus* spp. n. PIC (1092), *Xamerpus*, *Theca* sp. n. PIC (1068), *Bruchus*, *Malegia* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work, n. g. SCHENKLING (1226), *Phlæocopus* sp. n.

Hymenoptera. BUYSSE (217), *Chrysid.*, 2 spp. n. FOREL (527), *Strumigenys* sp. n. KIEFFER (796), Mad., Nossi-Bé, Bourbon, *Chalcidinae* n. genn., n. spp. SZÉPLIGETI (1366), *Camarota* n. sp.

Lepidoptera. SWINHOE (1362), *Geometridæ*, 17 spp. n.

Diptera. DYÉ (443), *Anophelinae*.

Hemiptera. DISTANT (384), *Cicada* sp. n. HORVÁTH (715), *Pentatomidæ*, 10 spp. n. SCHOUTEDEN (1238), *Scotinophara*.

Coccidæ. MARCHAL (909).

Termitidæ. SJÖSTEDT (1301), 5 spp. n.

Orthoptera. BOLÍVAR (146), *Phymateus*, 2 spp. n. BOLÍVAR (147), *Pyrgomorphinae* spp. n. BURR (201), *Forficulidæ* spp. n.

6. TROPICAL and EASTERN ASIA, incl. JAPAN and TIBET.

For outskirts see also 3 (a.), (g.), (h.). Arabia, see 3 (h.).

Insecta. PAVIE (1011A), Fauna of Indo-China.

Coleoptera. ARROW (38), Penang, *Ochodeus* sp. n. AURIVILLIUS (57), Malacca, *Glenea* sp. n. BERNHAUER (108), Shanghai, *Eulissus* sp. n. BERNHAUER (109), Tonkin, *Lispius*, Annam, *Trogophilæus* spp. n. BOILEAU (141), Kashmir, *Dorcus* sp. n. BOILEAU (142), Madura, *Dorcus* sp. n. BOILEAU (143), India and Burma, *Lucanidæ*, 4 spp. n. BOUCOMONT (159), India, China, etc., *Enoplotrupes*, *Geotrupes*, 9 spp. n. BOURGEOIS (160), S. India and Ceylon, *Malacoderm.*, 5 spp. n. CAMERON, Perim Is. See Africa. FAUST (481), India, China, Japan, *Cleonides* spp. n. FAUVEL (482), India and Burma, *Staphylinidæ*, 27 spp. n. FAUVEL (485), India, Ceylon, etc., *Staphylinidæ* n. spp. GROUVELLE (640), Bangkok, *Heterocerus* n. sp. HAGEDORN (648), Darjiling, Japan, *Scolytidæ*, 5 spp. n. HORN (713), Ceylon, *Cicindelidæ* list, 3 spp. n. JACOBY (744), India, *Chrysomelidæ*, 43 spp. n. JACOBY (749), Tonkin, *Sagra* n. sp. JORDAN (767), Tonkin, 12 spp. n., Sikkim, 1 sp. n. JORDAN (772), Burma, *Anthrribidæ*, 2 spp. n. KOKUJEV (827), W. China, *Ichneumonidæ* spp. n. KOLBE (831), Tonkin, Perak, Andamans, *Valgidæ* n. g. LESNE (876), India, *Sinoxylon* n. sp. LEWIS (880), India, *Histeridæ*, 3 spp. n. MAINDRON (899), *Tricondyla* n. sp., *Crepidopterus* n. sp. MÖLLENKAMP (954), Himalaya, *Prosopocelus* sp. n. MOSER (965), Tonkin, Perak, Assam, *Vulgides* n. spp. OBERTHÜR (989), Darjeeling, *Sphingidæ* n. g. PETRI (1035), India, *Lixus*, 2 spp. n. PIC (1058), Japan, *Malachius*, 2 spp. n. PIC (1064), Tien-tsin, *Scaptia* sp. n. PIC (1065), Japan, *Dichelotarsus* sp. n. PIC (1069), Tonkin, *Laria* n. sp.

ORTEVIN (1100), Darjeeling, Mou-pin, *Silphidae*, 5 spp. n. RAFFRAY (1114), incl. India and Japan, *Pselaphidae*, general work. REITTER (1148), Japan, *Cionus* n. sp. REITTER, Afghanistan and Gobi: see Pal. Col. SCHWARZ (1266), Ceylon, *Adelocera* sp. n. SPAETH (1327), Burma, *Cassida* sp. n. THÉRY (1377), Mysore, *Buprest.* sp. n. THÉRY (1378), Ceylon, *Buprestides*, 14 spp. n. WASMANN (1481), India, *Paussidae*, 7 spp. n. WASMANN (1484A), Bombay, *Doryloxenus*, 2 spp. n., *Discoænus* n. g. WATERHOUSE (1491), Tonkin, India, Andamans, *Buprestidae*, 5 spp. n. WEISE (1503), China, *Dioryctus* sp. n. WEISE (1504), Tonkin, India, *Hispidae*, 2 spp. n. WEISE (1507), India, Ceylon, *Hispidae*, 3 spp. n. ZANG (1546), Assam, *Basilianus* sp. n.

Hymenoptera. ASHMEAD (46), Japan, Fossoria, *Bethylidae*, *Proct.*, *Cynip.*, *Chalc.* n. spp.; Formosa, *Eupelmus* n. sp. ASHMEAD (50), Ceylon, n. sp. *Alysiidae.* DU BUYSSON (218), China, Malacca, Andamans etc., *Vespa*, 5 spp. n. CAMERON (222), Singapore, *Piagetia*, *Icaria*, *Bracon.* spp. n. CAMERON (226), Khasia hills, *Cryptinae*, 26 spp. n. CAMERON (227), Khasia hills, *Bembex* sp. n. CAMERON (229), Japan, *Dielis* and *Eumenes* n. sp. CAMERON (230), India, *Apidae*, *Vespidæ*, *Fossor.*, *Ichn.*, *Chalcid.* CAMERON (231), *Odynerus* spp. n., *Epyris* and *Haliphera* sp. n., n. g. *Braconid.* CAMERON (232), N. India, *Apidae* spp. n., *Fossoræ* spp. n., *Ichneumonidae* spp. n. CAMERON (233), N. India, n. spp. *Apidae*, *Mutillides*, *Fossoræ*, *Ichneumonidae.* CAMERON (234), India, n. spp. *Braconidae*, *Fossoria*, *Vespidæ*; Ceylon, *Megachile* n. sp. CAMERON (235), Deesa, *Juartinia* n. sp. CAMERON (236), India, *Athalia* n. sp. CAMERON (241), India, *Ichneumonidae*, 14 spp. n., genn. n. ENDERLEIN (456), Ceylon, *Braunsia* sp. n. FOREL (532), N. India, Kashmir, *Formicidae*, 6 spp. n. FRIESE (548), Nicobars, *Megachile* sp. n. MOCSÁRY (953), *Siricidae*, Japan, 1 sp. n., Tonkin, 4 spp. n. MOCSÁRY (951), Tonkin, *Clavellaria* sp. n. NURSE (985), India, *Apidae*, many n. spp. NURSE (986), India, *Chrysid.* 7 spp. n., *Fossoria*, 2 spp. n., *Eumenes* sp. n. KIEFFER (794), India, Burma, *Proctotryp.*, 3 spp. n. SCHULZ, India, 4 spp. *Crabro*, *Zeitschr.* Breslau xxix, p. 101.

Lepidoptera. BUSCK (206), China, *Coleophora* sp. n. DIETZE (380), Japan, *Eupithecia* sp. n. DRUCE (408), Malay States, *Lycenidae* list. DUDGEON (416), Sikhim and Bhutan, *Noctuidæ*, Cat. DYAR (428), Japan, *Epipyrops* sp. n. EHRLMAN (447), Ceylon, *Ornithoptera* sp. n. FAWCETT (492), Sikkim, *Rhopalocera*, 10 spp. n. FRUHSTORFER (568), Malay states, *Felicota* n. sp. GREEN (621), Ceylon, *Danais alcippus*. HAMPTON (654), India, *Notodontidae*, 2 spp. n. HEYLAERTS (682), Tonkin, *Chalia* n. sp. MANDERS (900), Ceylon, *Rhopalocera*, distribution. MOORE (956), India, *Pieridae*, 1 sp. n. Baluchistan, *P. machaon*, NURSE, p. 723, J. Bombay Soc. xv. OBERTHÜR (988), Siao-Lou, *Rhagastis* sp. n. PÜNGELER (1110), Japan, *Noctuidæ*, *Geometridæ*, 4 spp. n. SWINHÖE (1361), Singapore, *Bombyces*, 2 spp. n., Poona, *Thoesa* sp. n. SWINHÖE (1363), Khasia hills, *Scopelodes* sp. n., *Hypereschna* sp. n. SWINHÖE (1364), Perak, *Ercheia*, sp. n. WARREN (1476), India, *Cryptoloba* sp. n., Tonkin, *Uliura* and *Ptychopoda* n. sp. YOUNG (1542), India, *Rhopalocera*, distribution.

Diptera. BEZZI (125), Ceylon, *Empidæ*, 4 spp. n., India, Singapore, 3 spp. n., Indo-Australian *Empidæ* list. COQUILLETT (314), India and Ceylon, *Acalyptrate*, 4 spp. n. GILES (601), India, *Corethra* n. sp. GILES (604), Himalaya, *Howardina* sp. n. JAMES & LISTON (760), India, *Anopheles*, with sp. n. KERTÉSZ (789), India, *Sapromyzides* n. g. MEIJERE (934), Darjiling, Ta-tsien-lu, n. spp. RICARDO (1172), Ceylon, *Udenocera* n. g. *Tabaninae.* SPEISER (1331), Burma, *Ornithomyia obscurata.* THEOBALD (1371), Malay States, *Culicidae* n. genn., n. spp.

Aphaniptera. ROTHSCHILD (1191), India, Japan n. spp.

Hemiptera. BREDDIN (167), *Chilocoris*, 2 spp. n. BREDDIN (168),

Tonkin, 11 spp. n., Sikkim, sp. n. *Pentatomidae*. DISTANT (383), India, Ceylon, Burma, *Reduviidae-Capsidae*. DISTANT (384), India and Pahang, *Cicadidae*, 8 spp. n. DISTANT (385), Ceylon, n. g. *Naucoridae*. DISTANT (386), India, *Glossopelta*, Ceylon, *Cercotmetus* n. sp. DISTANT (387), China, *Fulgentius* n. g. *Capsidae*, Singapore, *Mertila* n. g. DISTANT (392), Himalaya, Burma, *Anthocoridae*, 3 genn. n. DISTANT (393), Japan, China, Formosa, Laos, *Cicadidae* spp. n. HORVÁTH (714), Malacca, Burma, *Colobathrininae* n. spp. HORVÁTH (718), Japan, *Plea* n. sp., Ceylon, *Micronecta* n. sp. JAKOVLEV (756), Sé-Tschuen, *Geocoris* sp. n. KIRKALDY (813), India, Cochin China, *Notonectidae*, 2 spp. n. MARTIN (918), S. India, n. g. *Tesseratominae*. MATSUMURA (922), Japan, *Cercopidae*, 19 spp. n., *Cicada* sp. n. REUTER (1162), Setschuan, *Stenodema*, 3 spp. n. REUTER (1165), Corea, *Capsidae*, 2 spp. n. REUTER (1166B), China and Mou-Pin, *Capsidae* spp. n. SCHMIDT (1229), Ceylon, *Ormenis* sp. n. SCHOUTEDEN (1236), Hainan, India, *Scutellerides*, 2 spp. n. Ceylon, brief notes on fauna, *Spolia Zeylan.* i, pp. 114-116. *Coccidae*. GREEN (620), Ceylon, *Lecanium* n. spp. *Termitidae*. DESNEUX (369), Annam sp. n., Ceylon sp. n. DESNEUX (373), Kashmir, *Termopsis* n. sp. *Odonata*. FÖRSTER (536), Upper Malacca, Sikkim, 4 spp. n. WILLIAMSON (1531), Burma and Lower Siam, *Calopteryginae* list, 1 sp. n. WILLIAMSON (1532), Formosa, *Psolodesmus* sp. n. BOLÍVAR (144), India, *Chrotogonus* sp. n. BOLÍVAR (147), India, *Pæcilocerus* n. sp. BURR (201), India, Japan, China, Tibet etc., *Forficulidae* n. spp. HANCOCK (655), Ceylon, *Tettigidae* monograph, 9 spp. n. KIRBY (804), Nepal, Ceylon, *Mantidae*, 2 spp. n. KIRBY (805), *Phasmidae*, Tonkin, 6 spp. n., Singapore, Penang, 3 spp. n. KRAUSZE (843), Tonkin, *Phaneropteridae*, 2 spp. n. KRAUSZE (844), Tonkin, *Conocephalidae*, 2 spp. n. NAVÁS (975), Himalaya, *Blattidae*, *Mantidae*, *Aceridiid.*, 4 spp. n. REHN (1128), Lower Siam, *Blattidae*, 5 spp. n. REHN (1130), Siam, *Phasmidae*, Japan, n. spp. REHN (1133), Siam, *Scelimena*, Japan, *Erianthus* sp. n.

7. ASIATIC ARCHIPELAGO, including PAPUA. (For islands beyond Papua see 2. Insular.)

Insecta. DYAR, Philippines, notice of a general work of 1895 by ELERA; J. N. York Ent. Soc. xii, pp. 58, 59. *Coleoptera*. ARROW (38); Java *Ochodeus* n. sp. AURIVILLIUS (57); *Glenea* 7 spp. n. BERNHAUER (108); Mentawai, *Holusus*, Sumatra, *Pinophilus* sp. n. BERNHAUER (109); Nias Sumatra, *Lispinus Holusus*, Mentawai *Osorius*. BOILEAU (143); Sumatra, *Hemisodorcus* sp. n. FAUVEL (482); Java, Borneo, etc. *Museochara* n. sp. FAUVEL (485); *Staphylinidae* n. spp. FAUVEL (486); Sumatra, *Lyctus* n. sp. FAUVEL (490); New Guinea, *Staphylinidae*, 2 n. spp. GEBIEN (590); Borneo, *Phrugonius* n. sp., Java, *Spirocus* n. sp. HAGEDORN (650); Java, *Scolytoplastypus* sp. n. HAUSER (664); N. Guinea, *Vulgus* sp. n. HAUSER (665); Key islds., *Nemophas* n. sp. HORN (710); N. Guinea, *Cicindela* sp. n. JACOBY (743); New Guinea, *Chrysomelidae*, 54 spp. n. JORDAN (767); Sumatra, Borneo, Celebes, Philippines, *Anthrbiidae* spp. n. JORDAN (772); Java, Celebes, New Guinea, Ternate, *Anthrbiidae*, 14 spp. n. KOLBE (831); Sumatra and Borneo, *Valgidae* n. genn., n. spp. LEWIS (880), Borneo, *Niponius* sp. n.; Java, *Platysoma* n. sp. MÖLLENKAMP (954); Borneo and Sumatra, *Lucanidae*, 5 spp. n. MOSER (965); Borneo, Sumatra, *Valgides* spp. n. PETRI (1037); Borneo, Java, *Lixus* sp. n. PIC (1064); Sumatra, *Mesocolopus* sp. n. RAFFRAY (1114); *Pselaphidae*, general work. SRAETH (1327); Java, Sumatra, Mentawai, Borneo, *Cassididae*, 4 n. spp. WASMANN (1481); Java, *Paussus*, 2 spp. n. WEISE

(1504); Borneo, Celebes, Sumatra, New Guinea, *Hispidae* n. spp. ZANG (1545); Moluccas, *Passalidae* n. sp. ZANG (1546); Borneo, *Passalidae*, 2 genn. n.

Hymenoptera. ASHMEAD (44); Philippines, *Apidæ* n. spp., *Fossoria*, 2 spp. n., *Hedychrum* sp. n., *Telenomus* sp. n., *Braconidae* sp. n., *Ichn.* n. sp.

ASHMEAD (47); Philippines, *Apidæ*, 2 spp. n., *Fossoria*, 7 spp. n., *Mutillidae*, 1 sp. n., *Bethylidae*, 3 spp. n., *Proctotrypidæ*, 1 sp. n., *Chalcid.*, 7 spp. n., *Evaniidae* sp. n., *Ichneumonidae*, 12 spp. n., *Braconidae*, 10 spp. n. ASHMEAD (48); Philippines, Catalogue with spp. n. ASHMEAD (53); Philip-

pines, fig-insects, 2 spp. n. BUYSSON (217); Java, *Chrysis* n. sp. CAMERON (222); Ternate, *Bracon* n. sp. COCKERELL (282); Philippines, *Ctenoplectra* sp. n. ENDERLEIN (456); *Braunsia*, 3 spp. n. FRIESE (541), Tenimber-Larat, *Vespidæ* n. g. FRIESE (548), *Megachile* sp. n.

FRIESE, Java, list, Allg. Zeitschr. Ent. pp. 138-140. KIEFFER (793), Java, *Evaniidae* spp. n. KIEFFER (794), Sumatra, New Guinea, Ternate, *Proctotryp.* 7 spp. n. KRIEGER (845), New Guinea, *Trichomma* sp. n. SAUSSURE (1218), Borneo, *Megischus* n. sp. SCHULZ (1255), New Guinea, short list, *Cælioxyx* sp. n. SZÉPLIGETI (1367), Celebes, New Guinea, *Braconidae* n. spp. TULLGREN (1405), Java, *Scolia*, 4 spp. n.

Lepidoptera. BETHUNE-BAKER (116), Brit. New Guinea, *Lycenidae*, *Erycinid.*, *Bombyc.* s. l., *Noctuid.*, many spp. n. BETHUNE-BAKER (118), Halmaheira, Borneo, *Arhopala*, 3 spp. n. DANNATT (351), Gilolo, *Delias* n. sp. H. H. DRUCE (407), Borneo and New Guinea, *Lycenidae*, 4 spp. n. FRUHSTORFER (566), Borneo, *Pseudamathusia* n. sp., New Guinea, *Dicallaneura* sp. n. FRUHSTORFER (567), Obi, *Euplæa* n. sp. FRUHSTORFER (569), Engano, *Rhopalocera* list. FRUHSTORFER (570), New Guinea, *Calliplæa* sp. n. FRUHSTORFER (571), Celebes, *Elymnias* n. sp.

FRUHSTORFER, Soc. ent. xix, p. 138, New Guinea, *Tenaris* n. sp. JORDAN (771), New Guinea, *Heterusia* sp. n. LATHY (860), Gilolo, *Cyrestis* sp. n. MABILLE (898), New Guinea, 3 n. spp., Celebes, 1 n. sp. PIEPERS & SNELLEN (1084), Java, *Lithosiidae*, catalogue, 5 spp. n. PIEPERS & SNELLEN (1085), Java, *Syntomidae*, 1 sp. n. ROTHCHILD (1194), New Guinea, *Papilion.*, *Pier.*, *Erycin.*, *Nymphal.*, *Geometr.* spp. n. ROTHCHILD (1195), New Guinea, *Sphingidae*, 2 spp. n. ROTHCHILD (1197), New Guinea, *Abisara* sp. n. ROTHCHILD (1198), New Guinea, *Opodiphthera* n. sp.

SHELFORD (1289), Borneo, *Rhopalocera* n. spp. SWINHÖE (1361), Borneo, many spp. n., Celebes, *Eupterote* sp. n., Fergusson isld. *Agonis* sp. n. SWINHÖE (1363), Philippines, *Eulype* sp. n. SWINHÖE (1364), 13 spp. n. THIEME (1381), Nias isld., *Stictoplæa* sp. n. SNELLEN (1428), Java, *Tineidae*, 3 spp. n. VAN DEVENTER (1429), Java, *Tineidae*, 166 spp. n. WARREN (1476), *Geometridæ*, 7 spp. n., *Thyrid.* 2 spp. n.

Diptera. BEZZI (125), New Guinea, *Empidæ* spp. n. GILES (603), Philippines, *Culicidae*, 8 spp. n. LUDLOW (891), Philippines, *Culicidae* sp. n. LUDLOW (892), Philippines, *Culicidae*, 2 spp. n. MEIJERE (934), Java, n. spp. MEIJERE (935), Aru and Halmaheira, *Halophilus* and *Pseudoformosia* n. sp. SPEISER (1328), New Guinea, *Olfersia*, 2 spp. n. SPEISER (1331), Java, Sumatra, New Guinea, *Hippoboscidae*, 3 spp. n. STEIN (1343), Java, *Anthomyiidae*, 10 spp. n.

Aphaniptera. ROTHCHILD (1191), New Guinea, n. sp. *Hemiptera*. BREDDIN (168), *Pentatomidae*, 10 spp. n. BREDDIN (169), Buru, *Plisthenes* n. sp. DISTANT (387), Ternate, *Capsidæ* n. sp. DISTANT (389), Borneo, *Coreidae* n. g. DISTANT (393), Borneo, *Cicada* sp. n., Sumbawa, *Cryptotympana* sp. n. HORVÁTH (714), *Colobathristinae* spp. n., genn. n. HORVÁTH (718), New Guinea, *Micronecta* sp. n.

KIRKALDY (813), Sumatra and Celebes, *Notonectidae*, 2 spp. n. SCHMIDT (1228), Sumatra, *Flatides*, 16 spp. n., n. g. SCHMIDT (1229), *Flatides*, 8 n. spp.

Coccidae. GREEN (622), Java, 4 spp. n.

Neuroptera. WEELE (1501), *Ascalaphidae*, 4 spp. n.
Odonata. MARTIN (919), Java, *Macromia* n. sp.
Orthoptera. BURR (210), Borneo, *Forficulidae* spp. n. CAUDELL (254), Philippines, *Forficulidae* sp. n. KIRBY (804), Lombok, *Humbertiella* sp. n. KIRBY (805), Borneo, *Necrosia* n. sp., New Guinea, *Eurycnema* n. sp. NAVÁS (975), Philippines, 4 spp. n. REHN (1130), Sumatra and Obi, *Phasmidae*. REHN (1133), Labuan, N. Borneo, *Erucius* and *Mazarredia* sp. n.

8. AUSTRALIA and TASMANIA. (For New Zealand see

2. Insular.)

Insecta. FROGGATT (562), *Micromus* n. sp., *Braconidae* n. sp., *Cynipidae* n. sp. GOUDIE & LEA, specially *Coleoptera*, Gippsland, pp. 51-56, Victorian Natural. xxi. KERSHAW, Victorian Natural. xx, pp. 122-125, Launching Place, short lists.

Coleoptera. BERNHAUER (108), *Oxytelus* n. spp., *Atheta* n. sp., *Zyras* n. sp. BLACKBURN (132), *Trox* revision, 6 spp. n. BLACKBURN (133), *Bolboceras* revision, spp. n. BLACKBURN (134), *Copridae* spp. n. FAUVEL (485), *Staphylinidae* n. spp. KERSHAW, Victorian Natural. xx, pp. 150, 151, Buffalo Mountains. LAMEERE (854), *Toxentes* sp. n. LEA (561), *Cuculionidae* n. g. LEA (863), Australia and Tasmania, *Cryptocephalides* revision, many n. spp. LEA (862), *Curculionidae*, many spp. n. LEA (864), incl. Tasmania, *Staphyl.*, *Rhysod.*, *Cucuj.*, *Copr.*, *Rhipiph.*, *Oedemer.*, *Curcul.*, *Scolyt.*, *Chrysom.* n. spp. LEWIS (880), *Hister.* sp. n. OHAUS (990), *Anoplognathides* revision. PIC (1064), *Thaptor* n. sp. RAFFRAY (1114), Austr. and Tasm., *Pselaphidae*, general work. RAINBOW (1116), Sydney, *Stigmodera* and *Horistonotus* sp. n. SLOANE (1310), Tropical Australia, *Cicadelidae* 3, *Carabidae* 5, spp. n. SLOANE (1311), *Carabinae*, revision, n. spp.

Hymenoptera. CAMERON (240), *Pristaulacus* sp. n. COCKERELL (282), *Saropoda* sp. n., *Anthoglossa* sp. n. COCKERELL (283), *Halictinae*, revision, n. spp. ENDERLEIN (458), Adelaide, n. g. *Thynnidae*. KIEFFER (793), *Evanidae* spp. n. SZÉPLIGETI (1367), *Braconidae* n. sp.

Lepidoptera. FRUHSTORFER (565), Queensland, *Tachyris* sp. n. LOWER (888), incl. Tasmania, *Tineidae*, 33 spp. n. MABILLE (898), *Padraona*, *Ocybadistes* n. sp. MEYRICK (946), Australian *Gelechiidae*, 207 n. spp., 39 n. genn. TURNER (1408), *Notodontidae* and *Syntomidae*, 9 spp. n. TURNER (1409), *Geometridae*, revision. TURNER (1410), revision of *Thyrididae*, 1 sp. n., *Pyrallidae*, many spp. n. TURNER (1411), *Bombyces* *Noctuidae*, *Geometr.*, *Tineid.*, many spp. n. TURNER (1412), Austral. and Tasman., *Lymantriidae*, 4 spp. n. WARREN (1476), *Geometridae*, 3 spp. n., *Thyrid.*, 1 sp. n. WATERHOUSE (1493), *Hesperiidae*, erroneously listed. WATERHOUSE (1494), *Heteronympha* sp. n. WATERHOUSE & TURNER (1495), *Lycanidae*, doubtful species.

Diptera. BEZZI (125), *Empidae* spp. n. COQUILLET (314), W. Australia, *Tachina* n. sp. RAINBOW (1117), *Nycteribia* n. sp.

Aphaniptera. ROTHSCILD (1191), n. spp.

Hemiptera. BERGROTH (105), Queensland and Tasmania, *Morbora* 2 spp. n. DISTANT (384), *Cicadidae* sp. n. DISTANT (387), *Armachanus*, *Capsidae*, n. sp. DISTANT (388), North Queensland, *Heteroptera*, genn. n., spp. n. DISTANT (391), Queensland, *Mononyx* sp. n. DISTANT (393), *Cicadidae*, 3 spp. n. GODING & FROGGATT (613), Austral. and Tasman., monograph, *Cicadidae*, 119 species. KIRKALDY (813), *Anisops*, 3 spp. n. SCHMIDT (1229), Queensland, *Flatides*, 3 spp. n. SCHOUTEDEN (1236), N. S. Wales, *Philia* n. sp.

Coccidae. GREEN (625), *Chionaspis*, *Antonina* sp. n. GREEN (624), Victoria, 5 spp. n.

Neuroptera. KEMPNY (785), *Chrysopa* sp. n. FROGGATT (557), *Embiidae*, 2 spp. n., *Croce* n. sp. WEELE (1501), N. W. Austral., *Acanthacsis* sp. n.

Orthoptera. BOLÍVAR (147), Sydney, *Monistria* n. sp. KIRBY (805), *Phasmide*, 2 spp. n. REHN (1128), 3 spp. n. TEPPER (1370), S. Australia, *Blattidae*, *Mantidae*, *Aceridiidae*, *Gryllacris* n. spp.

9. NORTH AMERICA. For Bahamas and Bermudas see

11. Antilles.

Insecta. The Insects of Alaska, MERRIAM and others (940). Canada, various notes, Ottawa Natural. xvii, pp. 216-220. BEUTENMÜLLER (119), New York Galls. CURRIE (333), Kootenay, collecting trip. GODMAN (614). SCHAEFFER, S. Texas, peculiarities, J. N. York ent. Soc. xii, pp. 63, 64. SNOW (1325), Arizona, Collector's list. HEIDEMANN and others, Plummer's isld. Maryland, P. ent. Soc. Washington vi, pp. 22, 23.

Coleoptera. BERNHAUER (109), Michigan, *Trogophlaeus* sp. n. BLANCHARD (135), California, *Dromaeolus* n. sp. BRUES (188), Texas, *Ecitopora* sp. n. CASEY (248), *Staphylinidae*, 2 n. genn., *Anthicidae* n. genn., *Curculionidae*, 3 spp. n. CHITTENDEN (263), *Sphenophorus*, 2 spp. n., and (264), 4 spp. n. CHITTENDEN (266), Arizona, *Latheticus* n. sp. CHITTENDEN (1498), Illinois, *Oberea* n. sp. COQUILLETT (317), Louisiana, *Culex* n. sp., Massachusetts, *Metriocnemus* n. sp., Canada, *Cuterebra* n. sp., *Bischopia* n. sp. DAVIS (353), New Jersey, *Neoclytus* sp. n. DURY Ohio, *Melasini*, 28 spp., Ent. News Philad. xv, p. 52. FELT & JOUTEL (495B), *Superda*, monograph, 1 sp. n. FUCHS, Tulare, trip, Ent. News Philad. xv, pp. 337-339. KNAUS, Sacramento Mts., list, Ent. News Philad. xv, pp. 152-157. LENG, N. Jersey, J. N. York ent. Soc. xii, p. 64. NEEDHAM, Beetle drift on Lake Michigan, Canad. Ent. xxxvi, pp. 294-296, and 335. PIC (1064), *Ptinus* sp. n. PIC (1068), *Ptinus*, 2 spp. n. PIERCE (1086), Nebraska, *Rhipiphorus*, *Myiodites*, *Stylops* n. spp. RAFFRAY (1114), *Pselaphidae*, general work. SCHAEFFER (1220), Rio Grande, Florida etc., n. spp., n. genn. SCHWARZ (1262), Los Angeles, *Pseudo-weisea* n. sp. SCHWARZ, Maryland, *Hormops*, P. ent. Soc. Washington vi, p. 11. SHERMAN, N. Carolina, *Cicindelidae*, Ent. News Philad. xv, pp. 26-32, 112. SKINNER (1302), Arizona, *Meloidae*, 3 spp. n. STEVENSON, Canada, *Aphodius erraticus*, Canad. Ent. xxxvi, p. 164.

Hymenoptera. ASHMEAD (42), *Siricidae*, 4 spp. n. ASHMEAD (52), Utah, *Torymus* sp. n. BRADLEY (164), Oregon and Colorado, *Cratichneumon*, 2 spp. n. BRUES (190), *Proctotrypidae*, 3 spp. n. BUYSSON (217), California, *Chrysis* n. sp. CAMERON (228), "N. Mexico," *Nysson* sp. n. COCKERELL (280), *Epeolus*, 6 spp. n. COCKERELL (281), New Mexico, Colorado, *Apidae*, 5 spp. n. COCKERELL (284), California, *Anthophora* sp. n. COCKERELL (286), New Mexico, *Apidae*, 3 spp. n. COCKERELL (289), New Mexico, *Apidae*, 3 spp. n. COCKERELL (291), Southern U. S., *Apidae* spp. n. COCKERELL (292), Colorado, *Nomada*, 13 spp. n. COCKERELL (293), S. California, *Apidae*, sp. n. COCKERELL, New Mexico, bees, Ent. News Philad. xv, p. 171. CRAWFORD (327), New Jersey, *Halictus*, 2 spp. n. FELT (495A), New York and Colorado, *Ophionini*, 4 spp. n. FOREL (529), British Columbia, *Formicidae* varr. n. FOREL (530), Texas, *Acanthostichus* sp. n. FYLES (574), Quebec, *Torymus* n. sp. FYLES (575), *Amesolytus* sp. n. GRAENICHER (619), Wisconsin, *Andrena*, 3 spp. n. KIEFFER (793), *Proctotrypidae* and *Evaniidae* spp. n. KONOW (838), Texas, *Periclista* n. sp. ROBERTSON (1182), *Apidae*, 3 spp. n. SWENK (1358), Nebraska, *Colletes* sp. n. TITUS (1389), Illinois, n. g. *Osmiinae*. TITUS (1390), *Osmiinae*, 7 spp. n. VACHAL (1424), *Halictus*, 14 spp. n. VIERECK

(1445), *Odontophotopsis*, 11 spp. n. VIERECK (1446), *Fossoria*, 10 spp. n. VIERECK (1447), *Parnopes*, 7 spp. n. VIERECK (1448), New Jersey, *Perdita*, 2 spp. n. VIERECK (1449), Arizona, *Tachysphex* n. sp. VIERECK (1450), Delaware, *Apidae* n. g. VIERECK (1451), Nevada, *Apidae* n. g. VIERECK (1452), Wisconsin, *Habrocryptus* sp. n. VIERECK (1453), Pennsylvania, *Ammoplanus* sp. n. VIERECK and others (1454), Oregon, British Columbia etc., *Apidae*, synopsis with spp. n. VIERECK & COCKERELL (1455), New Mexico, *Philanthidae*, 3 spp. n. VIERECK, Vancouver, *Thyreopos latipes*, Canad. Ent. xxxvi, p. 51. WHEELER (1518), Utah and Colorado, *Formicidae*, 4 spp. n. WHEELER (1519), Texas, *Colobopsis* n. sp. WHEELER (1520), Catalina isld., 8 spp. WHEELER (1521), North Carolina, 61 spp. WHEELER (1522), Colorado, *Formica* n. sp.

Lepidoptera. Distribution of *Sphingidae*, WEBSTER (1500).

ANDERSON (26), British Columbia, catalogue. ASHMEAD (45), New York, *Thymaris* sp. n. BARNES (88), chiefly Texas and Arizona, many spp. n. BRIMLEY, N. Carolina, *Sphingidae*, *Saturn.*, *Ceratocamp.*, Ent. News Philad. xv, pp. 120-126. BUSCK (203), British Columbia, *Tineidae*, 34 spp. n., n. g. BUSCK (204), Arizona, *Tineidae* n. g. BUSCK (205), Colorado, *Ethmia* sp. n. DOD, Alberta, list (continued from 1901) Canad. Ent. xxxvi, pp. 345-355. DOLL, Brownsville, short list, J. N. York ent. Soc. xii, pp. 126, 127. DYAR (420), British Columbia, long catalogue, 14 spp. n. DYAR (422), *Rhopalocera*, *Bombyc.*, *Noct.* n. spp. DYAR (424), United States, *Pyrallidae*, 9 spp. n. DYAR (427), British Columbia, *Diacrisia* sp. n. DYAR (430), *Tortricidae* n. g. DYAR (431), *Noctuidae*, *Notodontidae*, 5 spp. n. DYAR (432), *Sesiidae*, *Cochliidiidae*, *Noctuidae*, *Geometridae*, *Pyrallidae*. DYAR (433), Mackenzie, *Oeneis* n. sp. DYAR (435), *Illice*, 4 spp. n. DYAR (436), North Carolina, *Lactilia* n. sp. DYAR (437), Rhode isld., *Ancyliis* n. sp. DYAR (438), *Scoparia*, 4 spp. n. DYAR (439), British Columbia, *Noctuidae*, 8 spp. n. FERNALD (497), Ohio, n. g. *Choreutinae*. FIELD, New Hampshire, *Eurema lisa*, Psyche xi, p. 102. FLETCHER (515), Canada, *Phyciodes*, *Thecla*, *Pamphila* sp. n. FLETCHER (516), Canada, *Rhopalocera*, 3 spp. n. FYLES (576), Quebec, *Trichotaphe* n. sp. GIBSON, Meech Lake, Quebec, Ottawa Natural. xvii, pp. 204-206. GRINNELL (634), California, *Thanaos* sp. n. HEATH, Manitoba, supplementary list, Canad. Ent. xxxvi, pp. 269-272. KEARFOTT (776), British Columbia, *Tortricidae*, 7 spp. n. KEARFOTT (777), Assinaboia, *Proteopteryx* sp. n. NEWCOMB, Michigan, *Rhopalocera* in 1903, Ent. News Philad. xv, pp. 204-206. NEWCOMB, Michigan, *Cocytius cluentius*, Ent. News Philad. xv, p. 345. SKINNER (1303), Brit. Columbia, *Thecla* sp. n. SMITH (1313), *Noctuidae*, Calgary, 7 spp. n. SMITH (1314), U. S., Canada etc., *Noctuidae*, 12 spp. n., n. g. TAYLOR (1369), Vancouver, *Ennominae* n. g. WARREN (1474), Colorado, *Lampropteryx* and *Curipeta* n. spp. WARREN (1477), Colorado, Oregon, *Geometridae*, 7 spp. n.

Diptera. ADAMS (2), 27 spp. n. ADAMS (9), Colorado and Texas *Siphonella*, 2 spp. n. BACK (73), *Asilidae*, 6 spp. n. BEZZI (128), *Dipterous* galls in N. America, historical, statistical. BRIMLEY & SHERMAN, List of the *Tabanidae* (Horse-flies) of North Carolina, Ent. News Philad. xv, pp. 270-275, correction, t. c. p. 302. BRITTON (183), Connecticut, *Culicidae*. COCKERELL (287), Colorado and New Mexico, *Cecid.*, 3 spp. n. COQUILLETT (313), Georgia, *Chlorops* n. sp. COQUILLETT (315), 52 spp. n., n. genn. COQUILLETT (316), New Jersey, *Culex* sp. n. COQUILLETT (318), Southern Texas, 9 spp. n. DYAR (426), *Culex* n. sp. DYAR (429), British Columbia, *Culicidae*. FELT (495), N. York, *Culicidae*, 9 spp. n. FELT & YOUNG (496), United States, *Culex*, 4 spp. n. GILLETTE (605), Colorado, *Pegomyia* n. sp. GROSSBECK (637), New Jersey, *Culex* sp. n. GROSSBECK (638), New Jersey, *Culex*, 2 spp. n. HERRICK, *Grabhamia jamaicensis*, Ent. News Philad. xv, p. 81. HINE (688), British

Columbia, list with 2 spp. n.; OSBURN (1003), British Columbia, *Syrphidae* list. HINE (689), N. Carolina, *Chrysops*, 2 spp. n. HINE (690), Texas and Louisiana, *Ephydridae*, 2 spp. n. HINE (691), *Tabanidae*, 7 n. spp. JOHNSON (765), U. S. and Canada, 4 spp. n. JOHNSON, supplementary list of the *Diptera* of New Jersey, Ent. News Philad. xv, pp. 157-163.

MELANDER (936), *Stratiomyidae* list with *Macrosargus* sp. n. McCracken (931), California, *Anopheles* sp. n. SLINGERLAND & JOHNSON (1309), California, *Cecidomyia* n. sp. STEIN (1342), U. S. incl. Sitka, *Anthomyiidae* n. spp. WHITNEY (1525), *Tabanidae*, 4 spp. n.

Aphaniptera. BAKER (76), spp. n. ROTHSCHILD (1191), Brit. Columbia, Canada, 5 spp. n.

Hemiptera. ASHMEAD (54), Alaska, *Jassidae*, 3 spp. n., *Psyllidae*, 4 spp. n. BUENO (197), New York, *Heteroptera*, list. BUENO, Brit. Columbia, *Notonecta lutea*, Ent. News Philad. 1904, p. 220. BUENO, *Notonecta lutea*, Ent. News Philad. p. 220. BUENO, North American *Notonecta*, p. 62, J. N. York ent. Soc. xii. HEIDEMANN (670), *Aradidae*, 2 spp. n. HEIDEMANN (671), *Aradidae*, 3 spp. n. HEIDEMANN, North Carolina, *Schumannia*, P. ent. Soc. Washington vi, p. 12. OSBORN, Ohio Natural. iv, pp. 99-103; a further contribution to the Hemipterous fauna of Ohio.

SCHOUTEDEN (1236), Colorado, n. g. *Scutellerides*. SCHWARZ (1263), *Psyllidae*, 7 spp. n. SWEZEY (1360), *Fulgoridae*, catalogue. UHLER (1416), Las Vegas, 8 spp. n. *Lygaeidae*, *Capsidae*, *Ceratocombidae*. VAN DUZEE (1430), *Pentatomidae*, Cat., 12 spp. n., n. g. WIRTNER (1535), Pennsylvania, Catalogue.

Aphidæ. COCKERELL (288), New Mexico, *Cladobius* sp. n. PERGANDE (1023), *Phylloxera*, many spp. n. PERGANDE (1024), U. S., *Macrosiphum* n. sp.

Aleyrodidae. BEMIS (99), California, *Aleyrodidae*, 19 spp. n.

Coccidae. SANDERS (1207), Ohio, 3 spp. n. SANDERS (1208), Ohio, monograph.

Neuroptera. BANKS (87), *Neuropt.* except *Odonata*, n. spp. *Psocidae* and *Trichoptera*. BANKS (85), British Columbia, *Trichoptera*, 2 spp. n.

BANKS (84), Washington, *Hydroptilidae*, 2 spp. n. BANKS (82), New Mexico, *Trichoptera*, 7 spp. n. CURRIE (334), Arizona and California, *Hemerobius*, 2 spp. n. CURRIE (335), Kootenay, *Hemerobiidae*, 5 spp. n. BANKS (82), New Mexico, *Hemerobius* sp. n., *Brachynemurus* sp. n. BANKS (81), *Hemerobius*, 5 spp. n. BANKS (82), New Mexico, *Psocus* sp. n. BANKS (82), N. Mexico, *Perlidae*, 2 spp. n.

Odonata. BRIMLEY & SHERMAN, N. Carolina, list, Ent. News Philad. xv, pp. 100-102. WILLIAMSON, West Pennsylvania, additions, Ent. News Philad. xv, pp. 277, 278.

Thysanoptera. DANIEL (350), California, 4 spp. n.

Orthoptera. BRITTON, New England, *Eritettix* and *Conocephalus*, Psyche xi, p. 23. BRUNER (195), Colorado. CAUDELL (251), Florida and Galveston, *Phasmidae*, 2 novelties. CAUDELL, British Columbia, list and notes, Ent. News Philad. xvi, pp. 62, 63. CAUDELL, Assiniboia, short list, Canad. Ent. xxxvi, p. 248. GILLETTE (606), Colorado, list. BRUNER (605), Colorado, n. spp. MEAD, Ohio Natural. iv, pp. 109-112; a list of the *Orthoptera* of Ohio. MORSE (962), Southeast. U. S., *Acridiidae*, 14 spp. n. REHN (1132), New Mexico etc., *Acridiidae*, 2 spp. n., *Locustidae* sp. n. REHN & HEBARD (1134), Georgia and Florida, *Ceuthophilus* sp. n. REHN (1135), Texas, *Kakerlac* sp. n. REHN (1138), S. Carolina, *Chorisoneura* n. sp. REHN (1137), New Jersey, *Melanoplus* sp. n. REHN (1139), *Stenopelmatinæ*, 2 spp. n. REHN, notes on the *Orthoptera* of the Keweenaw Bay region of Baraga County, Michigan, Ent. News Philad. xv, pp. 229-237, 263-269. REHN, notes and records of New Jersey *Orthoptera*, Ent. News Philad. xv, pp. 325-332. SCUDDER & COCKERELL (1267), New Mexico, *Blattidae*, *Phasmid.*

Acrid., *Locust.*, *Gryll.*, spp. n. WALKER (1465), Ontario, *Gryllidæ*,
2 spp. n. WALKER (1466), Ontario, *Locustidæ*, annotated list.

10. CENTRAL AMERICA (MEXICO to PANAMA incl.).

Insecta. GODMAN (614).

Coleoptera. BATES (92), Costa Rica, *Plusiotis* n. sp. BERNHAUER
(108), *Eleusis*, *Xantholinus* sp. n. CASEY (248), Mexico, *Dinocleus* sp. n.,
Anthicid. n. sp. JACOBY (748), Mexico, Costa Rica, Panama, *Halticinae*,
6 spp. n. JACOBY (748), Costa Rica, *Chlamys* n. sp. JACOBY (749),
Mexico, *Chlamys* n. sp. JORDAN (769), Mexico, Costa Rica, Nicaragua,
Anthrribidæ spp. n. LAMEERE (854), Mexico, *Callipogon* sp. n. OHAUS
(991), Costa Rica, *Anoplognathides*, 2 spp. n. PIC (1052), Mexico,
Cathorama sp. n. PIC (1064), Mexico, *Ptinidæ*, 2 spp. n. PORTEVIN
(1100), Mexico, *Silphidæ*, novelties. RAFFRAY (1114), *Pselaphidæ*,
general work. SCHAEFFER (1220), Rio Grande and Lower California,
n. spp. STERNBERG (1344), Panama, *Aegopsis* sp. n. WATERHOUSE
(1491), Mexico, *Polycesta*, 2 spp. n. WEISE (1503), Costa Rica, *Cassi-*
dida, 2 spp. n. WEISE (1504), Panama, Mexico, *Hispidæ*, 2 spp. n.

Hymenoptera. BUYSSON (217), Mexico, *Parnopes* n. sp. CAMERON
(228), Panama, n. g. *Masaridæ*, *Paratiphia* sp. n., *Polistomorpha* sp. n.
COCKERELL (280), Vera Cruz, *Triepeolus* sp. n. COCKERELL (281),
Mexico, *Xylocopa* sp. n. COCKERELL (282), Mexico, *Macrotera* n. sp.
COCKERELL (286), Mexico, *Trypetes carinatum*. FRIESE (550), Costa
Rica, *Centris* n. sp. FOREL (526), Costa Rica, *Azteca* n. sp. KIEFFER
(793), *Proctotrypidæ* n. sp. KIEFFER (794), Nicaragua, *Proctotrypidæ*,
4 spp. n. KONOW (838), Costa Rica, Mexico, *Labidarge*, *Ptilia*,
4 spp. n. SWENK (1357), Costa Rica, *Colletes*, 2 spp. n. SZÉPLIGETI
(1366), Mexico, *Trogus* n. sp. TITUS (1389), Costa Rica, *Heriades*
sp. n. VACHAL (1424), Mexico, *Halictus*, 26 spp. n. VACHAL (1426),
Halictus n. sp.

Lepidoptera. DOGNIN (398), Costa Rica, San Salvador, *Notodontidæ*,
2 spp. n., *Eugiviria* sp. n., *Coptotelia* sp. n. DRUCE (406), Yucatan,
Adelocephala sp. n., Costa Rica, *Maschane* sp. n. DYAR (422), Mexico,
Apateles n. sp. DYAR (431), Mexico, *Afilia* n. sp. MABILLE (898),
Chiriqui, *Thracides* n. sp. SCHAU (1225), *Syntomidæ*, *Notodontidæ*,
Noctuidæ, *Chrysauginæ* spp. n. WARREN (1474), Mexico, Costa Rica,
Geometridæ n. spp. WARREN (1477), Mexico, Costa Rica.

Diptera. COQUILLETT (313), Nicaragua, Guatemala, Mexico, 17 spp. n.
COQUILLETT (315), Mexico, Nicaragua and Panama, 5 spp. n. COQUILLETT
(317), Mexico, *Conchyliaestes* n. sp. HINE (691), Mexico, *Tabanus*,
2 spp. n. RICARDO (1172), British Honduras, *Dichelacera* n. sp.
SPEISER (1328), Honduras, *Ornithopertha* n. sp.

Hemiptera. BREDDIN (166), Guatemala, *Lycambes* n. sp. BREDDIN
(171), *Podisus* n. sp. DISTANT (393), *Cicadidæ* n. g. SCHMIDT (1229),
Panama, *Ormenis* n. sp.

Termitidæ. DESNEUX (372), Mexico, *Termes* sp. n.

Mallophaga. CARRIKER (247), Costa Rica, 35 spp. n.

Odonata. CALVERT (220), Costa Rica, *Thaumatoneura* sp. n.

Orthoptera. BURR (201), Mexico, *Sparatta*, *Carcinophora* sp. n.
REHN (1129), Mexico and Costa Rica, 4 spp. n. REHN (1130), Costa
Rica, Nicaragua, *Phasmidæ* n. spp. REHN (1131), Mexico, *Phasmidæ*,
Arsid., *Locust.*, *Gryll.* n. spp. REHN (1136), Nicaragua, *Stagmatoptera*
sp. n. SCUDDER & COCKERELL (1267), Mexico, *Æoloplus* sp. n.

11. ANTILLES, including BERMUDAS, BAHAMAS, BARBADOS.

Insecta. CLARK (278), GODMAN (614). West India *Col.* and *Hemiptera*, UHLER, SCHWARZ and others, pp. 42-46, P. ent. Soc. Washington vi.

Coleoptera. ARROW (39), Jamaica, St. Vincent etc., *Chærostus* 2 spp. n. BERNHAUER (108), St. Thomas, *Leptacinus* n. sp. BERNHAUER (109), St. Thomas, *Osorius* sp. n., Grenada, *Trogophlæus* sp. n. FAUVEL (485), St. Domingo, *Oxytelus* n. sp. LAMEERE (854), Porto Rico, *Callipogon* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work. WATERHOUSE (1491), Jamaica, St. Domingo, *Polycesta*, 2 spp. n.

Lepidoptera. HAMPSON (653), Bahamas, *Phalænæ* spp. n., gen. n. LATHY (861), Dominica, list, 3 spp. n. SCHAUS (1225), Cuba, *Syntomidæ*, *Arctidæ*, *Hipsidæ*, *Megalopygidæ*, *Notodontidæ*, Jamaica, *Hyppena* sp. n., Grenada, *Anisothrix* sp. n. WARREN (1474), Jamaica, *Geometridæ* n. spp. WARREN (1477).

Diptera. ADAMS (9), Grenada, *Siphonella* sp. n. GILES (604), Antigua, *Culicidæ*, 3 spp. n. JOHNSON, C. W., A revised list of the *Diptera* of Bermuda, 50 spp., Psyche xi, pp. 76-80. PAZOS, J.-H., Liste de moustiques de Cuba, Bull. Soc. ent. France 1904, p. 134.

Hemiptera. DISTANT (391), Grenada and St. Vincent, *Capsidæ*, 3 spp. n.

Orthoptera. BURR (201), Granada, *Diplatys*, Martinique, *Carcinophora* sp. n. REHN (1130), Swan island and Porto Rico, *Phasmidæ*, 2 spp. n.

12. SOUTH AMERICA, including TRINIDAD.

Insecta. BRÈTHES (175), Tucuman, *Cyclocephala*, 2 spp. n., *Iphiaulax* sp. n., *Asilidæ*, *Syrphidæ* and *Euxesta* n. spp., *Jassus* n. sp. GODMAN (614). Falkland Islands, see Insular, VALLENTIN.

Coleoptera. ARROW (38), Colombia, Patagonia, *Ægidium*, *Ochodæus*, 4 spp. n. AURIVILLIUS (58), Bolivia and Argentina, *Cerambycidæ*, 4 spp. n. BATES (92), *Pelidnotinæ*, revision, n. spp. BERNHAUER (108), *Staphylinidæ*, 12 spp. n. BERNHAUER (109), Brazil, *Trogophlæus*, 2 spp. n. BOILEAU (143), *Sphenognathus* 2 spp. n. BOURGEOIS (161), *Malacodermidæ*, 3 spp. n. FAIRMAIRE (476), *Cladotoma* sp. n., *Tenebrionidæ*, 7 spp. n., n. g. FAIRMAIRE (478), Brazil, *Cladotoma*, 2 spp. n., *Anchelmus* sp. n. FAUVEL (485), *Oxytelus* n. spp. FAUVEL (488), Brazil, *Staphylinidæ* genn. and spp. n. FAUVEL, Rev. Ent. franc. 1904, p. 140, *Luciola*, 2 spp. HAGEDORN (651) *Coccotrypes* sp. n. HELLER (675), Brazil, *Zygopides*, 4 spp. n. JACOBY (742), Bolivia and Argentina, *Chrysomelidæ*, 9 spp. n. JACOBY (746), *Halticinæ*, 27 spp. n. JACOBY (747), *Mastostethus*, 10 spp. n. JACOBY (748), *Chlamys*, 7 spp. n. JACOBY (749), Venezuela, *Chlamys* n. sp. JORDAN (769), *Anthrribidæ*, many spp. n. and genn. n. LAMEERE (854), Peru, *Callipogon* sp. n. LEWIS (880), *Histeridæ*, 6 spp. n., gen. n. OHAUS (991), *Anoplognathides*, 23 spp. n. PIC (1052), *Cathoroma*, 9 spp. n. PIC (1053), Guiana, *Anthicus* n. sp. PIC (1054), Peru, *Notoxus* n. sp. PIC (1057), Buenos Ayres, *Anthicus* n. sp. PIC (1064), Peru, Chili etc., *Ptinidæ*, 8 spp. n. PIC (1066), Brazil, *Malacoderm.* 2 spp. n. PIC (1067), Brazil, *Eupactus*, 6 spp. n. PIC (1070), Brazil, *Anthicus*, 6 spp. n. PORTEVIN (1100), Guiana, *Dissochaetus* sp. n. RAFFRAY (1114), *Pselaphidæ*, general work. RÉGIMBART (1124), Venezuela and Guiana, *Dytiscidæ*, 2 spp. n., *Gyrinidæ* sp. n. SCHWARZ (1265), *Elateridæ*, 40 spp. n. STERNBERG (1344), *Ægopsis* 4 spp. n. THÉRY (1377), Peru, *Buprest.* sp. n. WATERHOUSE (1491), Brazil, *Acherusia*, 2 spp. n. WEISE (1503), *Cassididæ*, 3 spp. n. ADAMS (10), *Chlorops*, 5 spp. n. WEISE (1504), *Hispidæ*, many spp. n. WEISE (1507), *Cassididæ*, *Hispidæ*, 14 spp. n., gen. n.

Hymenoptera. ANDRÉ (29), Chile, *Mutillidæ*, *Thynnidæ*, 5 spp. n. ASHMEAD (41), *Chalcididæ* of S. America, Catalogue, many genn. n. and

- spp. n. BRÈTHES (176), Brazil, 1 sp. n., Argentina list. BRÈTHES (177), Argentina, *Meteorus* n. sp. BRÈTHES (178), La Plata, monograph of *Eumenidae*, many spp. n. BRÈTHES (179), Patagonia, *Anthidium* sp. n. BRÈTHES (180), Argentina, *Trimeria* sp. n. BRÈTHES (181), Buenos Aires, *Oxybelus* n. sp. DU BUYSSON (217), *Chrysid.*, 5 spp. n. DU BUYSSON (219), *Parachartergus* sp. n., *Sapyga* sp. n. CRAWFORD (326), Bolivia, *Diphaglossa* sp. n. DUCKE (411), social *Vespidæ* n. spp. DUCKE (412), Parà, *Chrysid.*, with *Chrysogona* sp. n. DUCKE (413), Brazil, *Sphegides*, 5 spp. n. DUCKE (414), Lower Amazons, *Eumenidae*, 6 spp. n. DUCKE (415), Amazons, *Centris*, 2 spp. n. FOREL (526), Peru and Amazons, *Formicidae*, 14 n. spp., Chile, 2 spp. n. FOREL (528), Patagonia, Chile, 3 spp. n. FOREL (530), *Formicidae*, 4 spp. n. FOREL (532), Brazil, *Formicidae*, 5 spp. n. FOREL (532), Chile, *Tapinoma* n. sp. FRIESE (542), S. Am. incl. of Chile, *Caupolicana* and *Ptiloglossa* n. spp. FRIESE (543), Brazil and Ecuador, *Ancyloscelis*, 3 spp. n. FRIESE (545), Chile, Peru, Ecuador, *Apidae*, 10 spp. n. FRIESE (547), Chile, *Anthidium* sp. n. FRIESE (550), Brazil and Chili, *Centris*, 2 spp. n. HOLMBERG (697), *Apidae*, *Fossoria*, many spp. n., genn. n., *Tenthredinidae* list. KIEFFER (793), *Proctotrypidæ* and *Evaniidae* spp. n. KIEFFER (794), incl. Patagonia, *Proctotrypidæ*, 8 spp. n. KIEFFER (796), Chile, *Pseudochalcura* n. sp. KIEFFER (797), Chile, *Cynipidae* n. g. KIEFFER (798), Chile, *Proctotrypides*, 3 spp. n. KONOW (838), 7 spp. n., *Labidarge* and *Waldheimia*. PORTER (1099), Chile, *Vespidæ* list. SCHROTTKY (1245), Paraguay, Census, 1 n. sp., *Apidae*. SCHULTHESS-RECHBERG (1246), *Nortonia*, 4 spp. n. SCHULTZ (1253), Amazons, *Aculeata*, 3 spp. n. SZÉPLIGETI (1365), *Braconidae*, many spp. n. SZÉPLIGETI (1366), Peru, *Iphiaulax* n. sp. SZÉPLIGETI (1367), *Braconidae* n. sp. VACHAL (1424), S. Am., incl. Chili, *Halictus*, 5 spp. n. VACHAL (1425), Tucuman, *Apidae*, 62 spp., 39 spp. n. VACHAL (1426), *Halictus* n. spp. VACHAL (1427), Ecuador, *Halictus*, 3 spp. n., *Sphecodes* sp. n.
- Lepidoptera*. DANNANT (351), Venezuela, *Chlorippe*, Guiana, *Monethe* n. sp. DOGNIN (398), Northern S. Am., *Ischnocampa* sp. n., *Notodontidae*, 6 spp. n., *Geometridæ*, 8 spp. n., *Eugiviria*, sp. n., *Pyralidae*, 22 spp. n., *Tortricidae*, 4 spp. n., *Cryptolechia* sp. n. DOGNIN (399), *Geometridæ* and *Lithosiidae*, 23 spp. n. DOGNIN (400, 401), Peru, *Anaxita* sp. n. DRUCE (405), *Erycinidae*, 23 spp. n. DRUCE (406), Tropical S. Amer., *Syntomidae*, *Arctiidae*, *Ceratocampidae*, *Saturniidae*, *Lasiolepididae*, *Bombycidae*, *Notodontidae* spp. n. EHRMAN (447), Venezuela, *Papilio* sp. n. GUPPY, P. Inst. Trinidad, pt. 3, p. 167, Trinidad, *Metamorpho dido*, etc. JOANNIS (763), Organ mountains, *Lycomorphodes* and *Eriopyga* sp. n. KAYE (775), Trinidad, *Rhopalocera* catalogue, 289 spp., 10 spp. n. LATHY (859), *Erycinidae*, 10 spp. n. MABILLE (898), *Hesperiidae*, 9 spp. n. OBERTHÜR (989), Bolivia, *Sphingidae* sp. n. RÖBER (1179), Peru, *Mechanitis* n. sp., *Lymnas* n. sp. RÖBER (1180), Colombia and Ecuador, *Caligo*, 3 spp. n. ROTHSCHILD (1195), Peru, *Sphingidae*, 3 spp. n. ROTHSCHILD, W. (1198), Tucuman, *Rothschildia* n. sp. SANDERS (1206), Brazil, Burchells 1825-1830, *Rhopalocera*. SCHAUS (1225), *Syntomidae*, *Arctiidae*, *Megalopygidae*, *Liparidae*, *Lasiolepididae*, *Saturniidae*, *Ceratocampidae*, *Perophoridae*, *Cossidae*, *Notodontidae*, *Noctuidæ*, *Chrysanginae*. STICHEL (1348), *Narope*, 2 spp. n., *Caligo* n. sp. THIEME (1379), Andes, *Rhopalocera*, 4 spp. n. THIEME (1380), Ecuador, Bolivia, *Lymanopoda*, 2 spp. n. THIERRY-MIEG (1385), Peru, *Callipia*, *Stamnodes*, *Synneuria* and *Marmopteryx* sp. n., and *Geometridæ* spp. n. WARREN (1474), *Thyrididae*, 2 n. spp., *Epiplem.*, 18 n. spp., *Geometridæ*, about 300 n. spp., n. genn. WARREN (1477), *Siculodes*, 2 spp. n., *Epiplem.* spp. n., *Geometridæ*, many spp. n.
- Diptera*. BISCHOF (130), *Tachinidae*, 13 spp. n. COQUILLETT (319);

- Brazil, *Ceratopogon* sp. n. REED (1123), Chile, *Ornithomyia* n. sp. SPEISER (1328), Rio Grande do Sul, *Stilbometopa* n. sp. STEIN (1342), *Anthomyiidae*, numerous n. spp.
- Aphaniptera*. BAKER (76), Brazil, *Pulex*, 2 spp. n. ROTHSCILD, N. C. (1191), n. spp. ROTHSCILD (1193), Paraguay, *Ceratopsylla* n. sp.
- Hemiptera*. BERGROTH (105), Brazil, *Scutellerides*, 2 spp. n. BREDDIN (165); *Edessa*, 13 spp. n. BREDDIN (170), Bolivia, *Colobasiastes* sp. n. BREDDIN (171), *Heteroptera*, many spp. n., n. g. BREDDIN (172), Ecuador, *Tomaspis*, 8 spp. n. DISTANT (387), Northern S. Amer. *Horcias*, 3 spp. n. DISTANT (393), Bolivia, *Cicada* sp. n. HORVÁTH (714), *Colobathristinae* n. spp. JACOBI (734), *Pæcilopectera*, 2 spp. n. JACOBI (736), Brazil, *Cicadidae* and *Fulgoridae*, 6 spp. n. KIRKALDY (813), *Notonectidae*, 2 spp. n. OSBORN (1001), Bolivia and Guiana, 5 spp. n. SCHMIDT (1229), *Flatides*, 8 spp. n. SCHOUTEDEN (1236), *Scutellerides*, 3 spp. n.
- Aphidae*. SCHOUTEDEN (1240), *Aphidae* of S. Amer., 1 sp. n.
- Trichoptera*. ULMER (1422), Patagonia and Chile, n. spp.
- Perlidae*. KLAPÁLEK (818), Patagonia, Peru, *Gripopteryx*, 2 spp. n.
- Termitidae*. DESNEUX (369), Surinam, *Rhinotermes* sp. n. DESNEUX (372), *Calotermes* sp. n., *Termes* sp. n.
- Ephemeridae*. ULMER (1422), Patagonia, notes.
- Odonata*. NEEDHAM (978), Brazil, *Micrathyria*, sp. n. RIS (1176), Patagonia and Chili list, distribution; Buenos Aires, 2 spp. n.
- Orthoptera*. BORELLI (153, 154), Ecuador, Argentina, Paraguay, *Forfic.* 3 spp. n. BURR (201), Guiana *Forcipula*, Ecuador *Labiá*, Darien *Spongiphora* sp. n. CAUDELL (255), Paraguay, *Forficul.* and *Phasmid.* spp. n. KIRBY (804), Pará, *Photina* sp. n. KIRBY (805), S. Amer. incl. Trinidad, *Phasmidae*, 6 spp. n., gen. n. LYNCH ARRIBÁLZAGA (897), Peru, *Schistoerca* sp. n. MjöBERG (950), *Anisolabis* n. sp. from Matto Grosso, in Sweden. REHN (1129), Bolivia, *Paracanthops cælebs*. REHN (1133), Brazil, Brit. Guiana, Chile, *Acrididae*, 5 spp. n.

PALÆO-ENTOMOLOGY.

Palæozoic insects of Belgium, HANDLIRSCH, Mem. Mus. Belgique iii, 20 pp., vii pls.

Palæozoic Insects and their relations to plants, HANDLIRSCH (659).
Palæoblattina douvillei, is part of a Trilobite, AGNUS, Rev. Sci. Bourbonnais xvii, p. 85.

Diptera.

- Culicidae*. *Corethra ciliata*, Baltic amber, MEUNIER, p. 89, Bull. Soc. ent. France 1904, n. sp.
- MEUNIER, monographs the *Cecidomyiidae*, *Mycetophilidae* and *Chironomidae* found in amber, describing the following n. genn. and n. spp.
- Bryocrypta*, *Cecidomyiidae* (? n. g.), *girafa*, p. 25, *capitosa*, p. 26, *vetusta*, *elegantula*, p. 27, *fagioides*, n. spp., p. 28, Ann. Soc. Bruxelles, xxviii.
- Palæocolpodia* (? n. g.), *eocenica* n. sp., p. 29.
- Colpodia xylophaga*, p. 30, *curvinervis*, p. 31, *brevicornis*, p. 32, n. spp.
- Dicroneurus magnificus*, p. 32, *elegantulus*, p. 33, n. spp.
- Epidosis gibbosa*, p. 33, *minuta*, p. 34, *noduliformis*, *titanica*, p. 35, n. spp.
- Camptomyia sinuosa*, p. 36, n. sp.
- Winnertzia radiata*, p. 36, *cylindrica*, p. 37, *affinis separata*, p. 38, n. spp.
- Monardia submonilifera*, p. 39, n. sp.
- Camptomyza crassitarsis*, p. 40, n. sp.
- Lestremia pinites*, p. 42, n. sp.
- Frirenica eocenica*, p. 43, n. sp.
- Heteropeza pulchella*, p. 43, n. sp.

Ledomyiella n. g.?, p. 44, *L. succini*, *rotundata*, p. 45, *eocenica*, *pygmæa*, p. 46, *crassipes*, p. 47, n. spp.

Sciaridæ. *Palæoheterotricha* n. g. *P. grandis* n. sp., p. 62, *Sciara splendida*, p. 64, *errans*, *villosa*, p. 65, *botuli*, p. 66, *sendelina*, p. 67, *difficilis*, p. 68, *verticillata*, *variabilis*, p. 69, *eocenica*, *diabolica*, p. 71, *orientalis*, p. 72, *rara*, *bella*, p. 73, *ignorata*, *preciosa*, p. 74, *klebsii*, p. 75, *prolifera*, p. 76, *rubsaumenia*, *tertiaria*, p. 77, *robusta*, *morosa*, p. 78, *palmnickii*, *minuscula*, p. 79, *villosoides*, p. 80, *defectuosa*, p. 89, n. spp.

Bradysia curiosa, p. 80, *electra*, *mososoides*, p. 81, *infernalis*, *agilis*, p. 82, *umbrosa*, p. 83, n. spp.

Corynoptera dubia, p. 84, n. sp.

Willistoniella n. g. *W. magnifica*, p. 85, n. sp.

Heeriella n. g. *bifurcata*, n. sp., p. 86.

Cerato n. g. *C. longipalpis* n. sp., p. 86.

Palæognoriste n. g., p. 87, *P. sciariforme*, p. 88, n. sp.

Sciarella n. g. *S. mycetophiliformis* n. sp., p. 89.

Helomyza major, p. 22, *media*, *minuta*, p. 24, Baltic amber, MEUNIER, Feuille Natural. xxxv, n. spp.

Leria alacris, *sapromyzoïdes*, Baltic amber, MEUNIER, p. 25, Feuille Natural. xxxv, n. spp.

Heteromyza dubia, Baltic amber, MEUNIER, p. 25, Feuille Natural. xxxv, n. sp.

Palæoheteromyza n. g.

P. crassicornis n. sp., Baltic amber, MEUNIER, p. 26, Feuille Natural. xxxv.

HANDLIRSCH describes the following from the Permian, Russia.

Palæohemiptera, n. group, for 2 gen. viz., *Presbole* n. g. *hirsuta* n. sp., HANDLIRSCH, p. 2, Mem. Ac. St. Petersb. (viii) xvi, No. 5.

Scytinoptera n. g. *kokeni* n. sp., p. 3, t. c.

Palæomantis n. g. *schmidtii* n. sp., HANDLIRSCH, p. 4, t. c.

Petromantis rossica n. sp., p. 5, HANDLIRSCH, t. c.

Limmatoblatta n. g. *permensis* n. sp., HANDLIRSCH, p. 6, t. c.

Aissoblatta n. g. *orenburgensis*, *rossica* n. spp., HANDLIRSCH, p. 6, t. c.

Phthartus n. g. *Ephemeridform*, *rossicus*, *netschajevi* n. spp., HANDLIRSCH, p. 6, t. c.

Dyadentomum n. g. *Ephemeridæ*, *permense* n. sp., HANDLIRSCH, p. 7, t. c.

Thnetus n. g. *Ephemeridæ*, *stuckenbergi* n. sp., HANDLIRSCH, p. 7, t. c.

Dyadozoarium n. g. *pachypus* n. sp., HANDLIRSCH, p. 7, t. c.

List of Palæozoic and secondary *Homoptera*, with *Acocephalites* n. g. *breddini* n. sp., Kimeridge of Catalonia, MEUNIER, pp. 119–121, Feuille Natural. xxxiv.

Neuropteroid Insect from Solenhofen (Jura), WALTHER, p. 14, Monatsber. deutsch. Geol. Ges., in Zeitschr. Deutsch. geol. Ges. lv.

Palæodictyoptera.

Progonopteryx n. g. *belgica* n. sp., Upper Westphalian Belgium, p. 5, pl. i, figg. 1–3, HANDLIRSCH, Mem. Mus. Belgique iii.

Anthracentomon n. g. *latipenne* n. sp., Upper Westphalian, Belgium, p. 6, pl. i, figg. 4–6, HANDLIRSCH, t. c.

Mecynoptera n. g. *splendida* n. sp., Upper Westphalian, Belgium, p. 7, pl. ii, figg. 7, 8, HANDLIRSCH, t. c.

Breyeria borinensis, figure, description, referred to new family *Breyeriidæ*, pp. 7–10, pl. iii, figg. 9, 10, HANDLIRSCH, t. c.

Megasecoptera.

Palæopalara n. g. *gracilis* n. sp., Upper Westphalian, Belgium, pp. 10, 11, pl. ii, figg. 12, 13, HANDLIRSCH, t. c.

Anthracopalura **n. g.** *falcipectennis* **n. sp.**, Upper Westphalian, Belgium, p. 11, pl. iv, figg. 14-16, HANDLIRSCH, t. c.

Blattoidea.

Archimyliacris belgica, pl. iv, figg. 17, 18, *carbonis*, pl. v, figg. 19, 20; Upper Westphalian, Belgium, HANDLIRSCH, t. c.

Protorthoptera.

Omalia macroptera, pl. v, fig. 21, p. 13, referred to new family *Omalidae*, HANDLIRSCH, t. c.

Pachytylopsis persenairei, pl. vi, figg. 22, 23, p. 14, referred to new family *Pachytylopsides*, HANDLIRSCH, t. c.

Palorthopteron **n. g.** *melas* **n. sp.**, Upper Westphalian, Belgium, pl. v, fig. 24, p. 15, HANDLIRSCH, t. c.

Symballophlebia **n. g.** *latipennis* **n. sp.**, Upper Westphalian, Belgium, p. 15, pl. vi, figg. 25, 26, HANDLIRSCH, t. c.

Palaomastax **n. g.** *carbonis* **n. sp.**, Upper Westphalian, Belgium, pl. vii, figg. 27, 28, p. 16, HANDLIRSCH, t. c.

Anthrocomastax **n. g.** *furcifer* **n. sp.**, Upper Westphalian, Belgium, pl. vii, figg. 29, 30, p. 17, HANDLIRSCH, t. c.

Distasis **n. g.** *rhizophora* **n. sp.**, Upper Westphalian, Belgium, pl. vii, figg. 31, 32, p. 17, HANDLIRSCH, t. c.

The following is named in Amer. J. Sci. xv.

Megablattina beecheri **n. g.**, **n. sp.**, SELLARDS, p. 312, pl. viii; and in op. cit. xviii, is renamed *Archoblattina* **n. n.** *beecheri*, and figured and described, pp. 218-221.

SELLARDS in Amer. J. Sci. xv, and xviii, discusses Palæozoic *Blattidae* and describes the following new forms from the coal-measures.

Myliacris anceps, p. 129.

Etoblattina juvenis, p. 131, *coriacea*, p. 213.

Gerablattina arcuata, p. 216.

Schizoblattina **n. g.** *S. multinervia* **n. sp.**, p. 217.

Etoblattina gaudryi, Carboniferous of Commeny, AGNUS, p. 29, Naturaliste 1904, **n. sp.**

Etoblattina steinmannii, Upper Carbon. Baden, STERZEL, p. lxxi, pl. i, Ber. Ges. Chemnitz xv.

III. SYSTEMATIC.

N.B.—The reference numbers collected under the headings of the various groups refer to "Titles" on pp. 5-89, and are intended to give, in each case, a complete list of all memoirs containing anything of importance in connection with the group.

Classification of Insects, with list of his 34 Orders, HANDLIRSCH (657).

The classification of *Hexapoda*, BÖRNER (157).

Remarks on Börner's classification and names, ENDERLEIN, pp. 145, 146, Zool. Anz. xxviii.

Classification by gonapophyses, *Homoithoraka* and *Heterothoraka*, KLAPÁLEK (815).—KLAPÁLEK, Zool. Anz. xxviii, pp. 255-259, further upholds his system and criticises HANDLIRSCH.

Classification of Insecta, abstract of recent works, HEYMONS (684).

The names of the Orders of Insects, SHIPLEY (1291).—SHIPLEY's list of Orders and names reproduced, Entomologist 1904, pp. 138, 139, and Psyche xi, p. 28.

New Palæozoic Insects from Upper Westphalian of Belgium, see Palæo-entomology, p. 124.

Iridescent and metallic coloration discussed, *Morpho*, *Entimus* etc., BIEDERMANN (129).

What is a species? P. ent. Soc. London 1904, pp. xiii-xvii.

The value of a diagnosis, K. DANIEL, Munchen. Kol. Zeitschr. ii, pp. 71 etc.

Prehistoric entomology, BERTHOUMIEU (114).

Development of wings, POWELL (1104).

(A.) COLEOPTERA.

Sketch of systems of classification of *Coleoptera*, JACOBSON, pp. 268-276
Rev. Russe Ent. 1904.

Number of facettes in the eye, many forms, LEINEMANN (872).

Alaska *Coleoptera*, reprint, SCHWARZ (1264), KINCAID (800).

XAMBEU completes the series of his observations on habits and metamorphosis (1539).

CICINDELIDÆ.

[Memoirs relating to *Cicindelidæ*: FAIRMAIRE (477), HORN (708-713), LESNE (877), MAINDRON (899), PÉRINGUEY (1028, 1029), SLOANE (1310), WICKHAM (1526).]

The *Cicindelidæ* of Ceylon, HORN, *Spolia Zeylan.* ii, pp. 30-44, 1 pl.

Ancient geography and present distribution of some N. American *Cicindela*, WICKHAM (1526).

Amblychila: there are 3 species, the synonymy and characters, HORN, pp. 97-99, *Deutsche ent. Zeitschr.* 1904.

Cicindela, synonymical notes, pp. 86-90, *C. nivicincta inspecularis* subsp. n., p. 87, HORN, *Deutsche ent. Zeitschr.* 1904; *C. germanica* varr. n., BEUTHIN, p. 114, Soc. ent. xix; *C. aphrodisia* var. n. *luctuosa*, RAGUSA, p. 85, *Natural. Sicil.* xvii; *C. schrenki benjamini*, and *ordinaria*, subsp. n., p. 295, *C. 10-pustulata leucomelæna*, p. 296, and *sapphirea*, p. 297, subsp. n., SEMENOW, *Rev. Russe Ent.* 1904; *C. corticata laticolor* var. n., p. 36, *ceylonensis diversa* var. n., p. 37, pl. f. 19, HORN, *Spolia Zeylan.* ii; *C. jungi*, note and fig., RAINBOW, p. 245, *Rec. Austral. Mus.* v.

C. proserpina, p. 424, *oscar*, p. 425, E. Africa, HORN, *Deutsche ent. Zeitschr.* 1904; *C. arnoldi*, Cameroons, HORN, p. 431, t. c.; *C. willeyi*, Ceylon, HORN, p. 36, *Spolia Zeylan.* ii; *C. innocentior*, N. Guinea, HORN, p. 427, *Deutsche ent. Zeitschr.* 1904; *C. frenchi*, Roebuck Bay, p. 527, *aurita*, Mackay, p. 528, SLOANE, P. Linn. Soc. N. S. Wales xxix: n. spp.

Collyris gigas and others, synonymy and notes, *C. bicolor* Horn = (*tonkinensis* Fl.), HORN, pp. 82-84, *Deutsche ent. Zeitschr.* 1904; *C. saundersi letior* subsp. n., HORN, p. 35, *Spolia Zeylan.* ii.

Ctenostoma batesi subsp. n. *rugicollis*, HORN, p. 82, *Deutsche ent. Zeitschr.* 1904.

Distypsidera orbicollis, Cairns, SLOANE, p. 529, P. Linn. Soc. N. S. Wales xxix, n. sp.

Dromica and *Myrmecoptera*, synonymy, pp. 90-93, *M. polyhirmoides* subsp. n. *irregularis*, HORN, pp. 90-92, *Deutsche ent. Zeitschr.* 1904.

D. (Cosmema) concinna, *specialis*, Transvaal, PÉRINGUEY, p. 448, *Nov. Zool.* xi, n. spp.

Euryoda tenuicollis, *virgulata*, p. 128, *lætecyanea*, p. 129, Madagascar, FAIRMAIRE, *Bull. Soc. ent. France* 1904; *E. breviformis*, Madagascar, HORN, p. 85, *Deutsche ent. Zeitschr.* 1904: n. spp.

- Hiresia*, varietal note, HORN, p. 84, Deutsche ent. Zeitschr. 1904.
Megacephala, synonymy, pp. 94-97, *M. (S.) asperatum* subsp. n. *gratiosa*, p. 95, HORN, Deutsche ent. Zeitschr. 1904.
M. oscari, E. Africa, HORN, p. 423, Deutsche ent. Zeitschr. 1904 ; *M. schultzeorum*, Cameroons, HORN, p. 430, t. c. ; *M. ertli*, E. Africa, HORN, p. 432, t. c. : **n. spp.**
Odontochila ignita=(*cinctula* Bates), *O. salvini* Bates and *secedens* Steinh. are one, HORN, p. 86, t. c.
Ophryodera rufomarginata var. n. *circumcinctoides*, HORN, p. 431, t. c.
Pogonostoma subtilis, Diego-Suarez, **n. sp.**, HORN, p. 81, t. c.
Tetracha (Styphlodermma) dodsi, Rhodesia, PÉRINGUEY, p. 167, Ann. S. African Mus. iii, **n. sp.**
Tricondyla horni, S. India, MAINDRON, pp. 263-285, Bull. Soc. ent. France 1904 ; *T. (Derocrania) fusiformis*, Ceylon, HORN, p. 35, pl. f. 1, Spolia Zeylan. ii : **n. spp.**

CARABIDÆ.

[Cf. ABEILLE (2), BREIT (174), BROUN (184), CHOBOUT (268), CSIKI (331, 332), DANIEL (344), DANIEL & DANIEL (349), DEVILLE (374), DESBROCHERS (366), DIMMOCK & KNAB (381), FAIRMAIRE (473, 477), FLEISCHER (514), GANGLBAUER (581, 582), HOLDHAUS (695), KOLBE (829), LESNE (877), MAINDRON (899), PÉRINGUEY (1028), PEYERIMHOFF (1042), PIC (1077), PUEL (1100), REITTER (1152, 1154) SCHAEFFER (1220), SCHATZMAYR (1223), SEMENOW (1272, 1275, 1279, 1280), SLOANE (1310, 1311), TSCHITSCHÉRINE (1401, 1402, 1403), UHAGON (1415), WEBER (1497).]

The larvæ of *Carabidæ*, with detailed study of *Dicælus* and *Brachinus*, DIMMOCK & KNAB, Bull. Springfield Mus. i, pp. 1-55, pls. i-iv.

- Abacetus perturbator*=(*capicola* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
A. auspicatus, p. 189, *vexator*, p. 190, *diversus*, p. 191, *lautus*, *dilucidus*, p. 192, *mimus*, *jucundulus*, p. 193, *servitulus*, *malvernensis*, p. 194, *optimus*, p. 195, *clarus*, *vertagus*, p. 196, *discrepans*, p. 197, *evulsus*, *shiloucanus*, p. 198, *inopinus*, *effulgens*, p. 199, *jubatus*, *pilosulus*, p. 200, S. Africa, PÉRINGUEY, t. c. : **n. spp.**
Acinopus megacephalus=(*emarginatus* Chaud.), *A. gutturosus*=(*megacephalus* Reitt.), BEDEL, p. 139, Bull. Soc. ent. France 1904.
Acupulpus (Balius) drurei, Bagdad, PIC, p. 89, Echange xx, **n. sp.**
Amara nitida var.=(*guntheri* Sahlb.), BEDEL, p. 235, Abeille xxx.
A. (Leiromorpha) uhligi, Mte. Cavallo, HOLDHAUS, p. 226, Munchen. Kol. Zeitschr. ii, **n. sp.**
Anisodactylus nemorivagus atricornis=(*atripes* Ganglb.), BEDEL, p. 235, Abeille xxx.
A. crouzeti, S. France, PUEL, p. 160, Bull. Soc. ent. France 1904, **n. sp.**
Anophthalmus bugezi, larva, XAMBEU, p. 106, Bull. Soc. ent. France 1904.
A. setniki, Bosnia, REITTER, p. 151, Wien. ent. Zeit. xxiii ; *A. sziladyi*, Hungary, CSIKI, p. 170, Rov. Lapok 1904 : **n. spp.**
Aristodacnus n. n. for *Macroctelus* Chaud., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
Bembidium scudderi, abnormal ind., HAYWARD, p. 14, Psyche xi.
Bipartiti, this named revived for *Scaritini*: taxonomy, phylogeny, chætotaxy, of *Pasimachides* etc., SLOANE, pp. 704-709, P. Linn. Soc. N. S. Wales 1904.
Bothriopterus angustatus, habitat, BRUYANT & DUFOUR, Feuille Natural. xxxiv, p. 219.

- Brachinus mactus*, p. 171, Rhodesia, *umvotianus*, Natal, p. 172, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Brachynillus* **n. g.** near *Brachyus*, *B. varendorffi* **n. sp.**, cavern E. Africa, REITTER, p. 178, Wien. ent. Zeit. xxiii.
- Brosicus declivis*, characters, SEMENOW, p. 301, Rev. Russe Ent. iv.
- Callida nigripes*, *fervida*, Natal, PÉRINGUEY, p. 174, Ann. S. African Mus. iii, **n. spp.**
- Callistomimus placens*, Rhodesia, PÉRINGUEY, p. 186, t. c. **n. sp.**
- Calosoma*, Australian species, SLOANE, p. 700, P. Linn. Soc. N. S. Wales 1904.
- C. dietzii*, California, SCHAEFFER, p. 197, J. N. York Ent. Soc. xii, **n. sp.**
- Carabus*, LAPOUGE continues his phylogeny, the *latus* allies, Bull. Soc. sci. med. Ouest France xiii, pp. 366-380: Varr. tabulated, LAPOUGE, pp. 15 etc., Echange 1904: Notes on Roumanian forms, BORN, pp. 117-120, & HORMUZAKI, pp. 120, 121, Bull. Soc. Bucarest xiii: Various notes in Russian, SEMENOW, pp. 111-113, Rev. Russe Ent. iv; *C. auratus* var. *n. ventruensis*, NICOLAS, p. 84, Echange xx; *C. auratus* var. *n. labittei*, CLÉMENT, p. 245, Bull. Soc. ent. France 1904; *C. morbillosus* var. *n. viridulus*, RAGUSA, p. 49, Natural. Sicil. xvii; *C. alpestris adamellicola* var. *n.*, GANGLBAUER, p. 186, Munchen. Kol. Zeitschr. ii; *C. ulrichi* var. *n. pernix*, CSIKI, p. 147, Rov. Lapok 1904; *C. scheidleri* var. *n. koshanini*, CSIKI, p. 591, Ann. Mus. Hungar. ii: Larvæ of *C. ulrichi*, *catenulatus* etc. cuts, WEBER, pp. 414-418, Allg. Zeitschr. Ent. ix.
- Carpaulum* **n. g.** *Physocrotaphini*, p. 536, *C. inflaticeps*, p. 537, *porosum*, p. 538, **n. spp.**, Queensland, SLOANE, P. Linn. Soc. N. S. Wales xxix.
- Chaetoleistus* **subg. n.** of *Leistus* for *L. relictus* Sem., SEMENOW, p. 119, Rev. Russe Ent. iv.
- Chlœnius ditulus*, p. 184, *pronus*, p. 185, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Clivina*, notes on Australian, with synonymy (not here given), SLOANE, pp. 712-733, P. Linn. Soc. N. S. Wales 1904.
- C. doddi*, p. 715, *cribrifrons*, p. 716, *atridentis*, p. 718, *nigra*, p. 722, *dingo*, *pectonoda*, p. 724, *misella*, p. 727, *pallidiceps*, p. 728, *cylindripennis*, p. 729, *robusta*, p. 731, *obliquicollis*, p. 732, *ovalipennis*, p. 733, Australia, SLOANE, t. c., **n. spp.**
- Colpodes validus*, Madagascar, FAIRMAIRE, p. 129, Bull. Soc. ent. France 1904, **n. sp.**
- Coptoptera indotata*, Rhodesia, PÉRINGUEY, p. 175, Ann. S. African Mus. iii, **n. sp.**
- Coryza*, *Clivina carinifrons* referred to this, SEMENOV, p. 202, Rev. Russe Ent. iv.
- Craspedophorus laticollis*, *merus*, Rhodesia, PÉRINGUEY, p. 187, Ann. S. African Mus. iii, **n. spp.**
- Crepidopterus favrei*, S. India, MAINDRON, p. 264, Bull. Soc. ent. France 1904, **n. sp.**
- Discoptera* **subg. n.** for *Discoptera przewalskii* Sem., SEMENOV, p. 202, Rev. Russe Ent. iv.
- Disphæricus rhodesianus*, S. Africa, PÉRINGUEY, p. 188, Tr. S. African Mus. iii, **n. sp.**
- Dromius quadraticollis*=(*cordicollis* Vorbr.), p. 300, *D. uralensis* and *longicollis*, note, p. 302, SEMENOW, Rev. Russe Ent. 1904, cf. also p. 314, t. c.; *D. ruficollis* var.=(*triangularis* Sem.), SEMENOW, p. 202, Rev. Russe Ent. iv; *D. longulus*, characters, SEMENOV, p. 167, Rev. Russe Ent. iv; *D. cordicollis*, characters, distribution, VORBRINGER, p. 45, Deutsche ent. Zeitschr. 1904.
- D. cribricollis*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii, **n. sp.**

- Dyschirius unicolor beludsha* subsp. n., TSCHITSCHÉRINE, p. 267, Rev. Russe Ent. 1904; *D. obscurus* var. n. *dilatocollis*, p. 32, *impunctipennis* var. n. *levipunctatus*, p. 33, *bonelli* var. n. *grosse-punctatus*, p. 34, *punctatus* var. n. *basalis*, p. 36, FLEISCHER, Vestnik. Klub. Prostějove ii.
- D. scriptifrons*, *hauseri*, Turkestan, *pseudextensus*, Andalusia, p. 42, *irkutensis*, Siberia, p. 45, *heydeni*, Alžir, p. 51, FLEISCHER, t. c.; *D. fleischeri*, S. France and Algeria, DEVILLE, p. 29, Bull. Soc. ent. France 1904 : n. spp.
- Elaphrus jakovlevi*, *angustus* = (*longicollis* Sahlb.), *angusticollis*, notes, SEMENOV, pp. 102–105, 119, 120, Rev. Russe Ent. iv; *E. latipennis*, characters, SEMENOV, p. 124, Horæ Soc. ent. Ross. xxxvii; *E. longicollis* = (*jakovlevi* Sem.), POPPIUS, p. 364, Annuaire Mus. St. Petersb. viii.
- E. trossulus*, Mongolia, p. 21, *tibetanus*, E. Tibet, p. 22, SEMENOV, Rev. Russe Ent. iv, n. spp.
- Eristomus* = (*Eriocypas* Tsch.), SEMENOV, p. 201, Rev. Russe Ent. iv.
- Forcipator* n. n. for *Oxytostomus* Latr., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Galerita*, bombarding, SCHMITT, p. 42, Ent. News Philad. xv.
- Gazanus* n. g. near *Anchomenus*, p. 204, *G. elegans* n. sp., Rhodesia, p. 205, PÉRINGUEY, Ann. S. African Mus. iii.
- Graniger* (*Coscinia*) *rufotestaceus*, Bagdad, PIC, p. 89, Echange xx, n. sp.
- Graphipterus shebanus*, Transvaal, PÉRINGUEY, p. 183, Ann. S. African Mus. iii, n. sp.
- Harpalus davidianus* n. n. for *davidi* Tsch., TSCHITSCHERIN, p. xii, Annuaire Mus. St. Petersb. viii; *H. pexus*, characters, DANIEL, p. 66, Munchen. Kol. Zeitschr. ii.
- Hexagonia venusta*, p. 168, *umtalina angustula*, p. 169, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Hystrihopus velox*, Cape Colony, PÉRINGUEY, p. 174, t. c. n. sp.
- Klepsiphorus angusticollis*, Natal, PÉRINGUEY, p. 175, t. c. n. sp.
- Læmosthenes naniscus* to *Platynus*, PÉRINGUEY, p. 296, t. c.
- Lebia indagacea*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlviii; *L. phantasma*, *simulatoria*, p. 178, *umtalina*, *inedita*, p. 179, *evicta*, p. 180, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : n. spp.
- Lebistina spectabilis*, Transvaal, PÉRINGUEY, p. 181, t. c. n. sp.
- Leistus*; cf. *Chetoleistus*.
- Lionychus letulus*, Cape Colony, PÉRINGUEY, p. 176, Ann. S. African Mus. iii, n. sp.
- Lioscarites* n. n. for *Holcogaster* Chaud., MAINDRON, p. 265, Bull. Soc. ent. France 1904.
- Macrochilus longicollis*, *spectandus*, p. 170, *varians*, p. 171, Rhodesia, PÉRINGUEY, Ann. S. African Mus. iii, n. spp.
- Masoreus australis*, Townsville, SLOANE, p. 535, P. Linn. Soc. N. S. Wales xxix, n. sp.
- Mecodema leviceps*, p. 41, *striatum*, p. 42, *walkeri*, p. 43, New Zealand, BROWN, Ann. Nat. Hist. xiv, n. spp.
- Metallica* = (*Umgenia* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- M. mashunensis*, Rhodesia, PÉRINGUEY, t. c. n. sp.
- Metaxymorphus robustus*, Natal, PÉRINGUEY, p. 174, t. c. n. sp.
- Morio*, revision of Australian, SLOANE, pp. 530–533, P. Linn. Soc. N. S. Wales xxix.
- M. crassipes*, Cairns, id. p. 533, t. c. n. sp.
- Mystromorphus*, characters and taxonomy, SLOANE, p. 704, t. c.
- Nebria atropes*, characters, DANIEL, p. 74, Munchen. Kol. Zeitschr. ii.
- N.* (*Epinebriola* subg. n.), *oxyptera*, Turkestan, DANIEL, p. 76, t. c. n. sp.
- Nebriosoma*, taxonomy, SLOANE, p. 703, P. Linn. Soc. N. S. Wales 1904.

- Notiophilus*, notes on European, DEVILLE, pp. 182, 183, Abeille xxx; *N. reitteri*, note, SEMENOW, p. 300, Rev. Russe Ent. 1904; *N. semenovi* ♂, SEMENOW, p. 313, t. c.
- Notonomus*, synonymical notes, TSCHITSCHÉRIN, p. 229, Rev. Russe Ent. iv.
- Ophonus hospes* and allies, characters and synonymy, DANIEL, pp. 1-15, Munchen. Kol. Zeitschr. i.
- Orthogonius apicalis*, Madagascar, FAIRMAIRE, p. 129, Bull. Soc. ent. France 1904, **n. sp.**
- Pamborus*, characters, table of species, SLOANE, pp. 701-703, P. Linn. Soc. N. S. Wales 1904.
- Penetretus rufipennis* var. n. *semipunctatus*, REITTER, p. 81, Wien. ent. Zeit. xxiii.
- Pentagonica dispar*, Natal, PÉRINGUEY, p. 191, Ann. S. African Mus. iii, **n. sp.**
- Perigona nigriceps* = (*Extromus pusillus* Pér.), PÉRINGUEY, p. 296, t. c.
- P. rufilabris* var. n. *infusca*, SLOANE, p. 534, P. Linn. Soc. N. S. Wales xxix.
- Phlæozetus cribricollis*, *umtalinus*, Rhodesia, PÉRINGUEY, p. 177, Ann. S. African Mus. iii, **n. spp.**
- Platynus serbicus*, S. Servia, CSIKI, p. 148, Rov. Lapok 1904, **n. sp.**, and Ann. Mus. Hungar. ii, p. 593; *P. (Megalonychus) umtalianus*, *P. (Anchomenus) insuetus*, p. 201, *emeritus*, *insolitus*, p. 202, *obsequiosus*, p. 203, *latiusculus*, p. 204, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii: **n. spp.**
- Platysma (Pseudocryobius) aquilonium*, N. Russia, TSCHITSCHÉRIN, p. 125, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Platysphyrus* **n. g.** *Clivinini*, p. 710, *P. tibialis* **n. sp.**, Australia, p. 711, SLOANE, P. Linn. Soc. N. S. Wales 1904.
- Polyhorma commista*, S. Africa, PÉRINGUEY, p. 184, Ann. S. African Mus. iii, **n. sp.**
- Pseudomasareus* **n. g.** for *Cymindis canigoulensis*, DESBROCHERS, p. 163, Frelon xii.
- Pseudophonus terrestris*, characters, DANIEL, p. 67, Munchen. Kol. Zeitschr. ii.
- Scaritini*: table of genera of Palearctic, and of species of *Scarites*, with synonymy and distribution, TSCHITSCHÉRINE, pp. 257-265, Rev. Russe Ent. 1904.
- Scarites saxicola* = (*cyclopius* Fleisch.), Abeille xxx, p. 235; *S. basiplicatus* var. *sequenzi*, p. 29, var. *fleischeri*, p. 30, *bucida* var. n. *bucculentus*, p. 30, FLEISCHER, Vestnik. Klub. Prostejove ii; *S. salinus*, characters, var. n., KOENIG, p. 141, Wien. ent. Zeit. xxiii.
- S. cyclopius*, p. 30, *israelitus*, p. 31, Syria, FLEISCHER, Vestnik. Klub. Prostejove ii, **n. spp.**
- Stomini*, new sub-tribe, TSCHITSCHÉRIN, p. 150, Rev. Russe Ent. iv.
- Stomis*: table of species, SEMENOW, pp. 187-193, Horæ Soc. ent. Ross. xxxvii.
- S. hyrcanus*, N. Persia, TSCHITSCHÉRIN, Rev. Russe Ent. iv; *S. tschitscherini*, p. 152, *danielanus*, p. 153, Transcaucasus, SEMENOV, t. c.: **n. spp.**
- Styphromerus plausibilis*, Rhodesia, PÉRINGUEY, p. 173, Ann. S. African Mus. iii, **n. sp.**
- Tefflus*, KOLBE gives his taxonomy in an extended form, Berlin. ent. Zeitschr. xlix, pp. 117-158.
- T. angustipes* subsp. n. *uvinsanus*, p. 131, *violaceus wituensis* subsp. n., p. 134, KOLBE, t. c.
- Thalassophilus longicornis* = (*Trechus kokujevi* Tsch.), SEMENOV, p. 202, Rev. Russe Ent. iv.
- Thyreopterus angusticollis*, *lugubrinus*, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**

- Tichonia* **n. n.** for *Caletor* Tsch., SEMENOV, p. 201, Rev. Russe Ent. iv.
Trachypachys zetterstedti, localities, synonymy, SEMENOV, p. 37, t. c.
Trechus, *Anophthalmus* etc. and other subgen. discussed, GANGLBAUER, pp. 190–194, Munchen. Kol. Zeitschr. ii; *T. inornatus* **n. n.** for *quadrimaculatus* Fleisch., *T. caucasicola* **n. n.** for *caucasicus* Reitt., TSCHITSCHÉRIN, p. 148, Rev. Russe Ent. iv; *T. orpheus* var. **n. subparallelus**, ABEILLE, p. 199, Bull. Soc. ent. France 1904; *T. baldensis* varr. **n.**, pp. 187–189, *T. longhii* var. **n. wingelmulleri**, l. c., GANGLBAUER, Munchen. Kol. Zeitschr. ii, and HOLDHAUS, t. c. p. 225.
T. (Duvalius) knauthi, Rhætian Alps, GANGLBAUER, p. 190, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) diniensis*, with var. *cautus*, p. 201, *convexicollis*, p. 202, Basses-Alpes, PEYERIMHOFF, Bull. Soc. ent. France 1904; *T. (Anophthalmus) pueli*, Ariège, CHABAUT, p. 212, Bull. Soc. ent. France 1904; *T. (Anophthalmus) vulcanus*, Ariège, ABEILLE, p. 198, Bull. Soc. ent. France 1904; *T. (Anophthalmus) holdhausi*, Venetian Alps, GANGLBAUER, p. 224, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) marice*, Dobratsch, SCHATZMAYR, p. 210, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) vranensis*, Herzegovina, BREIT, p. 28, Munchen. Kol. Zeitschr. ii; *T. (Anophthalmus) velebiticus*, Croatia, GANGLBAUER, p. 350, Munchen. Kol. Zeitschr. ii; *T. concinnus*, Caucasus, TSCHITSCHÉRIN, p. 148, Rev. Russe Ent. iv : **n. spp.**
Tribax bibersteini var. **n. maljushenkoi**, KOENIG, p. 140, Wien. ent. Zeit. xxiii.
Trichosternus hudsoni, New Zealand, BROWN, Ann. Nat. Hist. xiv, p. 44, **n. sp.**
Umgenia; cf. *Metallica*.
Xenitenus natalicus, Natal, PÉRINGUEY, p. 176, Ann. S. African Mus. iii, **n. sp.**
Zabrus, monograph of Spanish and Portuguese, UHAGON, pp. 363–436, Mem. Soc. espan. ii.
Z. vasconicus, Spain, p. 393, *humeralis*, p. 424, Portugal, UHAGON, t. c. **n. spp.**
Zeloticus umtalianus, Rhodesia, PÉRINGUEY, p. 185, Ann. S. African Mus. iii, **n. sp.**

HALIPLIDÆ.

- Brychius rossicus* and *cristatus*, note, SEMENOV, pp. 303, 314, Rev. Russe Ent. 1904.
Haliplus flavicollis var. **n. pallida** (?*H. fulvicollis*=*jakolevi*); *H. fluvialis*=(*schaumi* Solsky), SEMENOV, p. 202, Rev. Russe Ent. iv; *H. variegatus*=(*maculatus* Motsch.), SEMENOV, p. 216, t. c.; *H. transvolgensis* and *dalmatinus* queried; SEMENOV, p. 314, t. c.
H. transvolgensis, Saratov, SEMENOV, p. 216, t. c. **n. sp.**

DYTISCIDÆ.

[Cf. ABEILLE (3), GANGLBAUER (582), RÉGIMBART (1124, 1125).]

- Agabus labiatus* Brahm=(*femoralis* Payk.), BEDEL, 234, Abeille xxx.
Copelatus internus, Fernando Po, RÉGIMBART, p. 66, Ann. Mus. Genova xli;
C. geayi, Guiana, RÉGIMBART, p. 225, Bull. Mus. Paris 1904 : **n. spp.**
Hydroporus aubei varr., GANGLBAUER, p. 354, Munchen. Kol. Zeitschr. ii.
H. kocae, Slavonia, GANGLBAUER, p. 352, t. c. : **n. sp.**
Hyphydrus ovatus var., W. E. SHARP, p. 43, Ent. Mag. xl.
H. caviceps, Congo, RÉGIMBART, p. 64, Ann. Mus. Genova xli, **n. sp.**
Laccophilus virens Brahm=(*obscurus* Panz.), BEDEL, p. 235, Abeille xxx.
L. flaviventris, Guiana, RÉGIMBART, p. 224, Bull. Mus. Paris 1904, **n. sp.**

Siettitia **n. g.** near *Hydroporus*, p. 226, for *S. balsetensis* **n. sp.**, Var, in a deep well, p. 227, ABEILLE, Bull. Soc. ent. France 1904.

GYRINIDÆ.

Dineutes subserratus, Fernando Po, RÉGIMBART, p. 67, Ann. Mus. Genova xli, **n. sp.**

Gyrites geayi, Guiana, RÉGIMBART, p. 226, Bull. Mus. Paris 1904, **n. sp.**

HYDROPHILIDÆ.

[Cf. BROUN (185), GANGLBAUER (580).]

The *Hydrophilidæ* of Europe, GANGLBAUER, pp. 141–286, Käf. Mitteleur. iv.

Dicyrtocercyon **subg. n.**, *C. ustulatus* Preyssl, GANGLBAUER, p. 276, t. c.

Hydræna, notes on French, DEVILLE, p. 187, Abeille xxx.

Limnebius paganettii, Dalmatia, GANGLBAUER, p. 261, Käf. Mitteleur. iv, **n. sp.**

Paraliocercyon **subg. n.**, *C. depressum* etc., GANGLBAUER, p. 276, t. c.

Sphæridium scarabæoides in N. America, HOUGHTON, p. 310, Ent. News Philad. xv.

Thomosis **n. g.** near *Hydrostygnum*, p. 273, for *T. guanicola* **n. sp.**, Bounty isld., BROUN, Ann. Nat. Hist. xiv.

STAPHYLINIDÆ.

[Cf. BERNHAUER (107–109), BREIT (174), BROUN (184), BRUES (188), CAMERON (221), CASEY (248), FAUCONNET & VITURAT (480), FAUVEL (483–485, 487–491), GANGLBAUER (581–583), KLIMA (820), LEA (864), LUZE (895, 896), PENECKE (1016), PÉRINGUEY (1028), POPPIUS (1093, 1094, 1096), SCHATZMAYR (1223), WASMANN (1484A, 1486).]

The second part of Bernhauer's Palæarctic *Staphylinidæ*, published in 1902, is recorded only this year.

Ænictonia anommatophila, *kohli*, Congo, WASMANN, p. 637, Zool. Jahrb. Suppl. vii; *A. raffrayi*, Usambara, FAUVEL, p. 285, Rev. Ent. franc. 1904 : **n. spp.**

Agerodes germaini, *pulcher*, p. 225, *semiviolaceus*, p. 226, *capitalis*, p. 227, *denticulatus*, p. 228, *frater*, *quadriceps*, p. 229, S. America, BERNHAUER, Stettin. Ent. Zeit. lxxv, **n. spp.**

Aleochara (Heterochara) glasunovi, Centr. Asia, LUZE, p. 113, Horæ Soc. ent. Ross. xxxvii; *A. andrewesi*, p. 66, *viatica*, p. 67, India, FAUVEL, Rev. Ent. franc. xxiii; *A. parvicollis*, Peru, BERNHAUER, p. 240, Stettin. Ent. Zeit. lxxv : **n. spp.**

Alianta phlæoporina, Sinai, FAUVEL, p. 72, Rev. Ent. franc. xxiii, **n. sp.**

Amarochara ocaleoides, p. 166, *korbi*, p. 167, Asia Minor, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, **n. spp.**

Anceus cordicollis, Madagascar, FAUVEL, p. 296, Rev. Ent. franc. 1904, **n. sp.**

Anisopsis **n. g.**, near *Oxytelus*, *flexuosa*, Zambesi, p. 108, *carinata*, Zanzibar, p. 109, **n. spp.**, FAUVEL, t. c.

Anommatophilus **n. g.** near *Pygostenus*, p. 642, *A. kohli*, pl. xxxii, fig. 13, *minor*, *tenellus*, **n. spp.**, Congo, p. 643, WASMANN, Zool. Jahrb. Suppl. vii.

Anommatoxenus **n. g.** near *Pygostenus*, p. 656, *A. clypeatus*, **n. sp.**, Congo, p. 657, pl. xxxii, fig. 16, WASMANN, t. c.

Anthobium sikkimi, Darjeeling, FAUVEL, p. 88, Rev. Ent. franc. xxiii, **n. sp.**

- Apatetica semiviolacea*, Java, *rotundicollis*, Khasia hills, p. 85, *sparsicollis*, Lombok, *laevicollis*, Tonkin, p. 86, FAUVEL, t. c. **n. spp.**
- Astenus melanurus* var. *subnotatus*, FAUVEL, p. 51, t. c.
- Astilbus incola*, India, FAUVEL, p. 63, t. c. **n. sp.**
- Atemeles pratensoides*, Luxemburg, WASMANN, p. 10, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Atheta bertolinii*, Italy, PORTA, Riv. Col. ital. ii, ?p. 130 [not seen by Recorder]; *A. (Hydrosmeeta) orientis*, Sinai, FAUVEL, p. 71, Rev. Ent. franc. xxiii; *A. (Aloconota) frontalis*, Central Asia, LUZE, p. 108, Horæ Soc. ent. Ross. xxxvii; *A. nilgiriensis*, India, FAUVEL, p. 62, Rev. Ent. franc. xxiii; *A. pubicollis*, Australia, p. 238, *dohrni*, Ecuador, p. 239, BERNHAUER, Stettin Ent. Zeit. lxxv : **n. spp.**
- Baptopoda* subg. **n.** of *Oxyptoda*, BERNHAUER, p. 47, Verh. Ges. Wien 1902, Beiheft.
- Belonuchus quadriceps*, p. 287, *holisinus*, p. 288, Usambara, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Bledius glasunovi*, Centr. Asia, LUZE, p. 87, Horæ Soc. ent. Ross. xxxvii; *B. distans*, p. 304, *perrieri*, *lugubris*, p. 305, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *B. bellicosus*, Sumatra, *conicicollis*, Tonkin, p. 111, *arenicola*, Malabar, *helferi*, Burma, p. 112; FAUVEL, t. c. : **n. spp.**
- Bolbophites* **n. g.** near *Ophites*, p. 278, *pustulosus*, pl. i, fig. 2, *aspericeps*, **n. spp.**, Brazil, p. 279, FAUVEL, t. c.
- Bolitochara semiaspera*, India, FAUVEL, p. 65, t. c. **n. sp.**
- Bombylodes* **n. g.** for *Bombylius* Fauv., FAUVEL, p. 43, t. c.
- Boopinus* subg. **n.** of *Trogophlæus*, for *T. memnonius* etc.; KLIMA, p. 56, Munchen. Kol. Zeitschr. ii.
- Boreaphilus sahlbergi*, E. Siberia, POPPIUS, p. 106, Medd. Soc. Faun. Fenn. 1902/03, **n. sp.**
- Bryothinusa* **n. g.** near *Thinusa*, p. 312, *B. catalinae* **n. sp.**, California, p. 313, CASEY, Canad. Ent. xxxvi.
- Cænonica æthiopica*, Usambara, FAUVEL, p. 284, Rev. Ent. franc. 1904, **n. sp.**
- Coprophilus striatipennis* Epp., valid, LUZE, p. 80, Horæ Soc. ent. Ross. xxxvii.
- C. (Zonoptilus) reitteri*, Centr. Asia, LUZE, p. 69, Munchen. Kol. Zeitschr. ii; *C. bimaculatus*, Centr. Asia, LUZE, p. 79, Horæ Soc. ent. Ross. xxxvii; *C. alticola*, Himalaya, FAUVEL, p. 93, Rev. Ent. franc. 1904 : **n. spp.**
- Coryphium gredleri* var. **n.** *dilutipes*, GANGLBAUER, p. 197, Munchen. Kol. Zeitschr. ii.
- C. parvulum*, E. Siberia, POPPIUS, p. 107, Medd. Soc. Faun. Fenn. 1902/03, **n. sp.**
- Crymus* **n. g.** near *Planeustomus*, p. 92, *C. antarcticus* **n. sp.**, New South Georgia, p. 93, FAUVEL, Rev. Ent. franc. xxiii.
- Cryptobium extraneum*, Bengal, FAUVEL, p. 55, t. c.; *C. myrmecocephalum*, Clarence Riv., pl. iv, fig. 3, p. 71, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Delopsis microphthalmia*, Java, FAUVEL, p. 95, Rev. Ent. franc. 1904, **n. sp.**
- Demera kohli*, *nitida*, Congo, WASMANN, p. 630, Zool. Jahrb. Suppl. vii, **n. spp.**
- Deropoda* subg. **n.** of *Oxyptoda*, BERNHAUER, p. 48, Verh. Ges. Wien lii, Beiheft.
- Dicaæ ventralis*, W. Australia, p. 73, *ruficollis*, N. S. W., p. 74, with var. *nigriventris*, p. 75, LEA, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Diglossa peyerimhoffi*, p. 73, *cameroni*, p. 74, Red Sea, FAUVEL, Rev. Ent. franc. xxiii; *D. testacea*, *subtilissima*, Perim, CAMERON, p. 157, Ent. Mag. xl : **n. spp.**
- Dinusu æthiopica*, W. Africa, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, p. 15, **n. sp.**

- Discoxenus* n. g. near *Doryloxenus*, p. 655, *D. lepisma*, *assmuthi*, India, p. 66, n. spp., WASMANN, Zool. Jahrb. Suppl. vii.
- Dorylocerus* n. g. near *Dorylobius*, p. 627, for *D. fossulatus* n. sp., Congo, p. 628, WASMANN, t. c.
- Dorylogaster* n. g. *Aleocharinorum*, p. 625, for *D. longipes* n. sp., p. 626, pl. xxx, fig. 4, West Africa, with *Anomma*, WASMANN, t. c.
- Dorylomimus* n. g. near *Mimeciton*, p. 620, for *D. kohli* n. sp., Congo, p. 622, WASMANN, t. c.
- Dorylonia* n. g. near *Myrmedonia*, *D. laticeps*, pl. xxxi, fig. 8, n. sp., Congo, WASMANN, p. 635, t. c.
- Dorylonilla* n. g. near *Notothecata*, *D. spinipennis*, pl. xxx, fig. 6, n. sp., Congo, WASMANN, p. 631, t. c.
- Dorylophila* n. g. near *Aleochara*, p. 632, *D. rotundicollis* n. sp., Congo, p. 633, pl. xxxi, fig. 7; WASMANN, t. c.
- Dorylopora* n. g. near *Dorylobius*, p. 628, for *D. costata*, pl. xxx, fig. 5, *kohli*, n. spp., Congo, p. 629, WASMANN, t. c.
- Doryloxenus annulatus*, p. 653, *eques*, *kohli*, *hirsutus*, p. 654, Africa, *transfuga*, *termitophilus*, p. 655, WASMANN, t. c. : n. spp.
- Dromeciton* n. g. near *Tetradonia*, p. 282, *wagneri* n. sp., Brazil, p. 283, pl. i, fig. 4, FAUVEL, Rev. Ent. franc. 1904.
- Eccoptyglossa* n. g. near *Myrmecopora*, p. 105, *E. obscura* n. sp., Central Asia, p. 106, LUZE, Horæ Soc. ent. Ross. xxxviii.
- Ecitonidia* and *Eciton*, relations, BRUES, p. 21, Psyche.
- Ecitopora nitidiventris*, Texas, BRUES, p. 250, Ent. News Philad. xv, n. sp.
- Eleusis planicollis* Macl. = (*australis* Fauv.), LEA, p. 77, P. Linn. Soc. N. S. Wales xxix.
- Eleusis conradii*, *kolbei*, Usambara, FAUVEL, p. 292, Rev. Ent. franc. 1904; *E. perrieri*, *apicalis*, p. 298, *heterodera*, *boops*, p. 299, *hydrocephala*, p. 300, Madagascar, FAUVEL, t. c.; *E. rufiventris*, p. 81, *conifrons*, Sumatra, *warburgi*, Celebes, p. 82, *disculis*, Sumatra, *plagiata*, *rotundiceps*, Sikkim, p. 83, *quadridens*, Perak, *lunigera*, Malasia, p. 84, FAUVEL, t. c.; *E. spectabilis*, p. 4, *propinqua*, p. 5, *brachyptera*, *rectangulum*, p. 6, *bicarinata*, p. 7, *bisulcata*, p. 8, Madagascar, *mutica*, Gaboon, p. 9, BERNHAUER, Verh. Ges. Wien liv; *E. cephalotes*, Mexico, BERNHAUER, p. 218, Stettin Ent. Zeit. lxxv : n. spp.
- Erchomus aluticollis*, New Guinea, FAUVEL, p. 295, Rev. Ent. franc. 1904, n. sp.
- Eulissus silvaticus*, p. 230, Madagascar, *purpuripennis*, Shanghai, p. 231, BERNHAUER, Stettin Ent. Zeit. lxxv, n. spp.
- Eunonia* n. g. *Omalini*, p. 313, *E. keeniana* n. sp., Brit. Columbia, p. 314, CASEY, Canad. Ent. xxxvi.
- Eupsorus* n. g. ? near *Omalium*, p. 45, for *E. costatus* n. sp., New Zealand, p. 46, BROWN, Ann. Nat. Hist. xiv.
- Euryalea mongolica*, Shanghai, BERNHAUER, p. 132, Verh. Ges. Wien 1902, Beiheft, n. sp.
- Falagria nilgiriensis*, India, FAUVEL, p. 62, Rev. Ent. franc. xxiii, n. sp.
- Geodromicus punctulatus*, p. 77, *ovalis*, p. 78, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, n. spp.
- Geostiba aurogemmata*, Algeria, FAUVEL, p. 75, Rev. Ent. franc. xxiii, n. sp.
- Haploderus speculiventris*, Java, FAUVEL, p. 97, t. c. n. sp.
- Holusus tenuicornis*, Gaboon, p. 13, *plicatus*, p. 14, *elegans*, *sumatrensis*, p. 15, Sumatra, BERNHAUER, Verh. Ges. Wien liv; *H. sinuatus*, Mentawai, BERNHAUER, p. 217, Stettin Ent. Zeit. lxxv; *H. parcestriatus*, Java, *pennifer*, Annam, p. 76, *brevipennis*, *insularis*, Malasia, p. 77, *aberrans*, Ceylon, p. 78, FAUVEL, Rev. Ent. franc. xxiii : n. spp.
- Holotrochus coriaceus*, p. 306, *nigrita*, *nitescens*, p. 307, *marginicollis*, *specularis*, p. 308, *fairmairei*, p. 309, Madagascar, FAUVEL, t. c. n. sp.
- Homalium* (*Phloeostiba*) *usambaræ*, Africa, FAUVEL, p. 291, t. c.; *H. hova*,

- p. 300, *costipenne*, p. 301, Madagascar, FAUVEL, t. c.; *H. sulcicolle*, *chlorizans*, *obesum*, p. 89, *rude*, p. 90, Sumatra, FAUVEL, t. c. : **n. spp.**
- Homalota crenulata*, India, FAUVEL, p. 65, t. c. **n. sp.**
- Hoplandria mirabilis*, Peru, BERNHAUER, p. 237, Stettin Ent. Zeit. lxxv, **n. sp.**
- Hoplitodes n. g.* p. 109, *echidne*, **n. sp.**, Natal, p. 110, FAUVEL, Rev. Ent. franc. 1904.
- Lathrobium (Glyptomerus) wingelmulleri*, Adamello-Alps, BREIT, p. 29, Munchen. Kol. Zeitschr. ii; *L. sinaicum*, Sinai, FAUVEL, p. 71, Rev. Ent. franc. xxiii : **n. spp.**
- Leistotrophus africanus*, Cameroons, BERNHAUER, p. 236, Stettin Ent. Zeit. lxxv, **n. sp.**
- Leptacinus apicipennis*, St. Thomas, BERNHAUER, p. 234, t. c. **n. sp.**
- Leptusa (Typhlopasilia) pinkeri*, Mt. Adamello, GANGLBAUER, p. 196, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Lesteva turkestanica*, Seravshan, LUZE, p. 76, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Lispinus usambaræ*, *insignicollis*, Usambara, FAUVEL, p. 293, Rev. ent. franc. 1904; *L. varians*, p. 296, *agnatus*, p. 297, *obscurellus*, p. 298, Madagascar, FAUVEL, t. c.; *L. macropterus*, Celebes, p. 78, *validicornis*, Queensland, *sulcatus*, New Guinea, p. 79, *rugipennis*, *acicularis*, *quadrinotatus*, p. 80, Java, *binotatus*, New Guinea, p. 81, FAUVEL, t. c.; *L. pubiventris*, Gaboon, p. 10, *specularis*, Nias isld., p. 11, *curticollis*, Tonkin, *elongatus*, Sumatra, p. 12, BERNHAUER, Verh. Ges. Wien liv : **n. spp.**
- Maseochara indica*, Nilgiri hills, *javana*, Borneo, etc., FAUVEL, p. 66, Rev. Ent. franc. xxiii, **n. spp.**
- Maurachelia* subg. **n.** of *Oxyopoda*, BERNHAUER, p. 48, Verh. Ges. Wien 1902, Beiheft.
- Medon mimeticus*, Madagascar, BERNHAUER, p. 224, Stettin Ent. Zeit. lxxv, **n. sp.**
- Megacronus lineipennis*, India, FAUVEL, p. 60, Rev. Ent. franc. xxiii, **n. sp.**
- Megalops hova*, *bifenestratus*, p. 309, *cribriceps*, p. 310, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *M. brevipennis*, Brazil, BERNHAUER, p. 222, Stettin Ent. Zeit. lxxv : **n. spp.**
- Megarathrus prosseni*, Dobratsch, SCHATZMAYR, p. 212, Munchen. Kol. Zeitschr. ii; *M. bimaculatus*, Ceylon, *basicornis*, Sikkim, FAUVEL, p. 87, Rev. Ent. franc. xxiii : **n. spp.**
- Microglossa rugipennis*, Seravshan, LUZE, p. 114, Horæ Soc. ent. Ross. xxxvii, **n. sp.**
- Mimophites n. g.* near *Ophites*, p. 280, *bouvieri*, pl. i, fig. 3, *laticeps n. spp.*, Brazil, p. 281, FAUVEL, Rev. Ent. franc. 1904.
- Mitomorphus obsoletus*, India, FAUVEL, p. 56, t. c. **n. sp.**
- Mycetoporus sibiricus*, E. Siberia, POPPIUS, p. 1, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Myrmedonia kohli*, *pedisequa*, Congo, WASMANN, p. 634, Zool. Jahrb. Suppl. vii; *M. termitobia*, p. 206, *termitophila*, p. 207, *compransor*, p. 208, *simplex*, *uncinata*, p. 209, *procar*, p. 210, *puncticollis*, p. 211 *mima*, p. 212, *capicola*, *gentilis*, p. 213, *jucunda*, *gravidula*, p. 214, *illotula*, p. 215, *hirtella*, *conifera*, p. 216, *constrictata*, *anthracina*, p. 217, *gracilicornis*, p. 218, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
- Ocalea*, cf. *Sorecocephala*.
- Ocyopus similis*, variation of wings, MÜLLER, p. 171, var. *n. semialatus*, p. 172, Wien. ent. Zeit. xxiii.
- Ocyusa hibernica*, Rye, note, NEWBERY, p. 251, Ent. Mag. xl; *O. laticollis* Thoms. = (*hibernica* Rye), BERNHAUER, p. 140, Verh. Ges. Wien 1902, Beiheft.

- O. araxis*, Caucasus, p. 139, *fortepunctata*, Turkestan, p. 145, *caucasica*, Caucasus, p. 147, *O. (Parocyusa* subg. n.) *holdhausi*, Carinthia, p. 149, BERNHAUER, t. c. **n. spp.**
- Ædichirus ventralis*, *rufitarsis*, p. 318, *kolbei*, p. 319, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *Æ. tricolor*, Australia and Tasmania, p. 61, pl. iv, fig. 1, *terminalis*, N. W. Australia, p. 62, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Omalium nitidicolle*, p. 108, *obscuricorne*, p. 110, Lapland, POPPIUS, Medd. Soc. Faun. Fenn. 1902/03; *O. arenarium*, Cape Good Hope, BERNHAUER, p. 16, Verh. Ges. Wien liv : **n. spp.**
- Osorius sparsior*, Usambara, FAUVEL, p. 291, Rev. Ent. franc. 1904; *O. alutaceus*, Madagascar, *truncorum*, Zanzibar, p. 17, *eppelsheimi*, Mentawai, p. 18, *eggersi*, St. Thomas, p. 19, BERNHAUER, Verh. Ges. Wien liv; *O. strangulatus*, India, FAUVEL, p. 47, Rev. Ent. franc. xxiii : **n. spp.**
- Oxyopoda arabs*, Sinai, FAUVEL, p. 72, t. c.; *O. asiatica*, Turkestan, p. 74, *skalitzkyi*, Europe, p. 75, *pubescens*, Italy, p. 76, *doderoi*, Europe, p. 78, *O. (Deropoda* subg. n.) *cingulum*, Syria, p. 87, *caucasica*, Caucasus, *nova*, S. Europe, p. 94, *O. (Maurachelia* subg. n.) *pilosicollis*, Europe, p. 97, *antennata*, Turkey, p. 98, *schusteri*, Balkans and East Siberia, p. 104, *incognita*, Bucharest, p. 107, *fortepunctata*, Caucasus, p. 108, *meridionalis*, Greece and Syria, p. 114, *fauveli*, E. Siberia, p. 115, *minutissima*, S. Europe, p. 122, *longicollis*, Crimea, p. 123, BERNHAUER, Verh. Ges. Wien 1902, Beiheft : **n. spp.**
- Oxytelopsis madecassa* Tananarive, *genalis*, Perak, FAUVEL, p. 96, Rev. Ent. franc. 1904, **n. spp.**
- Oxytelus africanus* n. n. for *flavipennis* Epp. nec Kr., LUZE, p. 83, Horæ Soc. ent. Ross. xxxvii.
- O. excellens*, p. 81, *robusticornis*, p. 82, *luridipennis*, p. 84, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii; *O. lobatus*, p. 303, *anticus*, p. 304, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *O. bubalus*, Java, p. 97, *atriceps*, p. 98, Celebes, *megacephalus*, India, *gigantulus*, p. 99, *migrator*, Siam, *ruptus*, Java, p. 100, *heterophthalmus*, N. S. Wales, *dilutipennis*, W. Africa, p. 101, *planus*, Abyssinia, *nitidipennis*, Madagascar, p. 103, *claviger*, Abyssinia, *incisicollis*, E. Africa, p. 104, *bicolor*, Madagascar, Gaboon, p. 104, *sculptiventris*, Madagascar, p. 105, *crassus*, *speculum*, p. 106, *dentifrons*, S. America, *scorpio*, St. Domingo, p. 107, FAUVEL, t. c.; *O. curtus*, p. 219, *rugicollis*, p. 220, Australia, *opacinus*, Brazil, p. 221, BERNHAUER, Stettin Ent. Zeit. lxxv : **n. spp.**
- Pachycorinus ganglbaueri*, Madagascar, BERNHAUER, p. 234, t. c. **n. sp.**
- Pæderus usambaræ*, Africa, FAUVEL, p. 290, Rev. Ent. franc. 1904; *P. andreweesi*, p. 53, *gratiosus*, p. 54, India, FAUVEL, t. c.; *P. trimerus*, N. Guinea, FAUVEL, p. 294, Rev. Ent. franc. 1904 : **n. spp.**
- Palaminus suturalis*, p. 319, *madecassa*, *pennifer*, *nossibianus*, p. 320, *allocerus*, *brunneus*, *circumflexus*, p. 321, Madagascar, FAUVEL, t. c.; *P. simoni*, India, FAUVEL, p. 50, t. c. : **n. spp.**
- Parosorius* **n. g.** for *Anceus foersteri*, BERNHAUER, p. 222, Stettin Ent. Zeit. lxxv.
- Parocalea* **n. g.** for *Ilyobates baicalica* Eppelsh., BERNHAUER, p. 169, Verh. Ges. Wien 1902 Beiheft.
- Parocyusa* **subg. n.** cf. *Ocyusa*.
- Philonthus tantulus*, p. 94, *indubius*, p. 95, *elegantulus*, p. 97, *P. (Gabrius) insignis*, p. 98, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, **n. spp.**
- Phlæopora opaca*, Europe, p. 194, *secreta*, Caspian, p. 196, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, **n. spp.**
- Phyllodrepa (Dropephylla) gobanzi*, Dalmatia, GANGLBAUER, p. 650, Verh. Ges. Wien liv, **n. sp.**

- Pinophilus piceus*, India, FAUVEL, p. 51, Rev. Ent. franc. xxiii; *P. eppelsheimi*, Sumatra, BERNHAUER, p. 223, Stettin Ent. Zeit. lxxv : **n. spp.**
- Placusa simulans*, Usambara, FAUVEL, p. 286, Rev. Ent. franc. 1904, **n. sp.**
- Planeustomus indicus*, Burma, FAUVEL, p. 91, t. c. **n. sp.**
- Platylola simplex*, Gaboon, BERNHAUER, Verh. Ges. Wien 1902, Beiheft, p. 41, **n. sp.**
- Platyprosopus niloticus*, Abyssinia, FAUVEL, p. 275, Rev. Ent. franc. 1904, **n. sp.**
- Platystethus spinicornis*, p. 85, *flavipennis*, p. 86, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii, **n. spp.**
- Polychelus* **n. g.** *Omalini*, p. 74, *P. aneipennis* **n. sp.**, Centr. Asia, p. 75, LUZE, t. c.
- Psilotrichus* **n. g.** near *Ancyrophorus*, p. 69, *P. elegans* **n. sp.**, Turkestan, p. 70, LUZE, Munchen. Kol. Zeitschr. ii.
- Pygostenus pusillus*, p. 646, *bicolor*, *laevicollis*, p. 647, *fauveli*, *splendidus*, *lute*, *pubescens*, p. 648, *setulosus*, *kohli*, *longicornis*, *alutaceus*, p. 649, Africa, WASMANN, Zool. Jahrb. Suppl. vii, **n. spp.**
- Quediis luridipennis* MacL.=(*semiviolaceus* Blackb.), LEA, p. 65, P. Linn. Soc. N. S. Wales xxix.
- Q.* (*Microsaurus*) *kraussi*, Herzegowina, PENECKE, p. 135, Wien. ent. Zeit. xxiii; *Q.* (*Ediquus*) *solskyi*, p. 99, *rufilabris*, p. 100, *Q.* (*Microsaurus*) *fusicornis*, p. 101, *Q.* (*Sauridus*) *imitator*, p. 102, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii : **n. spp.**
- Scopæus triangularis*, Seravschan, LUZE, p. 90, t. c. **n. sp.**
- Scytoglossa* **n. g.** *Myrmedoniini*, p. 109, *S. delicata*, **n. sp.**, Seravschan, p. 110, LUZE, t. c.
- Soreocephala* **subg. n.** for *Ocalea reitteri*; BERNHAUER, p. 159, Verh. Ges. Wien 1902, Beiheft.
- Staphylinus* (*Ocypus*) *langei*, Congo, BERNHAUER, p. 235, Stettin Ent. Zeit. lxxv; *S.* (*Trichoderma*) *glusunovi*, p. 92, *S.* (*Tusgius*) *transversiceps*, p. 93, Centr. Asia, LUZE, Horæ Soc. ent. Ross. xxxvii; *S. suspectus*, India, FAUVEL, p. 57, Rev. Ent. franc. xxiii : **n. spp.**
- Stenus parilis*, Centr. Asia, LUZE, p. 88, Horæ Soc. ent. Ross. xxxvii; *S. protector*, *irroreus*, p. 311, *uniformis*, *volvulus*, p. 312, *obconicus*, *mirus*, p. 313, *alluaudi*, *sicardi*, p. 314, *goudoti*, *dieganus*, p. 315, *chloropterus*, *pluripunctus*, *creberrimus*, p. 316, *troile*, *delphinus*, p. 317, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *S. belli*, p. 47, *ventricosus*, p. 48, *andrevesi*, *consors*, *millepunctus*, p. 49, India, FAUVEL, t. c. : **n. spp.**
- Stilicoderus umbratus*, India, FAUVEL, p. 52, t. c. **n. sp.**
- Stilicus quadrimaculatus*, Usambara, FAUVEL, p. 289, t. c.; *S. anommatophilus*, Congo, WASMANN, p. 658, Zool. Jahrb. Suppl. vii : **n. spp.**
- Suniopsis politus*, pl. iv, fig. 2, W. Australia, LEA, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Sunius lithocharoides* var. **n.** *quadrimaculatus*, LUZE, p. 90, Horæ Soc. ent. Ross. xxxvii.
- S. gracilicornis*, Seravschan, LUZE, p. 89, t. c.; *S. apiciflavus*, p. 68, *trilineatus*, p. 69, *brevicollis*, pl. iv, fig. 13, p. 70, Australia, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Sympolemon tiro*, Congo, WASMANN, pl. xxxii, fig. 12, p. 641, Zool. Jahrb. Suppl. vii, **n. sp.**
- Tachinus tundræ*, p. 1, *jacuticus*, p. 2, *ochoticus*, p. 5, East Siberia, POPPIUS, Ofv. Finska Forh. xlvii, No. 13; *T. splendens*, Seravschan, LUZE, p. 103, Horæ Soc. ent. Ross. xxxvii : **n. spp.**
- Tachyporus gracilicornis*, Seravschan, LUZE, p. 104, t. c. **n. sp.**
- Tetradelus* **n. g.**, new tribe near *Homaliini*, p. 90, *T. trigonuroides* **n. sp.**, Sikkim, p. 91, FAUVEL, Rev. Ent. franc. xxiii.

- Trilobitideus paradoxus*, Port Elizabeth, p. 619, *insignis*, Congo, p. 620, Wasmann, Zool. Jahrb. Suppl. vii, **n. spp.**
- Trogophlæus*, revision of palæarctic, **subg. n.** cf. *Boopinus*, KLIMA, pp. 43–66, Munchen. Kol. Zeitschr. ii.
- T. bernhaueri*, Irkutsk, p. 50, *reitteri*, Corfu, p. 57, *heydeni*, Turkestan, p. 59, KLIMA, t. c.; *T. alluandi*, *dieganus*, p. 302, *malgaceus*, *boops*, p. 303, Madagascar, FAUVEL, Rev. Ent. franc. 1904; *T. (Thinodromus) brevicornis*, Seravschan, LUZE, p. 80, Horæ Soc. ent. Ross. xxxvii; *T. fuscipalpis*, Ceylon, *lepidicornis*, Celebes, FAUVEL, p. 94, Rev. Ent. franc. 1904; *T. pustulatus*, p. 20, *socius*, Annam, *brasiliensis*, p. 21, *fortepunctatus*, p. 22, Brazil, *caseyi*, N. America, p. 23, *varicornis*, Grenada, p. 24, BERNHAUER, Verh. Ges. Wien liv, **n. spp.**
- Xantholinus olliffi*, valid, characters, LEA, p. 66, P. Linn. Soc. N. S. Wales xxix.
- X. (Nudobius) pictipennis*, Africa, FAUVEL, p. 289, Rev. Ent. franc. 1904; *X. insularis*, Madagascar, p. 232, *bilimeki*, Mexico, p. 233, BERNHAUER, Stettin Ent. Zeit. lxxv; *X. cinctus*, India, FAUVEL, p. 56, Rev. Ent. franc. xxiii : **n. spp.**
- Xerophygus ocularis*, Sumatra, FAUVEL, p. 95, t. c. **n. sp.**
- Zyras forticornis*, *hastatus*, India, FAUVEL, p. 64, t. c.; *Z. plasoni*, Australia, BERNHAUER, p. 240, Stettin Ent. Zeit. lxxv : **n. spp.**

PSELAPHIDÆ.

[Cf. BROUN (184), DODERO (396, 397), FAUCONNET & VITURAT (480), GANGLBAUER (581), HOLDHAUS (695), MÜLLER (972), NORMAND (982), PEYERIMHOFF (1042, 1043), PIC (1071, 1077), RAFFRAY (1114), REITTER (1147), SCHATZMAYR (1223), Wasmann (1485).]

RAFFRAY gives a catalogue and genera of the family, as well as a large number of new species; of the 18 tribes 5 are new, and the name *Bryaxini* gives place to *Brachyglutini*. The synonymy is not given by the Recorder below except when new nomenclature is involved. Ann. Soc. ent. France 1903 and 1904.

Termitophilous *Pselaphidæ*, Wasmann, pp. 3–5, Jägerskiöld exp., No. 13. The sexual characters of *Bythinus*, DODERO, pp. 466–468, Ann. Mus. Genova xli.

Achillia convexiceps, p. 135, *picea*, *cordicollis*, p. 136, *clavata*, *quadratriceps*, p. 137, *latifrons*, *blanchardi*, p. 138, *elfridæ*, *brevicornis*, p. 139, Chile, RAFFRAY, Ann. Soc. ent. France 1905, **n. spp.**

Adiastulus **n. g.** for *Oxarthrius ophthalmicus*, RAFFRAY, p. 638, Ann. Soc. ent. France 1904.

Amauronyx barnevillei=(*Euplectus guillebeaudi* Xamb.), NORMAND, p. 200, Bull. Soc. ent. France 1900.

A. bedeli, Tunis, NORMAND, p. 213, Abeille xxx, **n. sp.**

Amaurops pinkeri, Mt. Adamello, GANGLBAUER, p. 195, Munchen. Kol. Zeitschr. ii, **n. sp.**

Anasis impunctata, Sumatra, RAFFRAY, p. 178, Ann. Soc. ent. France 1904, **n. sp.**

Anasopsis **n. g.** for New Caledonian *Anasis*, RAFFRAY, p. 179, t. c.

Ancystrocerus carinatus, Sumatra, RAFFRAY, p. 383, t. c. **n. sp.**

Apharina nodula, p. 311, *armata*, p. 312, Sumatra, RAFFRAY, t. c. **n. spp.**

Aploderina **n. g.** near *Hamotus*, *A. sulcicornis* **n. sp.**, Bolivia, RAFFRAY, p. 386, t. c.

Aporhescens **n. g.** p. 593, *A. pubescens* **n. sp.**, Bolivia, p. 594, RAFFRAY, Ann. Soc. ent. France 1903.

Arhytodes brevicornis, *brasiliensis*, S. America, RAFFRAY, p. 433, Ann. Soc. ent. France 1904, **n. spp.**

- Arthmius pedestrianus*, Mexico, p. 16, *transversalis*, *labiatus*, Brazil, p. 17, RAFFRAY, t. c. **n. spp.**
- Asymoplectus flagellatus*, S. Africa, RAFFRAY, p. 538, Ann. Soc. ent. France 1903, **n. sp.**
- Atenisodus n. g.* near *Comatopselaphus*, *A. macrophthalmus n. sp.*, Sumatra, RAFFRAY, p. 121, Ann. Soc. ent. France 1904.
- Balega dentata*, Mexico, RAFFRAY, p. 511, Ann. Soc. ent. France 1903, **n. sp.**
- Batoctenus dimidiatus*, Bolivia, *incertus*, Amazons, RAFFRAY, p. 39, Ann. Soc. ent. France 1904, **n. spp.**
- Batraxis tumorosa*, p. 118, Sumatra, *indica*, India, *parvispina*, Sumatra, p. 119, *obesa*, Philippines, p. 120, RAFFRAY, t. c. **n. spp.**
- Batriobolbus n. g.* for part of *Eubatrissus*, RAFFRAY, p. 60, t. c.
- Batrissiella n. g.* for *Eubatrissus caviventris*, RAFFRAY, p. 59, t. c.
- Batrissinus elegans*, *gravidus*, Sumatra, RAFFRAY, p. 58, t. c. **n. spp.**
- Batrissodes obesus*, p. 23, *luteolus*, p. 24, *tricarinatus*, *tuberculatus*, p. 25, *acinosus*, p. 26, *ferinus*, p. 27, *tenuicornis*, *multiforus*, p. 28, *infandus*, p. 29, *patranus*, *nodosus*, p. 30, *indecorus*, *mavortius*, p. 31, *irritus*, p. 32, *demissus*, *sagax*, p. 33, Sumatra, *harmandi*, p. 34, *epistomalis*, p. 35, Japan, RAFFRAY, t. c. **n. spp.**
- Batrissomalus n. g.* for pt. of *Batrissus*, with *B. infossus n. sp.*, S. India, RAFFRAY, p. 60, t. c.
- Batrissoscenus siamensis*, Siam, *furcifer*, p. 43, *tumorosus*, *triangulatus*, p. 44, *truncatus*, *mitratus*, p. 45, *vulneratus*, *carinatus*, p. 46, *trigona*, *longipes*, p. 47, *cameratus*, p. 48, *fornicatus*, *binodosus*, p. 49, *calcaratus*, Sumatra, *saucipipes*, China, p. 50, *deformipes*, p. 51, *cultripipes*, p. 52, *major*, Sumatra, *sinensis*, China, p. 53, *indecorus*, Sumatra, *annamita*, Hué, p. 54, *quadraticeps*, p. 55, *immundus*, *capitatus*, p. 56, Sumatra, *carinicollis*, Botany bay, p. 57, RAFFRAY, t. c. **n. spp.**
- Biblomimus n. g.* *B. minutus n. sp.*, Antilles, RAFFRAY, p. 545, op. cit. 1903.
- Biblopectus parviceps*, Cape G. H., RAFFRAY, p. 545, t. c. **n. sp.**
- Braxyda n. gen.* near *Achillia*, *B. hamata*, p. 145, *crassipes*, p. 146, **n. spp.**, Bolivia, RAFFRAY, op. cit. 1904.
- Brachygluta caligata*, var. n. *depressifrons*, NORMAND, p. 215, Abeille xxx.
- B. bicaudata*, Tunis, NORMAND, p. 215, t. c. **n. sp.**
- Bryaxina n. g.* near *Achillia*, p. 140, *B. torticornis*, *armiceps*, p. 142, *lucida*, *clavata*, *dimidiata*, p. 143, *schaufussi*, *foveifrons*, p. 144, *crassicornis*, p. 145, Brazil, **n. spp.**, RAFFRAY, Ann. Soc. ent. France 1904.
- Bryaxis* cf. *Bythinus*.—*B. sculptifrons* var. n. *roumanice*, *B. nodicornis* var. n. *montandoni*, RAFFRAY, p. 263, t. c.
- B. (Reichenbachia) mundicornis*, Bagdad, PIC, p. 49, Exchange xx, **n. sp.**
- Bunoderus n. g.* near *Brachygluta*, p. 151, *B. carinicollis*, Mexico, *longipilis*, Brazil, **n. spp.**, p. 152, RAFFRAY, Ann. Soc. ent. France 1904.
- Bythinoplectus acutangulus*, Grenada, p. 503, *transversiceps*, Brazil, p. 504, RAFFRAY, op. cit. 1903, **n. spp.**
- Bythinus* auctt. to be called *Bryaxis* Kug., and the *Bythinini* to be called *Tychini*, RAFFRAY, pp. 254 etc., op. cit. 1904.
- B. (Bythoxenus) guignardi*, Basses-Alpes, PEYERIMHOFF, p. 214, Bull. Soc. ent. France 1904; *B. noesskei*, Rhaetian Alps, GANGLBAUER, p. 194, Munchen. Kol. Zeitschr. ii; *B. trigonoceras*, Mte. Cavallo, HOLDHAUS, p. 227, Munchen. Kol. Zeitschr. ii; *B. heterocerus*, Dalmatia, MÜLLER, p. 208, Munchen. Kol. Zeitschr. ii; *B. (Bythoxenus) aymerichi*, Sardinia, DODERO, p. 53, Ann. Mus. Genova xli: **n. spp.**
- Centrophthalmosis n. g.* *C. inexpectus*, p. 376, *sulcatus*, *reitteri*, p. 377, **n. spp.**, Africa, RAFFRAY, Ann. Soc. ent. France 1904.
- Centrophthalmus guineensis*, *abyssinicus*, p. 373, Africa, *birmanus*, Burma, *sinensis*, Mong-po, p. 374, *papuanus*, Dorey, *angustipalpus*, Java, *bicarinatus*, Gaboon, p. 375, RAFFRAY, t. c. **n. spp.**

- Cercoceroides simplex, tuberculatus*, Brazil, RAFFRAY, p. 410, t. c. **n. spp.**
Cercoceropsis n. g. near *Cercoceroides*, *C. longipes n. sp.*, Brazil, RAFFRAY, p. 387, t. c.
Cercocerulus n. g. for *Phalepsus hirsutus*, Schauf., RAFFRAY, p. 411, t. c.
Chenniopsis n. g. p. 338, *C. madecassa n. sp.*, Madagascar, p. 339, RAFFRAY, t. c.
Claviger montandoni, Roumania, RAFFRAY, p. 457, t. c. **n. sp.**
Cliarthrus semirugosus, South Africa, RAFFRAY, p. 18, t. c. **n. sp.**
Comatopselaphus parcepunctatus, Sumatra, RAFFRAY, p. 120, t. c. **n. sp.**
Cryptorhinula xybaridoides, Brazil, RAFFRAY, p. 132, t. c. **n. sp.**
Ctenicellus n. g., p. 344, *C. major n. sp.*, Australia, p. 345, RAFFRAY, t. c.
Ctenisomimus n. g. for *Sognorus oneili*, RAFFRAY, p. 341, t. c.
Ctenisophus validicornis, Sumatra, *bowringi*, Siam, p. 343, *irregularis*, Sumatra, p. 344, RAFFRAY, t. c. **n. sp.**
Ctenistes vaulogeri, Tunis, PIC, p. 89, Echange xx; *C. crassicornis*, Burma, RAFFRAY, p. 340, Ann. Soc. ent. France 1904, **n. sp.**
Curculionellus hirtus, Sumatra, RAFFRAY, p. 322, t. c. **n. sp.**
Cyathiger gracilis, p. 305, *patruelis*, *nodicornis*, p. 306, *truncatus*, p. 307, Sumatra, RAFFRAY, t. c. **n. spp.**
Cyrtoplectus subg. n. for *Euplectus sulciventris*, NORMAND, p. 200, Bull. Soc. ent. France 1904.
Dalmodes gracilipes, Brazil, RAFFRAY, p. 270, Ann. Soc. ent. France 1904, **n. spp.**
Decarthron bicolor, Chile, *hetschkoi*, Brazil, p. 187, *sulcipes*, Bolivia, *tritolum*, Brazil, p. 188, *arthriticum*, Mexico, *insulare*, Grenada, p. 189, *quadraticeps*, Mexico, *planiceps*, Colombia, p. 190, *schmitti*, Mexico, p. 191, *spinosum*, Grenada, *vulneratum*, Mexico, p. 192, *brasilianum*, *minutum*, p. 193, Brazil, *tomentosum*, Colombia, *schaufussi*, Amazons, *planifrons*, Mexico, p. 194, *longicorne*, Amazons, *frontale*, Colombia, p. 195, RAFFRAY, t. c. **n. spp.**
Desimia caviceps, S. Africa, RAFFRAY, p. 346, t. c.; *D. ferruginea*, Tunis, NORMAND, p. 219, Abeille xxx : **n. spp.**
Diaposis n. g. for *Batrisus carinicornis* Raffr., RAFFRAY, p. 38, Ann. Soc. ent. France 1904.
Diaugis n. g. near *Batrisoschema*, p. 14, *D. granulosa n. sp.*, Sumatra, p. 15, RAFFRAY, t. c.
Didymoprora semipunctata, Queensland, RAFFRAY, p. 384, t. c. **n. sp.**
Drasinus n. g. near *Decarthron*, *D. binodulus n. sp.*, Mexico, RAFFRAY, p. 148, t. c.
Ectopocerus n. g. for *Decarthron verticicornis* Reitt., RAFFRAY, p. 149, t. c.
Eleusomatus, p. 638, op. cit. 1904, the following is called *Eleusomatus*.
Eleusoptamus n. g. for *Euplectus allocephalus*, Broun, RAFFRAY, p. 548, op. cit. 1903.
Enoptostomus crassicornis, Sumatra, RAFFRAY, p. 347, op. cit. 1904, **n. sp.**
Ephimida subnitida, Grenada, RAFFRAY, p. 312, t. c. **n. sp.**
Ephymata n. g. for *Bryaxis mucronata* Raffr., RAFFRAY, p. 149, t. c.
Eremomus n. g. near *Brachygluta*, *E. obesus*, Bolivia, p. 177, *crassicornis*, Para, p. 178, **n. spp.**, RAFFRAY, t. c.
Euphalepsus tricarinatus, p. 61, *fasciculatus*, p. 62, Brazil, *dentipes*, N. America, p. 63, *tibialis*, Amazons, p. 64, RAFFRAY, t. c.
Eupines minima, Australia, p. 123, *E. (Byraxis) longiceps*, New Zealand, p. 124, RAFFRAY, t. c. **n. spp.**
Euplectus, cf. *Cyrtoplectus*.
E. crassus, pici, p. 210 with var. *scillarum*, p. 211, *fedjensis*, p. 212, Tunis, NORMAND, Abeille xxx; *E. caviceps*, p. 48, *sulciceps*, p. 49, New Zealand, BROUN, Ann. Nat. Hist. xiv; *E. schmitti*, p. 540, *infossus*, p. 541, N. America, *exiguus*, *illepidus*, Antilles, p. 542, RAFFRAY, Ann. Soc. ent. France 1903 : **n. spp.**

- Eupsenius gracilis*, Antilles, RAFFRAY, p. 197, op. cit. 1904, **n. sp.**
Eurhexius sexpunctatus, *longicornis*, p. 589, *megacephalus*, p. 590, *quadri-foveatus*, *laevis*, *subacuminatus*, p. 591, *octopunctatus*, *reitteri*, p. 592, *bicolor*, p. 593, Brazil, RAFFRAY, op. cit. 1903, **n. spp.**
Euteleia **n. g.** near *Decarthron*, *E. lewisi*, p. 183, *trifoveata*, Brazil, *nodosa*, Mexico, p. 184, **n. spp.**, RAFFRAY, op. cit. 1904.
Eutyphlus schmitti, Pennsylvania, RAFFRAY, p. 546, op. cit. 1903, **n. sp.**
Exallus **n. g.** for part of *Ocarthrius*, RAFFRAY, p. 18, op. cit. 1904.
Filiger validus, p. 310, *opacus*, p. 311, Sumatra, RAFFRAY, t. c. **n. spp.**
Fustiger smithi, St. Vincent, RAFFRAY, p. 455, t. c. **n. sp.**
Fustigeropsis simplex, S. Africa, RAFFRAY, p. 455, t. c. **n. sp.**
Globa laevis, Bolivia, RAFFRAY, p. 122, t. c. **n. sp.**
Golasa **n. g.** p. 494, for *Sagola microcephala* Reitt., RAFFRAY, op. cit. 1903.
Hamotoides nigropilosus, p. 407, Pará, *hirtus*, p. 408, Grenada, RAFFRAY, op. cit. 1904, **n. spp.**
Hamotus sternalis, p. 389, *boliviensis*, p. 390, Bolivia, *globulifer*, Brazil, p. 392, *tibialis*, Mexico, *punctipennis*, Colombia, p. 393, *vesiculifer*, Venezuela, p. 394, *bulbifer*, Colombia, p. 395, *latus*, Paraguay, p. 397, *cavicornis*, Guatemala, *rugosus*, p. 398, *bicolor*, *fauveli*, p. 399, *sulcicapulus*, Bolivia, *grouvellei*, p. 400, *simplex*, p. 401, Brazil, *soror*, Venezuela, p. 403, *decipiens*, *longepilosus*, Colombia, p. 404, *longiceps*, Brazil, p. 405, RAFFRAY, t. c. **n. spp.**
Hapochæus **n. g.** near *Batrisoschema*, p. 13, *H. granosus* **n. sp.**, Sumatra, p. 14, RAFFRAY, t. c.
Harmomima **n. g.** near *Batrybraxis*, *H. grandiceps*, p. 269, *impressicollis*, p. 270, Bolivia, **n. spp.**, RAFFRAY, t. c.
Itamus **n. g.** near *Decarthron*, *I. laticeps* **n. sp.**, Brazil, RAFFRAY, p. 196, t. c.
Iteticus **n. g.** for part of *Batrisodes* etc., RAFFRAY, p. 19, t. c.
Jubus brevis, Bolivia, *gracilicornis*, Mexico, p. 510, *clavatus*, Grenada, p. 511, RAFFRAY, op. cit. 1903, **n. spp.**
Labomimus harmandi, India, RAFFRAY, p. 382, op. cit. 1904, **n. sp.**
Machærites glabratus, found with *Ponera*, CHITTY, p. xl, P. ent. Soc. London 1904.
Macropectus tasmanicus, Tasmania, RAFFRAY, p. 544, Ann. Soc. ent. France 1903, **n. sp.**
Melba grenadensis, Antilles, p. 535, *dentipes*, N. America, p. 536, *quadri-foveata*, St. Thomas, p. 537, RAFFRAY, t. c. **n. spp.**
Nenemeca **n. g.** near *Batrisus*, *N. bidentata* **n. sp.**, Sumatra, RAFFRAY, p. 37, op. cit. 1904.
Methorius **n. g.** p. 537 for *Periplectus bicolor*, RAFFRAY, op. cit. 1903.
Metopias carinipes, Bolivia, RAFFRAY, p. 106, op. cit. 1904, **n. sp.**
Mina nasuta, Sumatra, RAFFRAY, p. 59, t. c. **n. sp.**
Mirus lavagnei, Montpellier, DODERO, p. 40, Bull. Soc. ent. France 1904, **n. sp.**
Mitona **n. g.** near *Xybaris*, *M. quadraticeps*, p. 129, *bisulciceps*, Bolivia, *mnizechi*, Colombia, p. 130, *nigra*, Venezuela, p. 131, **n. spp.**, RAFFRAY, Ann. Soc. ent. France 1904.
Nodulina **n. g.** for *Bryaxis convexa* Schauf., RAFFRAY, p. 153, t. c.
Odontalgus gracilis, *validus*, Sumatra, RAFFRAY, p. 348, t. c. **n. spp.**
Omotimus **n. g.** for *Trimidytes sulcifrons*, RAFFRAY, p. 534, op. cit. 1903.
Ophelius **n. g.** near *Batrisopsis*, *O. simplex* **n. sp.**, Sumatra, RAFFRAY, p. 36, op. cit. 1904.
Patreus **n. g.** near *Sagola*, for *P. lewisi* **n. sp.**, New Zealand, BROUX, p. 47, Ann. Nat. Hist. xiv.
Phalepsus vulgaris, *cavicornis*, S. America, RAFFRAY, p. 416, Ann. Soc. ent. France 1904, **n. spp.**

- Phamismus velutinus*, Bolivia, RAFFRAY, p. 512, op. cit. 1903, **n. sp.**
Phoberus n. g. near *Reichenbachia*, *P. armatus n. sp.*, Bolivia, RAFFRAY, p. 176, op. cit. 1904.
Prosagola n. g. p. 494, for *Sagola elfrida* Reitt., RAFFRAY, op. cit. 1903.
Pselaphus globiventris, Sicily, REITER, p. 46, Wien. ent. Zeit. xxiii; *P. pubescens*, Annam, *vestitus*, Sumatra, *squamosus*, Cape Town, RAFFRAY, p. 321, Ann. Soc. ent. France 1904 : **n. spp.**
Pselaptus politissimus, Brazil, *sternalis*, Grenada, RAFFRAY, p. 128, op. cit. 1905, **n. spp.**
Pseudohamotus planiceps, Brazil, RAFFRAY, p. 409, op. cit. 1904, **n. sp.**
Pseudophanias elegans, robustus, p. 413, Sumatra, *punctatus*, Singapore, p. 414, *puberulus*, Penang, *clavatus*, Sumatra, p. 415, RAFFRAY, t. c. **n. spp.**
Pyxidicerus lævipennis, Sumatra, *laticollis*, Singapore, RAFFRAY, p. 501, op. cit. 1903.
Radamellus n. g. for *Radama spinipennis*, RAFFRAY, p. 456, op. cit. 1904.
Raffrayia opaca, S. Africa, RAFFRAY, p. 595, op. cit. 1903, **n. sp.**
Reichenbachia addahensis, W. Africa, *nava*, p. 156, *breviventris*, Sumatra, *infelix*, W. Africa, p. 157, *bengalensis*, India, *grouvellei*, Mexico, p. 158, *nitella*, Sumatra, *boliviensis*, Yuracarís, p. 159, *pygidialis*, Missouri, *cicatricosa*, Sumatra, p. 160, *muscorum*, Penang, *curvipes*, Brazil, p. 161, *arabica*, Hedjaz, *irrita*, p. 162, *luteola*, p. 163, *chevolati*, *pilosa*, p. 164, *illepida*, Brazil, *fasciculata*, p. 165, *compressipes*, p. 166, Sumatra, *orientalis*, W. Asia, p. 167, *maroccana*, Morocco, *grenadensis*, p. 168, *vincentiana*, Antilles, *cultrata*, Sumatra, p. 169, *falsa*, Yucatan, p. 170, *globulosa*, Brazil, p. 171, *chiricahuensis*, Arizona, p. 172, *mexicana*, Mexico, *oberthuri*, Honda, p. 173, *appendiculata*, Mexico, p. 174, *obnubila*, Yucatan, *immodica*, Colombia, p. 175, RAFFRAY, op. cit. 1904; *R. infossa*, Sumatra, RAFFRAY, p. 635, t. c. : **n. sp.**
Rybaxis villosa, Tonkin, *convexa*, Sumatra, p. 181, *bicarinata*, Queensland, p. 182, RAFFRAY, t. c. **n. spp.**
Salagosa n. g. p. 494, for *Sagola brevipennis* Reitt., RAFFRAY, op. cit. 1903.
Sathyes gracilis, Sumatra, RAFFRAY, p. 65, op. cit. 1904, **n. sp.**
Scalenarthrus subcarinatus, Yucatan, *schaufussi*, Brazil, p. 125, *simplex*, Bolivia, *obliquus*, Mexico, p. 126, *clavatus*, *pectinicornis*, Antilles, p. 127, RAFFRAY, t. c. **n. spp.**
Schaufussia nasuta, S. Australia, RAFFRAY, p. 385, t. c. **n. sp.**
Strombopsis n. g. near *Xybarida*, p. 133, *X. breviventris n. sp.*, Brazil, RAFFRAY, t. c.
Subulipalpus myrmecophilus, Hong-Kong, RAFFRAY, p. 383, t. c. **n. sp.**
Tanypleurus megacephalus, Sumatra, RAFFRAY, p. 271, t. c. **n. sp.**
Thesiastes liliputanus, Granada, RAFFRAY, p. 543, op. cit. 1903, **n. sp.**
Thysdarius n. n. for *Thysdrus* Fairm., FAIRMAIRE, p. 117, Bull. Soc. ent. France 1904.
Tmesiphorus punctatus, Assinia, p. 378, *arrowi*, Adelaide Riv., p. 379, *bispina*, *squamosus*, p. 380, *aspericollis*, p. 381, Sumatra, RAFFRAY, Ann. Soc. ent. France 1904, **n. spp.**
Trimium longiventris, Transcaucasus, RAFFRAY, p. 534, op. cit. 1903, **n. sp.**
Triomicrus cavernosus, humilis, China, RAFFRAY, p. 147, op. cit. 1904, **n. spp.**
Tychus, study, synonymical and varietal, PEYERIMHOFF, Abeille xxx, pp. 169–179, *T. bryaxioides* var. *n. raffrayi*, p. 173; *T. niger* and *bryaxioides*, variation, *bryaxioides* var. *n. poupiliéri*, RAFFRAY, pp. 265–267, Ann. Soc. ent. France 1904.
T. bispina, Tangier, p. 267, *sternalis*, Pennsylvania, p. 268, RAFFRAY, t. c. **n. spp.**
Tyraphus vestitus, Sumatra, RAFFRAY, p. 636, t. c. **n. sp.**
Tyrus tillyi, Carinthia, SCHATZMAYR, p. 213, Munchen. Kol. Zeitschr. ii, **n. sp.**

- Xybarida punctulum*, Brazil, RAFFRAY, p. 133, Ann. Soc. ent. France 1904, **n. sp.**
Xybaris quadraticeps, p. 131, *atomaria*, p. 132, Brazil, RAFFRAY, t. c. **n. spp.**
Zethopsus puncticeps, Sumatra, RAFFRAY, p. 502, op. cit. 1903, **n. spp.**

PAUSSIDÆ.

[Cf. PÉRINGUEY (1028), WASMANN (1481).]

- Paussidæ*, remarks on phylogeny and biology, also new varr. besides the spp. mentioned below, WASMANN, Notes Leyden Mus. xxv, pp. 1–82.
Hylotorus sebakuanus, Rhodesia, PÉRINGUEY, p. 205, Ann. S. African Mus. iii, **n. sp.**
Paussus favieri, relations with ants, NORMAND, p. 79, Echange xx.
P. cerambyx, Congo, p. 51, pl. iv, f. 3, *bicornis*, Cameroons, f. 2, p. 52, *semicucullatus* (Brauns), Port Elizabeth, p. 53, *cardoni*, p. 57, pl. v, f. 6, *assmuthi*, p. 58, pl. vi, f. 4, *seriesetosus*, f. 3, p. 59, *quadratidens*, p. 60, *aureofimbriatus*, p. 61, pl. vi, f. 5, India, *spiniceps*, p. 63, f. 6, Sierra Leone, *pandamanus*, f. 6, p. 64, *nigrita*, p. 65, Java, WASMANN, Notes Leyden Mus. xxv, **n. spp.**
Platyhopalus cardoni, India, p. 19, *paussoides*, Bootang, p. 20, pl. iii, f. 3, WASMANN, t. c. **n. spp.**
Pleuropterus oberthuri, p. 9, *brevicornis*, p. 10, Africa, WASMANN, t. c. **n. spp.**

SCYDMENIDÆ.

[Cf. FAUCONNET & VITURAT (480), REITTER (1151, 1152).]

- Euconnus solarii*, Valle Lucano, REITTER, p. 152, Wien. ent. Zeit. xxiii, **n. sp.**
Neuraphes bescidicus, Silesia, REITTER, p. 147, t. c. **n. sp.**
Stenichnus pilosissimus, Valle Lucano, REITTER, p. 151, t. c. **n. sp.**

SILPHIDÆ.

[Cf. ABEILLE (4), CHOBOUT (271), CSIKI (328), DODERO (397), FLEISCHER (513), MAYET (926), MÜLLER (970, 971), PEYERIMHOFF (1041, 1042), POPPIUS (1094), PORTEVIN (1100), REITTER (1142, 1151, 1152, 1155), WASMANN (1482), ZOUFAL (1549).]

REITTER figures Bosnian and Herzegowinian Cave *Silphidæ*, pl. 1, p. 146, Wien. ent. Zeit. xxiii.

- Agathidium levigatum*, Valle Lucano, REITTER, p. 154, t. c. **n. sp.**
Anemadus leonhardi, Herzegowina, REITTER, p. 154, t. c. **n. sp.**
Antroherpon loreki = (*kraussi* Müll.), REITTER, p. 84, t. c.
A. loreki, cavern in Herzegowina, ZOUFAL, p. 20, Wien. ent. Zeit. xxiii; *A. kraussi*, Herzegowina, MÜLLER, p. 38, München. Kol. Zeitschr. ii, **n. spp.**
Apholeuonius nudus var. *n. longicollis*, REITTER, p. 255, Wien. ent. Zeit. xxiii.
A. (Haplotropidius) subg. n. p. 89), *pubescens*, p. 78, pl. i, f. 1, *taxi*, p. 83, f. 2, Dalmatian caverns, MÜLLER, SB. Ak. Wien cxii, Abt. i, **n. spp.**
Bathyscia destefanii, valid, list of Italian *B.*, DODERO, pp. 121–123, Natural. Sicil. xvii; *B. champsauri*, p. 215, *foveicollis*, p. 216, subspp. n., PEYERIMHOFF, Bull. Soc. ent. France 1904; *B. neumanni*, characters, REITTER, p. 260, Wien. ent. Zeit. xxiii.
B. nemausica, Nîmes, CHOBOUT, p. 76, Bull. Soc. Nîmes xxxi; *B. jeanneli*, p. 242, *elgueæ*, p. 243, Basses Pyrénées, ABEILLE, Bull. Soc. ent. France 1904; *B. (Aphaobius) fabianii*, Venetia, p. 55, *raveli*, Capri, p. 57, *losticæ*, Sardinia, p. 58, DODERO, Ann. Mus. Genova xli; *B. serbica*,

- Servia, MÜLLER, p. 41, Munchen. Kol. Zeitschr. ii; *B. (Aphaobius) eurycnemis*, cavern Herzegowina, REITTER, p. 26, Wien. ent. Zeit. xxiii : **n. spp.**
- Blatrodromus* **subgen. n.**, cf. *Pholeuonopsis*.
- Choleva pallida*, E. Siberia, POPPIUS, p. 2, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Delios* **n. g.** *Liodini*, *D. bouvieri* **n. sp.**, Darjeeling, PORTEVIN, p. 335, Bull. Mus. Paris ix.
- Diaprysius mazaurici*, cavern, Gard, MAYET, p. 31, Bull. Soc. Nimes xxxi; *D. serullazi*, Ardèche. PEYERIMHOFF, p. 185, Bull. Soc. ent. France 1904 : **n. spp.**
- Dissochaetus geayi*, French Guiana, PORTEVIN, p. 329, Bull. Mus. Paris ix, **n. sp.**
- Eusilpha hypocrita*, Mou-pin, PORTEVIN, p. 332, t. c. **n. sp.**
- Hadrambe* Thoms. is syn. of *Ecanus* Steph., BEDEL, p. 235, Abeille xxx.
- Haplotropidius* **subgen. n.**, cf. *Apholeuonus*.
- Liodes*, habits, with larvæ noticed, FLEISCHER, pp. 251–254, Wien. ent. Zeit. xxiii, *L. curvipes* (= *macropus* Rye) characters, var. *n. ruficornis*, FLEISCHER, p. 162, t. c.; *L. ovalis, nigricollis*, nov., FLEISCHER, p. 166, t. c.; *L. scita*, cf. *Trichosphærule*.
- L. chaffanjonii*, Mongolia, *contracta*, Darjeeling, PORTEVIN, p. 335, Bull. Mus. Paris ix, **n. spp.**
- Loricaster cribripennis*, France, REITTER, p. 147, Wien. ent. Zeit. xxiii, **n. sp.**
- Necrophorus vespilloides* var. *n. lateralis*, PORTEVIN, p. 330, Bull. Mus. Paris ix.
- N. quadraticollis*, Mou-pin, id., l. c. **n. sp.**
- Philas* **n. g.** for *Silpha truncata* Say, PORTEVIN, p. 331, t. c.
- Pholeuon (Parapholeuon) hungaricum*, Szohodol, CSIKI, p. 565, Ann. Mus. Hungar. ii, **n. sp.**
- Pholeuonopsis (Blattodromus* subg. *n.*) *herculeana*, Bosnia, REITTER, p. 153, Wien. ent. Zeit. xxiii, **n. sp.**
- Pteroloma harmandi*, Darjeeling, PORTEVIN, p. 334, Bull. Mus. Paris ix, **n. sp.**
- Ptomaphagus bicolor*, Darjeeling, PORTEVIN, p. 329, t. c. **n. sp.**
- Scotocryptus*, notes, larva, WASMANN, Rev. Mus. Paulista vi, pp. 483–487.
- Silpha inæqualis* var. *n. rugulosa*, PORTEVIN, p. 333, Bull. Mus. Paris ix.
- Silphosoma* **n. g.** for *Silpha metallescens* Fairm., PORTEVIN, p. 333, t. c.
- Thanatophilus thoracicus* var. *n. davidi*, PORTEVIN, p. 331, t. c.
- Trichosphærule* subg. *n.* of *Liodes* for *scita* Er., FLEISCHER, p. 261, Wien. ent. Zeit. xxiii.

TRICHOPTERYGIDÆ.

- Ptenidium lævipenne*, East Pyrenees, ABEILLE, p. 100, Miscell. Ent. xii, **n. sp.**

SCAPHIDIIDÆ.

- Scaphidium matthewsi* **n. n.** for *unicolor* Matth., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Scaphosoma reitteri* **n. n.** for *læve* Guillb., CSIKI, p. 85, t. c.

HISTERIDÆ.

[Cf. DAVIS (352), LEWIS (880), REITTER (1144, 1152), SCHAEFFER (1220).]

Hister attacking caterpillars, DAVIS (352).

- Acritus nigricornis*, sexes, MÜLLER, p. 172, Wien. ent. Zeit. xxiii; *A. seminulum* and *nigricornis* as sexes, REITTER, p. 36, t. c.; *A. nigricornis* and *seminulum*, correction, GERHARDT, p. 368, Deutsche ent. Zeitschr. 1904.
- A. italicus*, Valle Lucano, REITTER, p. 155, Wien. ent. Zeit. xxiii, **n. sp.**
- Enicosoma n. g.* for *E. vespertinum n. sp.*, Brazil, LEWIS, p. 149, pl. vi, f. 5, Ann. Nat. Hist. xiv, **n. sp.**
- Eutidium lepidum*, Brazil, LEWIS, p. 138, t. c. **n. sp.**
- Gnathoncus*, synonymy, *G. schmidti*, established, REITTER, p. 35, Wien. ent. Zeit. xxiii.
- Hister pachysoma*, characters, LEWIS, p. 146, Ann. Nat. Hist. xiv.
- H. belli*, India, p. 146, *walkeri*, Australia, p. 147, LEWIS, t. c. **n. spp.**
- Hololepta dux*, Cameroons, LEWIS, p. 138, t. c. **n. sp.**
- Lioderma intersectum*, Peru, LEWIS, p. 139, t. c. **n. sp.**
- Macrolister n. g.* for *Hister gigas* etc., LEWIS, p. 145, t. c.
- Niponius canalicollis*, f. 1, *parrulus*, f. 2, *andrewesi*, f. 3, pl. vi, LEWIS, t. c.
- N. striaticeps*, Borneo, p. 137, pl. vi, f. 4, id. t. c. **n. sp.**
- Omalodes mestino*, Peru, LEWIS, p. 144, **n. sp.**
- Orectoscelis humeralis*, pl. vi, fig. 6, LEWIS, t. c.
- Pachycrærus cylindricus*, description, LEWIS, p. 148, t. c.
- Pachylister n. g.* for *Hister caffer* etc., LEWIS, p. 145, t. c.
- Pachylomalus andrewesi*, India, LEWIS, p. 147, t. c. **n. sp.**
- Placodes brauni*, S. Africa, LEWIS, p. 142, t. c. **n. sp.**
- Plæsius mouhoti*, *planulus*, *lævis*, redescribed, LEWIS, pp. 140, 141, t. c.
- Platylister sororius*, India, LEWIS, p. 142, t. c. **n. sp.**
- Platysoma capense* is *henningi* Sturm, *sculptum* Fähr, *punctulatum* Lew., LEWIS, p. 144, t. c.
- P. raptistriatum*, Java, LEWIS, p. 143, t. c. **n. sp.**
- Probolosternus termitophilus*, S. Africa, LEWIS, p. 148, t. c. **n. sp.**
- Saprinus politus* Brahm = (*pulcherrimus* Web.), BEDEL, p. 236, Abeille xxx; *S. lateristrius* var. *n. laterimargo*, REITTER, p. 32, Wien. ent. Zeit. xxiii.
- S. mimulus*, Astrakhan, p. 29, *syphax*, Algiers, p. 30, *duriculus*, Transcasian, p. 31, *refector*, Samarkand, p. 32, *netuschili*, Mongolia, *pseudolautus*, Transcaucasus, p. 33, *pseudognathoncus*, W. Caucasus, p. 34, REITTER, t. c.: *S. dichrous*, *flavopictus*, S. America, LEWIS, p. 150, Ann. Nat. Hist. xiv : **n. spp.**
- Stenotrophis cavifrons*, pl. vi, fig. 7, LEWIS, t. c.
- Teinotarsus latipes*, Old Calabar, LEWIS, p. 145, t. c. **n. sp.**
- Teretriosoma sexualis*, Texas, SCHAEFFER, p. 203, J. N. York Ent. Soc. xii, **n. sp.**

NITIDULIDÆ.

[Cf. GROUVELLE (639), POPPIUS (1094), SCHAEFFER (1220).]

- Camptodes texanus*, Brownsville, SCHAEFFER, p. 203, J. N. York Ent. Soc. xii, **n. sp.**
- Epuræa opacula*, E. Siberia, POPPIUS, p. 3, Ofv. Finska Forh. xlv, No. 16, p. 5, **n. sp.**
- Glischrochilus olivieri*, synonymy, BEDEL, p. 236, Abeille 1904.
- Meligethes atomus*, Congo, GROUVELLE, p. 181, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Pocadius ferrugineus* and *striatus*, synonymy, BEDEL, p. 236, Abeille 1904.

COLYDIIDÆ.

[Cf. GROUVELLE (639).]

- Caprodes ater*, Congo, GROUVELLE, p. 181, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Cerylon ovale, Gaboon, GROUVELLE, p. 182, t. c. **n. sp.**

Endophlæus markovichianus Pill. (= *spinosulus* Latr.), BEDEL, p. 236, Abeille xxx.

Minthea rugicollis Walk. (as *Ditoma*) = (*similatra* Pasc. = *Eulachus hispidus* Blackb. = *Lyctopholis foveicollis* Reitt.), ARROW, pp. 35, 36, Ent. Mag. xl.

RHYSODIDÆ.

Rhysodes ichthyocephalus, abbreviatus, p. 79, *mirabilis*, pl. iv, fig. 7, p. 80, Queensland, *trichostemus*, p. 81, Victoria and Tasmania, *planatus*, Victoria, p. 82, LEA, P. Linn. Soc. N. S. Wales xxix, **n. spp.**

CUCUJIDÆ.

[Cf. GROUVELLE (639), LEA (864), SCHAEFFER (1220).]

Dryocora walkeri, Tasmania, LEA, p. 87, pl. iv, fig. 5, P. Linn. Soc. N. S. Wales xxix, **n. sp.**

Læmophlæus diemenensis ♀, pl. iv, fig. 14, *frenchi*, fig. 4; LEA, p. 87, t. c.

L. notabilis, Congo, GROUVELLE, p. 183, Ann. Soc. ent. Belgique xlviii; *L. subopacus*, W. Australia, p. 82, *ubiquitosus*, Tasmania, p. 83, *pilosus*, p. 84, *testaceo-rufus*, W. Australia, *eucalypti*, Tasmania, p. 85, *pallidus*, Australia, p. 86, LEA, P. Linn. Soc. N. S. Wales xxix : **n. spp.**

Læmotmetus rhizophagoides Walk. (as *Trogossita*) = (*ferrugineus* Gerst. = *Oryzæcus cathartoides* Reitt. = *Asana rhizophagoides* Oll.), ARROW, p. 36, Ent. Mag. xl.

Silvanus proximus, p. 183, *frater*, p. 184, West Africa, GROUVELLE, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Platysus integricollis, larva, LEA, p. 88, pl. iv, fig. 6, P. Linn. Soc. N. S. Wales xxix.

Rhinomalus texanus, Brownsville, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii : **n. sp.**

CRYPTOPHAGIDÆ.

[Cf. GABRIEL (577), SCHAEFFER (1220).]

Atomaria; mode of distinguishing species, table, GABRIEL, Zeitschr. Ent. Breslau xxix, pp. 85–89; *A. proluxa* and *pulchra*, characters, GERHARDT, p. 83, Zeitschr. Ent. Breslau xxix.

Loberus ornatus, Texas, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii : **n. sp.**

Tomarus chamæropis, Texas, SCHAEFFER, p. 202, t. c. **n. sp.**

LATHRIDIIDÆ.

[Cf. POPPIUS (1095), REITTER (1152), SEMENOW (1278).]

Corticaria solarii, Valle Lucano, REITTER, p. 156, Wien. ent. Zeit. xxiii; *C. dentiventris*, E. Siberia, POPPIUS, p. 84, Medd. Soc. Faun. Fenn. 1902/03 : **n. spp.**

Enicmus minutus and *anthracinus*, distinguished, REITTER, pp. 43–45, 80, Wien. ent. Zeit. xxiii.

Lar subg. n. of *Lathridius* for *L. bergrothi*, SEMENOW, p. 314, Rev. Russe Ent. 1904.

Lathridius subbrevis Motsch., characters, POPPIUS, p. 89, Medd. Soc. Faun. Fenn. 1902/03.

Lathridius semenowi, p. 87, *lenensis*, p. 91, East Siberia, POPPIUS, t. c.; *L. poppiusi*, E. Siberia, SEMENOW, p. 289, Rev. Russe Ent. 1904 : **n. spp.**

MYCETOPHAGIDÆ.

[Cf. GROUVELLE (639), REITTER (1153).]

Lithargus trimaculatus, p. 184, *variegatus*, p. 185, Congo, GROUVELLE, Ann. Soc. ent. Belgique xlviii, **n. spp.***Mycetophagus irroratus* = (*tschitscherini* Reitt.), SEMENOW, p. 305, Rev. Russe Ent. 1904; *M. decempunctatus* var. *n. syriacus*, REITTER, p. 165, Wien. ent. Zeit. xxiii.*M. ramosus*, Caucasus, id. p. 166, t. c., **n. sp.***Typhæa stercorea* L. 1758 = (*fumata* L. 1761), BEDEL, p. 235, Abeille xxx.

THORICTIDÆ.

Thorictus peyerimhoffi, Arabia, CHABAUT, p. 243, Bull. Soc. ent. France 1904; *T. kaznakovi*, E. Buchara, SCHMIDT, p. 389, Annuaire Mus. St. Petersb. viii : **n. spp.**

DERMESTIDÆ.

[Cf. GANGLBAUER (580), PIC (1060, 1068, 1075).]

The European *Dermestidæ*, GANGLBAUER (580).*Attagenus biskrensis*, Algeria, PIC, p. 2, Echange 1904; *A. longipennis*, Kashgar, PIC, p. 33, t. c. : **n. spp.***Dermestes erichsoni* **n. n.** for *tessellatus* Er., GANGLBAUER, p. 16, Käf. Mitteleur. iv.*Entomotrogus* **n. g.** for *Trogoderma megatomoides* Reitt., GANGLBAUER, p. 33, t. c.*Ignotus ænigmaticus*, figure, Ent. News Philad. xv, p. 36.*Telopes brunnescens*, Amanus, PIC, p. 73, Echange xx, **n. sp.**

BYRRHIDÆ.

[Cf. BROUN (184), GANGLBAUER (580, 581), POPPIUS (1094).]

The *Byrrhidæ* of Europe, *Nosodendron*, a distinct family, *Nosodendridæ*, GANGLBAUER (580).*Byrrhus picipes judicarius* subsp. *n.*, GANGLBAUER, p. 200, Munchen. Kol. Zeitschr. ii.*Curimus vestitus*, New Zealand, BROUN, p. 49, Ann. Nat. Hist. xiv, **n. sp.***Simplocaria nivalis*, Tyrol, GANGLBAUER, p. 61, Käf. Mitteleur. iv; *S. nivalis*, Mt. Adamello, GANGLBAUER, p. 188, Munchen. Kol. Zeitschr. ii; *S. obscuripes*, E. Siberia, p. 5, *palmeni*, p. 6, *arctica*, p. 7, N. Russia, *nebulosa*, E. Siberia, p. 9, POPPIUS, Ofv. Finska Forh. xlv, No. 16, **n. spp.**

PARNIDÆ and HETEROCERIDÆ.

[Cf. GANGLBAUER (580, 582), GROUVELLE (640), SCHAEFFER (1220).]

Parnidæ to be called *Dryopidæ*, GANGLBAUER, p. 95, Käf. Mitteleur. iv.*Esolus solarii*, Genoa, GANGLBAUER, p. 116, t. c. **n. sp.***Latelmis subopaca*, Val Pesio, GANGLBAUER, p. 118, t. c. **n. sp.***Riolus apfelbecki*, Servia, GANGLBAUER, p. 354, Munchen. Kol. Zeitschr. ii, **n. sp.**

- Throscinus schwarzii*, Texas, SCHAEFFER, p. 204, J. N. York Ent. Soc. xii, **n. sp.**
Heterocerus (Littorimus) conjungens, Bangkok, GROUVELLE, p. 83, Mission Pavie iii, **n. sp.**

PASSALIDÆ.

[Cf. ARROW (38), SHARP (1284), ZANG (1545, 1546).]

The stridulation of *Passalidæ*, ARROW, pp. 731-734, Tr. ent. Soc. London 1904.

Stridulation, *Passalidæ*, *Proculus*, SHARP, p. 273, Ent. Mag. xl.

Aceraius ; synonymy of the species, ZANG, p. 184, Tijdschr. Ent. xlvii.

Basilianus convexifrons, Assam, ZANG, p. 698, Zool. Anz. xxvii, **n. sp.**

Ophrygonius n. g. near *Aceraius*, p. 697, *O. quadrifer n. sp.*, Borneo, p. 699, ZANG, t. c.

Parapelopides n. g. near *Aceraius*, p. 694, *P. symmetricus sp. n.*, p. 695, Borneo, ZANG, t. c.

Passalus distinctus, hab. America, Africa, Madagascar, ZANG, p. 181, Tijdschr. Ent. xlvii.

Pelops triumphator, Moluccas, ZANG, p. 182, t. c.

LUCANIDÆ.

[Cf. BOILEAU (141, 142, 143), BROUN (184), MOLLENKAMP (954).]

The stridulation of *Lucanidæ*, ARROW, pp. 735-737, Tr. ent. Soc. London 1904.

Cyclommatus giraffa, montanellus, Kina Balu, MÖLLENKAMP, p. 372, Ins. Börse 1904, **n. spp.**

Dorcus (Eurytrachelus) brachycerus, Kashmir, BOILEAU, p. 27, Bull. Soc. ent. France 1904 ; *D. (Macrodorcus) rugosus*, Madura, BOILEAU, p. 39, t. c. : **n. spp.**

Eurytrachelus reichei and allies, MÖLLENKAMP, p. 402, Ins. Börse 1904.

Hemisodorcus axis, Sumatra, BOILEAU, p. 284, Naturaliste 1904, **n. sp.**

Hexarthrus deyrollei var. *n. rufipes*, BOILEAU, p. 277, t. c.

H. rollei, Kina Balu, MÖLLENKAMP, p. 403, Ins. Börse 1904, **n. sp.**

Homoderus? variegatus, Cameroons, BOILEAU, p. 277, Naturaliste 1904, **n. sp.**

Metopodontus felschei, W. Africa, MÖLLENKAMP, Ins. Börse 1904, p. 372 ; *M. mirabilis*, Usambara, *speciosus*, Nilgherry hills, BOILEAU, p. 278, Naturaliste 1904 : **n. spp.**

Mitophyllus curvidens, New Zealand, BROUN, p. 50, Ann. Nat. Hist. xiv, **n. sp.**

Odontolabis waterstradti var. *n. kinabaluensis*, MÖLLENKAMP, Ins. Börse 1904, p. 341, *gazella telodont*, p. 348.

O. instabilis, Sumatra, p. 347, *imperialis*, Kina Balu, p. 348, MÖLLENKAMP, t. c. **n. spp.**

Prismognathus lucidus, Sikkim, BOILEAU, p. 278, Naturaliste 1904, **n. sp.**

Prosopocelus boreli, Assam, *specularis*, Tanganyika, p. 284, *mordax*, Burma, p. 285, BOILEAU, t. c. ; *P. laticeps*, Himalaya, MÖLLENKAMP, p. 403, Ins. Börse 1904 : **n. spp.**

Sphenognathus bellicosus, spinifer, S. America, BOILEAU, p. 284, Naturaliste 1904, **n. spp.**

SCARABÆIDÆ.

Stridulation of the imago, ARROW, Tr. ent. Soc. London 1904, pp. 709–750, pl. xxxvi.

Coprini.

[Cf. ARROW (38), BLACKBURN (132, 133, 134), BOUCOMONT (159), FAIRMAIRE (473), FELSCHÉ & D'ORBIGNY (494), FRANÇOIS (539), KOLBE (830), LEA (864), MAYET (925), OHAUS (992), D'ORBIGNY (996, 997, 998), PÉRINGUEY (1028), REITTER (1152, 1155).]

Notes on classification, specially of the *Geotrupid* series, ARROW, Tr. ent. Soc. London 1904, pp. 738–749.

Ægidinus n. g. *Æ. brasiliensis* n. sp., Ega, ARROW, p. 739, t. c.

Ægidium asperatum = (*colombianum* Bates), ARROW, p. 738, t. c.

Allotrypes subg. n. cf. *Geotrypes*.

Ammæcius felscheanus, Algeria, REITTER, p. 255, Wien. ent. Zeit. xxiii, n. sp.

Anachalcos schulzi, E. Africa, KOLBE, p. 285, Berlin. ent. Zeitschr. xlix, n. sp.

Aphodiides, revision of Australian, BLACKBURN, pp. 149–181, P. Soc. Victoria xvii.

Aphodius rufus = (*moscoviticus* Sem.), SEMENOW, p. 37, Rev. Russe Ent. iv ; *A. breviciliatus* n. n. for *fimbriolatus* Reitt. nec. Mannh., POPPIUS, p. 366, Annuaire Mus. St. Petersb. viii ; *A. tunicatus* and *tomentosus*, SEMENOW, p. 305, Rev. Russe Ent. 1904.

A. (Esymus) cuniculorum, Nîmes, MAYET, p. 130, Bull. Soc. ent. France 1904 ; *A. andersoni*, p. 154, *suberosus*, p. 155, *insignior*, *baldiensis*, p. 156, Australia, BLACKBURN, P. Soc. Victoria xvii : n. spp.

Atænius moniliatus, p. 161, *koebeli*, p. 162, *imparilis*, p. 163, *sparsicollis*, *semicornutus*, p. 164, *tweedensis*, p. 165, *nudus*, *gibbus*, p. 166, *macilentus*, *spissus*, p. 167, *consors*, p. 168, *coloratus*, p. 169, *walkeri*, p. 170, Australia, BLACKBURN, t. c. n. spp.

Aulonocnemis, SCHAUFUSS in Ins. Börse xix, p. 130 (not seen by Recorder), described 4 n. spp. of this genus.

Bolboceræ, revision of Australian, BLACKBURN, P. Linn. Soc. N. S. Wales xxix, pp. 481–526.

B. macleayi, p. 500, *aratum*, p. 502, *leovilli*, p. 503, *tenax*, p. 507, *froggatti*, *truncatum*, p. 509, *clypeale*, p. 511, *basedowi*, p. 512, *mandibulare*, p. 513, *loweri*, p. 515, *nitidiceps*, p. 516, *lævipes*, p. 517, *subretusum*, p. 518, *nitens*, p. 519, *impressicolle*, p. 520, *obscurius*, p. 522, *carinatum*, p. 523, *pontiferum*, p. 525, Australia, BLACKBURN, t. c. n. spp.

Caccobius reticuliger, p. 255, *gananensis*, p. 256, *longipennis*, p. 258, Africa, D'ORBIGNY, Ann. Mus. Genova xli ; *C. lateralis*, p. 417, *setifer*, p. 420, *callosifrons*, p. 421, *uniseriæ*, p. 423, W. Africa, D'ORBIGNY, t. c. : n. spp.

Copris camerunus, Africa, FELSCHÉ, p. 402, Arkiv Zool. i, n. sp.

Diastellopalpus albrechtianus, p. 290, *zeuneri*, p. 291, Cameroons, KOLBE, Berlin. ent. Zeitschr. xlix, n. spp.

Diastellopalpus orbignyi, Rhodesia, PÉRINGUEY, p. 224, Ann. S. African Mus. iii, n. sp.

Enoplotrupes ; revision, BOUCOMONT, pp. 210–214, with *sinensis* var. n. *crassicornis*, p. 212, BOUCOMONT, Rev. Ent. franc. 1904.

Epirrhinus, *flagellatus* Fabr. = (*granulatus* Oliv.), BEDEL, p. 152, Abeille xxx.

Euparia olliffi, N. S. Wales, BLACKBURN, p. 171, P. Soc. Victoria xvii, n. sp.

Geotrupes ; table of subgenera, pp. 214–216, the Asiatic species, pp. 216–247,

- BOUCOMONT, Rev. Ent. franc. 1904 ; *Geotrypes* subg. n. *Allotrypes* for *G. mandibularis* Reitt., *G. distinctus*, characters, p. 65, *marginatus*, *intermedius*, *laevigatus*, synonymy, pp. 66, 67, FRANÇOIS, Bull. Soc. ent. France 1904 ; *G. niger* Marsh. = (*hypocrita* Serv.), BEDEL, p. 152, Abeille xxx, *G. (Thorectes) intermedius* Costa = (*laevigatus* Muls., Auctt., nec Fabr. = *cheroni* Croiss., id. l. c. ; *G. vernalis*, *stercorarius*, natural history, larvæ, OHAUS, pp. 103–108, Verh. Ver. Hamburg Unterh. xii.
- G. (Thorectes) punctato-lineatus*, S. E. Spain, FRANÇOIS, p. 141, Bull. Soc. ent. France 1904 ; *G. genestieri*, China, p. 220, *G. (Phelotrupes) varicollicollis*, Yunnan, *indicus*, N. India, p. 226, *immarginatus*, Se-tschuen, p. 231, *oberthuri*, *denticulatus*, p. 232, Siao-Lou, *G. (Odontotrupes* subg. n.), p. 236, *purpurei-punctatus*, p. 239, Se-tschuen, *taurus*, Centr. Asia, p. 240, *rufipes*, p. 242, *G. (Thorectes) armatas*, p. 246, Se-tschuen, BOUCOMONT, Rev. Ent. franc. 1904 : n. spp.
- Gymnopleurus*, *coriarius* Herbst. = (*flagellatus* Fabr., auctt.), BEDEL, p. 152, Abeille-xxx.
- Helicopris felschei*, E. Africa, KOLBE, p. 287, Berlin. ent. Zeitschr. xlix, n. sp.
- Hybosorides* ; the Australian, BLACKBURN, p. 180, P. Soc. Victoria xvii.
- Idiostoma* n. g. and n. subfam., p. 740, *I. rufum*, pl. xxxvi, fig. 1, *medon* n. spp., Patagonia, p. 741, ARROW, Tr. ent. Soc. London 1904.
- Lethrus* (*Ceratodirus*), synonymy, REITTER, pp. 83, 84, Wien. ent. Zeit. xxiii ; *L. cephalotes*, combats, HAJOSS, pp. 8–10, Rov. Lapok xi.
- L. (Microlethrus) mithras*, Persia, REITTER, p. 256, Wien. ent. Zeit. xxiii, n. sp.
- Liatongus basicornis*, Madagascar, FAIRMAIRE, p. 225, Ann. Soc. ent. Belgique xlvi, n. sp.
- Milichus rhodesianus*, S. Africa, PÉRINGUEY, p. 222, Ann. S. African Mus. iii, n. sp.
- Ochodeus maculipennis*, Java, pl. xxxvi, fig. 3, p. 743, *decoratus*, Penang, *campsoognathus*, fig. 2, Argentina, p. 744, *tridentatus*, Colombia, p. 745, ARROW, Tr. ent. Soc. London 1904, n. spp.
- Odontotrupes* subg. n. cf. *Geotrupes*.
- Oniticellus tibatensis*, Cameroons, KOLBE, p. 295, Berlin. ent. Zeitschr. xlix ; *O. sjostedti*, Cameroons, FELSCH, p. 403, Arkiv Zool. i : n. spp.
- Onthophagus granulum* n. n. for *granum* d'Orb., *O. minutus* Hausm. = (*ruficus* Boh.), *setosus* = (*cretus* Pér.), *criniger* n. n. for *crinitus* d'Orb., p. 326, *fulleborni* Kolbe = (*hauseri* d'Orb.), *nyassicus* Kolbe = (*tridepressus* d'Orb.), p. 328, d'ORBIGNY, Ann. Mus. Genova xli ; *O. transcaspicus* Koen. = (*lineatus* Reitt.), REITTER, p. 25, Wien. ent. Zeit. xxiii.
- O. sjostedti*, Cameroons, d'ORBIGNY, p. 407, Arkiv Zool. i ; *O. ragazzii*, p. 261, *traversii*, p. 262, *aeremicans*, p. 264, *rufovirens*, p. 266, *calous*, p. 268, *impunctatus*, p. 271, *astigma*, p. 273, *flavibasis*, p. 274, with varr. *lineiger*, *mundatus*, p. 275, *stillatus*, p. 277, *choanicus*, p. 279, *laevis*, p. 281, *hirtipodex*, p. 283, *longiceps*, p. 285, *gestroi*, p. 287, *bituber*, p. 289, *carinifer*, p. 292, *concaavifrons*, p. 294, *scaberrimus*, p. 296, *unicarina*, p. 298, *investis*, p. 301, *piceiceps*, p. 304, *O. (Phalops) gallanus*, p. 309, *O. (Proagoderus) flexicollis*, p. 314, *triarmatus*, p. 320, Africa, d'ORBIGNY, Ann. Mus. Genova xli ; *O. nitidifrons*, p. 425, *inconstans*, p. 426, *miles*, p. 428, *nonstriatus*, p. 430, *bidentiger*, p. 433, *imbellis*, p. 434, *feai*, p. 436, *androgynus*, p. 439, *curtipilis*, p. 440, *mucronifer*, p. 442, *altidorsis*, p. 443, W. Africa, d'ORBIGNY, t. c. ; *O. cupreovirens*, p. 204, *adornatus*, p. 205, *arcifer*, p. 206, *anthracites*, p. 208, *bocandei*, p. 209, *minax*, p. 210, *duvivieri*, p. 211, *semiviridis*, p. 212, *tschoffeni*, p. 213, *flavorufus*, p. 215, *rufaticollis*,

- p. 216, *O. (Proag.) superbus*, p. 217, *prædentatus*, p. 218, *marginidens*, p. 220, Africa, D'ORBIGNY, Ann. Soc. ent. Belgique xlviii; *O. placens*, p. 219, *prætorius*, *decedens*, p. 220, *serenus*, p. 221, *rhynchophorus*, p. 222, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii; *O. carteri*, N.S.W., p. 147, *jungi*, S. Australia, p. 148, BLACKBURN, P. Soc. Victoria xvii : **n. spp.**
- Orphnus striatopunctatus*, Cameroons, FELSCH, p. 405, Arkiv Zool. i, **n. sp.**
- Panelus pygmaeus* MacL. = (*arthuri* Blackb.), LEA, p. 89, P. Linn. Soc. N. S. Wales xxix.
- Phycochus*; tarsal structure, LEA, p. 90, t. c.
- P. sulcipennis*, Tasmania, id. p. 89, pl. iv, fig. 10, t. c. **n. sp.**
- Pleurophorus cæsus* = (*Atenius rugiceps* Dury), BEDEL, p. 152, Abeille xxx.
- Psammodioides australicus*, *obscurior*, Australia, BLACKBURN, p. 174, P. Soc. Victoria xvii, **n. spp.**
- Pseudopedaria n. g.* for *Pedaria grossa* Th., FELSCH, p. 400, Arkiv Zool. i.
- Rhyssenus*; synonymy of French species, CHABAUT, pp. 90–92, Bull. Soc. Nîmes xxxi.
- Saprosites mansuetus*, p. 175, *sternalis*, p. 176, Australia, BLACKBURN, P. Soc. Victoria xvii, **n. spp.**
- Saprus n. g.* near *Saprosites*, p. 178, *S. griffithi n. sp.*, Tasmania, p. 179, BLACKBURN, t. c.
- Thorectes nitidus*, characters, synonymy, *latus* = (*inflatus* Reitt.), *rugosicollis* = (*chalconotus* Cherr.), *semisericeus* = (*rugatulus* Jck.), *punctulatus* = (*brancziki* Apf.), id. p. 140, Bull. Soc. ent. France 1904.
- Thyregis n. g.* *Scatonomides*, p. 145, *T. kershawi n. sp.*, Victoria, p. 146, BLACKBURN, P. Soc. Victoria xvii.
- Tomogonus subg. n.* for *Caccobius castaneus*, D'ORBIGNY, p. 254, Ann. Mus. Genova xli.
- Trox*; Australian, synonymy, descriptions and tables, BLACKBURN, pp. 281–296, Tr. R. Soc. S. Austral. xxviii.
- T. demaisonii*, Asia Minor, REITTER, p. 156, Wien. ent. Zeit. xxiii; *T. nigrociliatus*, *raduloides*, p. 293, *annexus*, *massaicus*, *erlangeri*, *neumannii*, p. 293, *amitinus*, p. 294, Africa, KOLBE, Berlin. ent. Zeitschr. xlix; *T. tasmanicus*, Tasmania, *setosipennis*, p. 292, *eyrensis*, p. 293, *tricolor*, p. 295, *perhispidus*, p. 296, Australia, BLACKBURN, Tr. R. Soc. S. Austral. xxviii : **n. spp.**

Glaphyrini.

Synopsis of *Glaphyrus*, with identification of sexes and synonymy, CHAMPENOIS, Abeille xxx, pp. 137–151.

Hemiglaphyrus subg. n. p. 145, t. c., for *caucasicus* and *modestus*.

Melolonthini.

[Cf. BROUN (184), FAIRMAIRE (473, 474), PÉRINGUEY (1027), PIC (1068).]

The *Melolonthini* of S. Africa, systematic work, PÉRINGUEY, Tr. S. African Soc. xiii, pp. 1–293.

Ablabera hottentota, p. 79, *transvaalica*, *hirticollis*, p. 80, *capicola*, p. 81, *gravidula*, *gratula*, p. 82, *modesta*, *amæna*, p. 83, *matabelena*, *hopeiana*, p. 84, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**

Abladeroides ditissimus, *pavoninus*, p. 62, *emeritus*, *letulus*, p. 64, *tardus*, *pauper*, *cognatus*, p. 66, *namaquanus*, p. 68, *quæsitus*, *decedens*, *ominosus*, p. 70, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Achelyna testacea, Transvaal, PÉRINGUEY, p. 154, t. c. **n. sp.**

- Achloa delicatula*, *blandula*, *echinaticeps*, S. Africa, PÉRINGUEY, t. c. **n. spp.**
Ægostetha simplex, p. 122, *brachiata*, p. 124, S. Africa, PÉRINGUEY, t. c. **n. sp.**
Aipeiopsis **n. g.** *Pachypodinae*, p. 160, *A. hirsuta* **n. sp.**, Cape Colony, p. 161, PÉRINGUEY, t. c.
Allokotarsa **n. g.** near *Serica*, p. 36, *A. rotundicollis*, *clypeata* **n. spp.**, S. Africa, p. 37, PÉRINGUEY, t. c.
Alogistotarsa **n. g.** *Sericinae*, p. 39, *A. straminea*, *ovampoana* **n. spp.**, S. Africa, p. 40, PÉRINGUEY, t. c.
Amphimallus fuscus, metamorphosis, XAMBEU, p. 33, Naturaliste 1904; *A. pygialis*, habits etc., CLERMONT, pp. 104-106, Bull. Soc. ent. France 1904.
Anoxiella Reitt. = (*Schistocometa* Brenske), REITTER, p. 24, Wien. ent. Zeit. xxiii.
Apogonia improba, *mashona*, Rhodesia, PÉRINGUEY, p. 292, Tr. S. African Soc. xiii, **n. sp.**
Arraphytarsa **n. g.** *Sericinae*, *A. damarina* **n. sp.**, S. Africa, PÉRINGUEY, p. 39, t. c.
Atys hybrida, p. 253, *inscita*, *inverta*, p. 254, *infans*, *straminea*, p. 256, *fallax*, *hypocrita*, p. 257, *simplex*, *humilis*, p. 258, S. Africa, PÉRINGUEY, t. c. **n. spp.**
Autoserica tessellata, p. 11, *annectens*, *A. (Lepiserica) partula*, p. 12, *proteana*, *australis*, p. 13, *A. rhodesiana*, *concordans*, p. 14, *distinguenda*, p. 15, S. Africa, PÉRINGUEY, t. c. **n. spp.**
Beriqua **n. g.** *Schizonychides*, p. 185, *B. modesta* **n. sp.**, Cape Colony, p. 186, PÉRINGUEY, t. c.
Brachylepis hauseri (Brenske), Zambesi, PÉRINGUEY, p. 288, **n. sp.**
Camenta transvaalensis, *lydenburgiana*, *capicola*, p. 95, *salisburyana*, *modesta*, p. 96, *coriacea*, p. 97, *simillima*, *inops*, p. 98, *tonguatsana*, p. 99, *pilosella*, *caffrina*, p. 100, *tumida*, *rhodesiana*, p. 101, *matabelena*, *zambesina*, p. 102, *mashona*, p. 103, S. Africa, PÉRINGUEY, t. c. **n. spp.**
Clitopa zambesina, p. 150, *præcalva*, p. 151, S. Africa, PÉRINGUEY, t. c. **n. spp.**
Clypeasta **n. n.** for *Clypearia* Fairm. 1903, FAIRMAIRE, p. 226, Ann. Soc. ent. Belgique xlviii.
Coniopholis proxima, Transvaal, PÉRINGUEY, p. 273, Tr. S. African Soc. xiii, **n. sp.**
Cyclomera riktlatlensis, Mozambique, PÉRINGUEY, p. 140, t. c. **n. sp.**
Diaphoroserica **n. g.** *D. mashona* **n. sp.**, S. Africa, PÉRINGUEY, t. c.
Doleroserica **n. g.** p. 53, *D. gentilis*, *lætula*, p. 54, *festæ*, *auspicata*, p. 55, **n. spp.**, S. Africa, PÉRINGUEY, t. c.
Dolerotarsa **n. g.** near *Serica*, *D. emendatrix* **n. sp.**, Transvaal, PÉRINGUEY, p. 38, t. c.
Empecta latipennis, Madagascar, FAIRMAIRE, p. 126, Ann. Soc. ent. Belgique xlviii, **n. sp.**
E. subcostata, Madagascar, FAIRMAIRE, t. c. **n. sp.**
Entyposis mendax, Rhodesia, PÉRINGUEY, p. 259, Tr. S. African Soc. xiii, **n. sp.**
Etiserica **n. g.** p. 23, *E. simplex* **n. sp.**, Rhodesia, p. 24, PÉRINGUEY, t. c.
Eulepida tschindeana, Mozambique, PÉRINGUEY, p. 285, t. c. **n. sp.**
Euronycha **n. g.** near *Triodonta*, p. 30, *E. rhodesiana*, *sebakuana* **n. spp.**, S. Africa, p. 32, PÉRINGUEY, t. c.
Gamka **n. g.** *Pachypodinae*, p. 159, *G. minuta* **n. sp.**, Cape Colony, p. 160, PÉRINGUEY, t. c.
Glyptoglossa dispar, *namaquensis*, Cape Colony, PÉRINGUEY, t. c. **n. spp.**
Gryphonycha **n. g.** for *Puberula* Fahr., PÉRINGUEY, p. 30, t. c.
Holisonycha **n. g.** near *Schizonycha*, *H. mellila* **n. sp.**, Cape Colony, PÉRINGUEY, p. 261, t. c.

- Hoplia* (*Decamera*) *hauseri*, Turkestan, REITTER, p. 157, Wien. ent. Zeit. xxiii, **n. sp.**
- Hoplotontha* **n. g.** *paviei* **n. sp.**, Cambodia, FAIRMAIRE, p. 87, pl. ix bis, fig. 3, Mission Pavie iii.
- Hyboserica* **n. g.** *H. globuliformis*, Brenske and *Triodonta caffra*, PÉRINGUEY, p. 27, Tr. S. African Soc. xiii.
- Idecamenta* **n. g.** *I. jucunda* **n. sp.**, S. Africa, p. 112, PÉRINGUEY, t. c.
- Idaericia* **n. g.** p. 32, *I. gratula* **n. sp.**, S. Africa, p. 33, PÉRINGUEY, t. c.
- Kraseophylla* **n. g.** near *Macrophylla*, p. 134, *K. distincta* **n. sp.**, Cape Colony, p. 135, PÉRINGUEY, t. c.
- Lachnosterna pinguis*, Cambodia, FAIRMAIRE, p. 88, Mission Pavie iii, **n. sp.**
- Leribe* **n. g.** p. 113, *L. vesca* **n. sp.**, Natal, PÉRINGUEY, Tr. S. African Soc. xiii.
- Liparetrus tuberculatus*, emendation, LEA, p. 89, P. Linn. Soc. N. S. Wales xxix.
- Macrophylla natalensis*, p. 127, *capicola*, *nigricollis*, p. 128, *pubens*, p. 129, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**
- Melolontha*, periodicity in Hungary, Lósy, pp. 301, 304, Allatt. Kozl. Magyar Tars. iii.
- Microcamenta seabakuensis*, p. 87, *ovampoensis*, p. 88, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**
- Mycernus* **n. g.** near *Psilodontia* for *M. elegans* **n. sp.**, New Zealand, BROWN, p. 52, Ann. Nat. Hist. xiv.
- Neoserica transvaalensis*, S. Africa, PÉRINGUEY, p. 22, Tr. S. African Soc. xiii, **n. sp.**
- Oocamenta* **n. g.** p. 105, for *C. rufiventris* Burm. and *O. (Pseudocamenta* subg. n.) *transvaalia* **sp. n.**, Transvaal, p. 107, PÉRINGUEY, t. c.
- Paracamenta* **n. g.** p. 108, for pt. of *Camenta*, with *P. conspicua*, p. 110, *suturalis*, *lydenburgiana*, p. 111, *calva*, p. 112, **n. spp.**, S. Africa, PÉRINGUEY, t. c.
- Pasaphylla* **n. g.** p. 135, near *Macrophylla*, *P. libens* **n. sp.**, Cape Colony, p. 136, PÉRINGUEY, t. c.
- Pegylidius* **n. g.** near *Hypopholis*, p. 279, *P. mashunus* **n. sp.**, Rhodesia, p. 280, PÉRINGUEY, t. c.
- Pericamenta* **n. g.** *P. paupercula* **n. sp.**, Cape Colony, PÉRINGUEY, p. 105, t. c.
- Periclitopa gariiepina*, p. 143, *varicornis*, *dubiosula*, p. 144, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Phytolæma herrmanni* and *Riviera plebeia*, injurious habits, larvæ, RIVERA, pp. 241 etc., Revist. chilena viii.
- Pleiohylla* **n. g.** near *Macrophylla*, p. 130, *P. vestita* **n. sp.**, Cape Colony, p. 131, PÉRINGUEY, Tr. S. African Soc. xiii.
- Pleistophylla* **n. g.** p. 155, *P. singularis* **n. sp.**, Transvaal, p. 156, PÉRINGUEY, t. c.
- Pleophylla tongaatsana*, Natal, PÉRINGUEY, p. 9, t. c.
- Prodontria* **n. g.** p. 53, for *P. lewisii* **n. sp.**, New Zealand, p. 54, BROWN, Ann. Nat. Hist. xiv.
- Pseudachloa* **n. g.** p. 162, *P. leonina* **n. sp.**, S. Africa, p. 163, PÉRINGUEY, Tr. S. African Soc. xiii.
- Pseudocamenta* subg. **n.** see *Oocamenta*.
- Pseustophylla* **n. g.** p. 157, *P. pretoriana* **n. sp.**, Transvaal, p. 158, PÉRINGUEY, Tr. S. African Soc. xiii.
- Psilonychus deridens*, p. 267, *barkeri*, p. 268, *perturbator*, p. 269, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Schizonycha saginata*, p. 201, *boschimana*, p. 202, *idonea*, p. 205, *fartula*, p. 206, *infantilis*, p. 207, *transvaalica*, *parilis*, p. 208, *puerilis*, *disputabilis*, *mediastina*, p. 209, *inedita*, p. 210, *meracula*, *exasperans*, p. 211, *insuesa*, *gonagua*, p. 212, *exacerbens*, *profuga*, p. 213, *continens*,

p. 214, *quæsitæ*, p. 216, *minima*, p. 218, *saga*, *durbana*, p. 219, *perplexabilis*, *dissimilis*, p. 220, *constrata*, p. 221, *plausibilis*, p. 223, *citima*, p. 225, *fraudulenta*, p. 226, *dissensa*, p. 227, *infarsa*, p. 228, *neutra*, p. 229, *immixta*, p. 230, *fraudigera*, *vaalensis*, p. 231, *manicana*, p. 232, *languens*, *ignava*, p. 234, *egens*, *paupercula*, p. 235, *ovampoana*, p. 236, *spuria*, p. 237, *spectabilis*, p. 239, *alga*, *zambesiana*, p. 240, *salisburyana*, p. 241, *elegans*, *furva*, p. 242, *noscitata*, p. 243, *indotata*, p. 245, *fatidica*, *scabiosa*, p. 246, *caffra*, p. 247, *incrata*, p. 248, *confinis*, *divulsa*, p. 249, *inops*, p. 250, *vicaria*, p. 251, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Sebakue **n. g.** near *Schizonycha*, *S. coriacea* **n. sp.**, S. Africa, PÉRINGUEY, p. 264, t. c.

Serica (*Ophthalmoserica*) *rosinæ*, Amurland, PIC, p. 33, Echange 1904, **n. sp.**
Sparrmannia transvaalica, *capicola*, p. 176, *prieska*, *namaqua*, *boschimana*, p. 177, *gonagua*, p. 178, *discrepans*, p. 179, *bechuana*, p. 180, S. Africa, PÉRINGUEY, Tr. S. African Soc. xiii, **n. spp.**

Stenoserica delagoana, *zambesicola*, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Suntemnonycha **n. g.** near *Schizonycha*, *S. collusor* **n. sp.**, Rhodesia, PÉRINGUEY, p. 262, t. c.

Syngeneschiza omrumba, Ovampoland, PÉRINGUEY, p. 261, t. c. **n. sp.**

Tlaocera **n. g.** near *Macrophylla*, *T. saga* **n. sp.**, Cape Colony, PÉRINGUEY, p. 133, t. c.

Trichinopus titania, Damaraland, PÉRINGUEY, p. 165, t. c. **n. sp.**

Trochalus vagus, *damarus*, p. 44, *mashunus*, p. 45, *inops*, *exasperans*, p. 46, *orbiculatus*, p. 48, *placens*, p. 49, *lepidus*, *urbanus*, *sebakuanus*, p. 51, S. Africa, PÉRINGUEY, t. c. **n. spp.**

Tulbaghia **n. g.** near *Microcamenta*, p. 88, *T. lightfooti*, p. 89, *cereris*, p. 90, **n. spp.**, Cape Colony, PÉRINGUEY, t. c.

Rutelini.

[Cf. BATES (92), FAIRMAIRE (473, 474), JACOBSON (740), OHAUS (990, 991).]

Revision of Australian *Anoplognathides*, OHAUS, pp. 57-175, Stettin Ent. Zeit. lxxv.

Revision of American *Anoplognathides*, pt. i, OHAUS, t. c. pp. 254-341.

Revision of *Pelidnotinæ* with table of genera, BATES, Tr. ent. Soc. London 1904, pp. 249-276.

Adoretus ampliatus, p. 226, *rugosohirtus*, p. 227, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Amblyterus clypealis, Australia, OHAUS, p. 165, Stettin Ent. Zeit. lxxv, **n. sp.**

Anomala gudzenkoi, Mantchuria, JACOBSON, p. xiii, Annuaire Mus. St. Petersb. viii, **n. sp.**

Anoplognathus acuminatus, Australia, OHAUS, p. 105, Stettin Ent. Zeit. lxxv, **n. sp.**

Antichira meridionalis, injurious in Jamaica, PANTON, p. 117, Bull. Dep. Agric. Jamaica ii.

Callichloris helleri, p. 334, *kirschi*, p. 335, *bessleri*, p. 336, Peru and Colombia, OHAUS, Stettin Ent. Zeit. lxxv, **n. spp.**

Chrysina beckeri to *Plusiotis*, BATES, p. 272, Tr. ent. Soc. London 1904.

Epichalcoplethis **n. g.**, BATES, p. 253, and ARROW, p. 272, for *Pelidnota velutipes*, ARROW, Tr. ent. Soc. London 1904.

Hoplopelidnota **n. g.** *H. candezei* **n. sp.**, Cayenne, p. 274, BATES, t. c.

Hoplognathus maculatus = (*Pelidn. bimaculata* Cast.), ARROW, p. 260, Tr. ent. Soc. London 1904.

Lasiocala ohausi, Colombia, BATES, p. 273, Tr. ent. Soc. London 1904, **n. sp.**

- Mecopelidnota* **n. g.** p. 270, *M. arrowi*, Ecuador, **n. sp.** p. 271, and including *P. cylindrica* Waterh., BATES, t. c.
- Microrutela* **n. g.** for *Chalcantis cerulea* and *lauta*, BATES, p. 250, t. c.
- Paraschizognathus* **n. g.**, p. 125, for *nigripennis* Bl. etc., and *P. prasini-collis*, p. 128, *olivaceus*, p. 132, **n. spp.**, Australia, OHAUS, Stettin Ent. Zeit. lxxv.
- Pelidnota quadripunctata*, p. 260, *aciculata*, Cayenne, *kirschi*, p. 261, with var. *tenuistriata*, *dubia*, p. 262, Colombia, *acutipennis*, Venezuela, p. 263, *vittipennis*, Brazil, p. 264, *chiriquina*, Panama, p. 265, *paraguayensis*, Paraguay, p. 266, *championi*, Tucuman, *ancilla*, p. 267, *pallidipennis*, p. 268, *fracida*, Brazil, *cayennensis*, Guiana, p. 269, BATES, Tr. ent. Soc. London 1904, **n. spp.**
- Phalangogonia debilidens*, Costa Rica, OHAUS, p. 271, Stettin Ent. Zeit. lxxv, **n. sp.**
- Platycelia inflata*, Bolivia, p. 286, *limbata*, Argentina, p. 288, *steinheili*, Colombia, p. 291, *forcipalis*, Ecuador, p. 293, *occidentalis*, Colombia, p. 296, *abdominalis*, Peru, p. 299, *mesosternalis*, Costa Rica, p. 300, *variolosa*, Colombia, p. 304, *nigrosternalis*, p. 305, with varr. *laevigata*, *pygidialis*, p. 306, *puncticollis*, p. 307, with varr. *bilineata*, *unicolor*, p. 309, *tschudii*, p. 309, *wallisi*, p. 311, *burmeisteri*, p. 312, *unguicularis*, p. 314, *flavoscuteolata*, p. 315, *hirta*, p. 317, *confluens*, p. 318, *chrysotina*, p. 320, *pulchrior*, p. 321, *gaujoni*, p. 323, *rufosignata*, p. 331, N. W. South America, OHAUS, t. c. **n. spp.**
- Plusiotis cupreomarginata*, Costa Rica, BATES, p. 272, Tr. ent. Soc. London 1904, **n. sp.**
- Pseudoschizognathus* **n. g.**, p. 145, *P. variicollis*, p. 146, *schonfeldti*, p. 147, **n. spp.**, Australia, OHAUS, Stettin Ent. Zeit. lxxv.
- Rutela versicolor* Latr. = (*Pelidn. venezuelensis* G. & H.), ARROW, p. 260, Tr. ent. Soc. London 1904.
- Saulostomus felschei*, p. 156, *weiskei*, p. 157, Australia, OHAUS, Stettin Ent. Zeit. lxxv, **n. spp.**
- Schizognathus burmeisteri*, p. 138, *viridiæneus*, p. 140, *lucidus*, p. 142, Australia, OHAUS, t. c. **n. spp.**
- Trioplognathus* **n. g.** for *griseopilosus* Oh., OHAUS, p. 133, t. c.
- Xenopelidnota* **n. g.** for *Plusiotis anomala*, BATES, p. 275, Tr. ent. Soc. London 1904.

Dynastini.

- [Cf. BRETHER (175), BROUN (184), KOLBE (830), STERNBERG (1344).]
- Aegopsis atra*, Chiriqui, Colombia, p. 21, *trinidadensis*, Trinidad, p. 24, *nigricollis*, Colombia, p. 26, *rubricollis*, Orinoco, p. 28, STERNBERG, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Alcidossoma siamensis*, and ♂ minor, pl. ix bis fig. 2, p. 51, Mission Pavie iii.
- Cyclocephala tucumana*, p. 330, *andina*, p. 331, Tucuman, BRÈTHES, An. Mus. Buenos Aires xi, **n. spp.**
- Peltonotus morio*, ♂, FAIRMAIRE, p. 88, Mission Pavie iii.
- Pentodon subdilatatus*, *idiota*, note, pp. xv-xvii; *P. reitteri* n. n., p. xvi, JAKOVLEV, Annuaire Mus. St. Petersb. ix.
- Pericoptus frontalis*, New Zealand, BROUN, p. 55, Ann. Nat. Hist. xiv, **n. sp.**
- Temnorhynchus glauvingi*, Lake Tchad, KOLBE, p. 295, Berlin. ent. Zeitschr. xlix, **n. sp.**

Cetoniini.

- [Cf. FAIRMAIRE (473, 474), HAUSER (664), HEATH (668), KOLBE (830, 831), MOSER (964, 965), PIC (1075), PREISS (1106).]
- Structure and classification of *Valgide*, KOLBE, pp. 3-9, Stettin Ent. Zeit. lxxv.

- Amaurina polysticta* var. n. *picticollis*, MOSER, p. 66, Berlin. ent. Zeitschr. xlix.
- Anepsiovalgus* n. g., p. 30, *A. minimus* n. sp., Sumatra, p. 32, KOLBE, Stettin Ent. Zeit. lxxv.
- Anochilia subvidua*, p. 227, *laterivirens*, p. 228, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, n. spp.
- Bothrorrhina nickerli* ♀, HELLER, p. 12, Deutsche ent. Zeitschr. 1904; *B. rufonasuta* Fairm. = (*nickerli* Hell.), HELLER, p. 303, t. c.
- Brachymitra* n. g. near *Compocephalus*, *B. thomasi* n. sp., E. Africa, KOLBE, p. 297, Berlin. ent. Zeitschr. xlix.
- Callinomes rufiventris*, Laos, FAIRMAIRE, p. 86, Mission Pavie iii, n. sp.
- Charitovalgus*, n. g. p. 20 for *Valgus pulcher*, *dorie*, and *C. andamanicus* n. sp., Andamans, p. 22, KOLBE, Stettin Ent. Zeit. lxxv.
- Clinteria usambarica*, E. Africa, MOSER, p. 60, Berlin. ent. Zeitschr. xlix, n. sp.
- Cœlorrhina cornuta*, E. Africa, p. 101, fig. 2, HEATH, Entomologist 1904, n. sp.
- Coptomia bontempsi*, characters, FAIRMAIRE, p. 229, Ann. Soc. ent. Belgique xlviii.
- C. castanoptera*, Madagascar, FAIRMAIRE, p. 228, t. c. n. sp.
- Cyclophorus marginicollis*, Sao-Thomé, MOSER, p. 59, Berlin. ent. Zeitschr. xlix, n. sp.
- Dasyvalgus* n. g. p. 34, for part of *Valgus*, and *D. infuscatus*, Borneo, p. 37, *udei*, Sumatra, p. 38, *rollei*, p. 39, *monachus* with subsp. *polyxanthus*, p. 40, Borneo, *dohrni*, Sumatra, p. 41, *eucharis*, Malacca, p. 42, n. spp., KOLBE, Stettin Ent. Zeit. lxxv; *D. pygidialis*, Sumatra, p. 267, *striatipennis*, Perak, p. 268, *bipustulatus*, Borneo, *fraterculus*, Sumatra, p. 269, *piceus*, Tonkin, p. 270, *nigerrimus*, Borneo, p. 271, MOSER, Berlin. Ent. Zeitschr. xlix: n. spp.
- Diphrontis hintzi*, E. Africa, MOSER, p. 70, t. c. n. sp.
- Dischista marginata*, E. Africa, MOSER, p. 6, t. c. n. sp.
- Discopeltis picta*, p. 66, *variabilis*, p. 67, with varr., pp. 68, 69, E. Africa MOSER, t. c. n. spp.
- Euchilia laevicostata*, *satarata*, *protensa*, *externecostata*, Madagascar, FAIRMAIRE, p. 230, Ann. Soc. ent. Belgique xlviii, n. spp.
- Eucosma flavosignata*, Sao-Thomé, MOSER, p. 64, Berlin. Ent. Zeitschr. xlix, n. sp.
- Eudicella immaculata*, Uganda, HEATH, p. 102, fig. 1, Entomologist 1904, n. sp.
- Fornasinius hirthi*, E. Africa, PREISS, p. 15, pl. i, fig. 1, Jahrb. nassau. Ver. lvii, n. sp.
- Goliathopsis lameyi*, pl. ix bis, fig. 5, p. 90, FAIRMAIRE, Mission Pavie iii.
- Goliathus giganteus*, var. n. *connectens*, CSIKI, p. 302, Ann. Mus. Hungar. ii; *G. giganteus*, var. n. *grandis*, VEEN, pp. 64–66, pl., Bull. kol. Mus. Haarlem xxx.
- Hoplitovalgus* n. g. *H. fallaciosus* n. sp., Borneo, KOLBE, p. 49, Stettin Ent. Zeit. lxxv.
- Hybovalgus* n. g. p. 55, *H. bioculatus* n. sp., Tonkin, p. 56, KOLBE, t. c.; *H. tonkinensis*, *fulvosquamosus*, Tonkin, MOSER, p. 272, Berlin. ent. Zeitschr. xlix, n. spp.
- Ischyrocera* n. g. p. 34, *I. darcisi* n. sp., Africa, p. 35, HAUSER, Deutsche ent. Zeitschr. 1904.
- Leucocelis elegans*, var. n. *ornaticollis*, MOSER, p. 66, Berlin. ent. Zeitschr. xlix.
- L. ertli*, pl. i, fig. 4, p. 22, *bucobensis*, fig. 5, p. 24, *irentina*, fig. 6, p. 25, *angustiformis*, fig. 7, p. 26, PREISS, Jahrb. nassau. Ver. lvii, n. spp.
- Nannovalgus* n. g. p. 26, *N. pusio* n. sp., Borneo, p. 27, KOLBE, Stettin Ent. Zeit. lxxv.

- Neophædimus melaleucus*, pl. ix bis, fig. 4, p. 89, FAIRMAIRE, Mission Pavie iii.
- Neptunides polychrous* var. n. *marginipennis*, MOSER, p. 59, Berlin. ent. Zeitschr. 1904.
- Oreovalgus* n. g. p. 18, *O. montuosicollis* n. sp., Borneo, p. 19, KOLBE, Stettin Ent. Zeit. lxx.
- Osmoderma brevripennis*, Taurus, PIC, p. 74 & p. 83, Echange xx, n. sp.
- Oxythyrea albomaculata*, E. Africa, MOSER, p. 65, Berlin. ent. Zeitschr. xlix, n. sp.
- Pachnoda discolor* var., pl. i, fig. 2, p. 19, PREISS, Jahrb. nassau. Ver. lvii.
- P. testaceipennis*, E. Africa, MOSER, p. 61, Berlin. ent. Zeitschr. xlix;
- P. saubertichi*, E. Africa, HAUSER, p. 36, Deutsche ent. Zeitschr. 1904: n. spp.
- Pædiovulgus* n. g. p. 14, *P. micros* n. sp., Borneo, p. 15, with varr. *parvus*, *lineellus*, *morio*, p. 17, KOLBE, Stettin Ent. Zeit. lxx.
- Paraleucocelis* n. g. *P. conradsi*, n. sp. E. Africa, pl. i, fig. 3, PREISS, p. 21, Jahrb. nassau. Ver. lvii.
- Parapæcilophila* n. g. p. 36, *P. kraatzi* n. sp., E. Africa, p. 37, HAUSER, Deutsche ent. Zeitschr. 1904.
- Piochilia* Fairm. and *Prochyta* Fairm. are the same, *P. scalabri* ♂, FAIRMAIRE, p. 227, Ann. Soc. ent Belgique xlviii.
- Plocovalgus* n. g. *P. waterstradti* n. sp., Borneo and subsp. *rufosquamosa*, KOLBE, p. 45, Stettin Ent. Zeit. lxx.
- Pæcilophila tessellata*, E. Africa, MOSER, p. 69, Berlin. ent. Zeitschr. xlix, n. sp.
- Potosia affinis*, *cuprea*, *incerta*, distinctions, MÜLLER, pp. 172, 173, Wien. ent. Zeit. xxiii.
- Pseudinca moseri*, Nyassa, HAUSER, p. 38, Deutsche ent. Zeitschr. 1904, n. sp.
- Pygora luctifera*, variation, synonymy, FAIRMAIRE, p. 229, Ann. Soc. ent. Belgique xlviii.
- Ranzania bertolonii* minor subsp. n., KOLBE, p. 298, Berlin. ent. Zeitschr. xlix.
- Sphinctovalgus* n. g. p. 51, *S. conradti* n. sp., Cameroons, p. 53, KOLBE, Stettin Ent. Zeit. lxx.
- Spilovalgus* n. g. for *Valgus modiglianii* Gestro, KOLBE, p. 32, Stettin Ent. Zeit. lxx; *S. biguttatus*, Perak, p. 266, *propygidialis*, Assam, p. 267, MOSER, Berlin. ent. Zeitschr. xlix, n. spp.
- Syngonovulgus* n. g. p. 28, *S. subnitidus* n. sp., Borneo and Sumatra, p. 29, KOLBE, Stettin Ent. Zeit. lxx.
- Systellorhina tricolor*, p. 62, *kolbei*, p. 63, E. Africa, MOSER, Berlin. ent. Zeitschr. xlix, n. spp.
- Theodosia telifer*=(*rothschildi* Jans.), MOSER, p. 273, t. c.
- Trapezorrhina* n. g. p. 33, *T. sordida* n. sp., Africa, p. 34, HAUSER, Deutsche ent. Zeitschr. 1904.
- Trichovalgus* subg. n. of *Dasyvalgus* for *niger* Kr., KOLBE, p. 44, Stettin Ent. Zeit. lxx.
- Valgus keysseri*, N. Guinea, HAUSER, p. 40, Deutsche ent. Zeitschr. 1904, n. sp.

BUPRESTIDÆ.

[Cf. ABEILLE (1, 5), ESCALERA (467), FAIRMAIRE (473), FAUVEL (486), JAKOVLEFF (752, 753), KERREMANS (786, 787), PIC (1065), RAINBOW (1119), REITTER (1141, 1155), SCHAEFFER (1220), THÉRY (1377, 1378), WATERHOUSE (1491).]

The *Buprestidæ* of trop. Africa, pt. 1, *Julodines*, KERREMANS, Ann. Mus. Congo, Zool. iii, 1, 65 pp., 1 pl.

Addenda and corrigenda to Kerremans' Genera, PIC, Bull. Soc. zool. France xxix, pp. 135-138.

- Acherusia saundersii*, Brazil, WATERHOUSE, p. 249, Ann. Nat. Hist. xiv, **n. sp.**
- Acmeodera*; synonymy, WATERHOUSE, pp. 258–265, t. c.; *A. hirsutula* var. n. *æquistriata*, p. 221, *A. laticornis* var. n. *olivacea*, p. 223, ABEILLE, Bol. Soc. espan. iv.
- A. varivestis*, Tunis, p. 220, *crucifera*, Persia, p. 221, *pilivestis*, Spain, *nigellata*, Portugal, p. 222, ABEILLE, t. c.; *A. akbesiana*, Syria, p. 224, *segurensis*, Spain, p. 225, ESCALERA, Bol. Soc. espan. iv; *A. saundersii*, *sumptuosa*, p. 261, Africa, *jamesi*, Somali land, p. 262, *de geeri*, Transvaal, p. 263, *tricolor*, Damara, *brooksi*, Buluwayo, p. 264, *yerburi*, Arabia, p. 265, WATERHOUSE, Ann. Nat. Hist. xiv; *A. suturifera*, Afghanistan, p. 256, *filiformis*, p. 257, Gobi, REITTER, Wien. ent. Zeit. xxiii; *A. rubescens*, Lower California, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii : **n. spp.**
- Actenodes flexicaulis*, Texas, SCHAEFFER, p. 209, t. c. **n. sp.**
- Agrilus chlorophyllus*, Akbès, ABEILLE, p. 223, Bol. Soc. espan. iv; *A. horni*, p. 161, *aurociliatus*, *nalanda*, p. 162, *kandyanus*, *atomus*, p. 163, *motschoulskyi*, p. 164, *walkeri*, p. 165, Ceylon, THÉRY, Ann. Soc. ent. Belgique xlviii; *A. dollii*, Texas, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii : **n. spp.**
- Ancylocheira*; notes on palaearctic, ABEILLE, pp. 213, 214, Bol. Soc. espan. iv.
- A. severa*, Syria, id. p. 213, t. c. **n. sp.**
- Anthaxia schah*, Persia, *fulgentipennis*, Algeria, p. 215, *permisa*, Persia, p. 217, ABEILLE, t. c. **n. spp.**
- Astreus caledonicus*, New Caledonia, FAUVEL, p. 116, Rev. Ent. franc. 1904, **n. sp.**
- Aurigena lugubris* = (*æreiventris europæa* Ab.), BEDEL, p. 236, Abeille xxx.
- A. guttipennis*, Persia, ABEILLE, p. 213, Bol. Soc. espan. iv, **n. sp.**
- Buprestis alternans*, Syria, *escalera*, Persia, ABEILLE, p. 212, t. c. **n. spp.**
- Capnodis miliaris* var. n. *aurata*, ABEILLE, p. 211, t. c.
- Cardiaspis pisciformis*, Mysore, THÉRY, p. 73, Bull. Soc. ent. France 1904, **n. sp.**
- Castalia pulchra*, India, p. 252, *fairmairei*, Tonkin, *bettoni*, E. Africa, p. 253, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Chrysaspis*; synonymy, WATERHOUSE, pp. 344–347, t. c.
- C. glabra*, p. 344, *tincta*, *dubia*, *bennettii*, p. 346, *higletti*, p. 347, Africa, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Chrysobothris amurensis*, Amurland, PIC, p. 25, Echange 1904; *C. musæ*, Ceylon, THÉRY, p. 160, Ann. Soc. ent. Belgique xlviii; *C. purpureo-plagiata*, Arizona, p. 206, *beyeri*, *peninsularis*, Lower California, p. 207, *subapaca*, (sic) Tulare, p. 208, SCHAEFFER, J. N. York Ent. Soc. xii : **n. spp.**
- Chrysochroa fruhstorferi*, Tonkin, *thelwalli*, Nyassa, WATERHOUSE, p. 266, Ann. Nat. Hist. xiv, **n. spp.**
- Cinyra prosternalis*, Texas, SCHAEFFER, p. 205, J. N. York Ent. Soc. xii, **n. sp.**
- Compsoglyph* **n. g.** near *Psiloptera*, *C. perrieri* **n. sp.**, Madagascar, FAIRMAIRE, p. 233, Ann. Soc. ent. Belgique xlviii.
- Conognatha mayeti*, Peru, THÉRY, p. 75, Bull. Soc. ent. France 1904, **n. sp.**
- Coræbus helichrysi*, France, ABEILLE, p. 282, Bull. Soc. ent. France 1904, **n. sp.**
- Cylindromorphus turkestanicus*, Turkestan, ABEILLE, p. 224, Bol. Soc. espan. iv, **n. sp.**
- Demochroa bowringi*, N. India, *meldolana*, Andamans, WATERHOUSE, p. 265, Ann. Nat. Hist. xiv, **n. spp.**
- Dicerca*; table of palæarctic, REITTER, pp. 21–24, Wien. ent. Zeit. xxiii.
- D. miranda*, Herzegowina, id. t. c. p. 24, **n. sp.**

- Discoderes polychrous, cavifrons*, Madagascar, FAIRMAIRE, p. 234, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Julodis onopordi* variation, varr. *n. longicollis, derasa*, etc., ABEILLE, pp. 207–210, Bol. Soc. espan. iv.
- J. escalera, monstrosa*, Persia, ABEILLE, p. 206, t. c. **n. spp.**
- Lampropepla n. n.* for *Madecassia* Kerr., *L. ophthalmica n. sp.*, Madagascar, FAIRMAIRE, p. 231, Ann. Soc. ent. Belgique xlviii.
- Mastogenius reticulaticollis*, Texas, SCHAEFFER, p. 210, J. N. York Ent. Soc. xii, **n. sp.**
- Melanophila sumptuosa*, Spain, ABEILLE, p. 214, Bol. Soc. espan. iv, **n. sp.**
- Nalanda n. g.* near *Melibæus*, *N. horni n. sp.*, Ceylon, THÉRY, p. 160, Ann. Soc. ent. Belgique xlviii.
- Paracastalia longipennis*, p. 249, *bettoni*, p. 250, *variegata*, p. 251, Africa, WATERHOUSE, Ann. Nat. Hist. xiv, **n. spp.**
- Polybothris pulchriventris*, p. 232, *pygidialis*, p. 233, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Polycesta*; synonymy, WATERHOUSE, pp. 254–258, Ann. Nat. Hist. xiv.
- P. alternans*, Mexico, *regularis*, St Domingo, p. 256, *gossei*, Jamaica, p. 257, *variegata*, Mexico, p. 258, WATERHOUSE, t. c. **n. spp.**
- Ptosima*; only one Pal. species; *P. 11-maculata* var. *n. intermedia*, DEMAISSON, p. 285, Bull. Soc. ent. France 1904; *P. amalibis* var. *n. hieroglyphica*, THÉRY, p. 158, Ann. Soc. ent. Belgique xlviii.
- Rhæboscelis texana*, Brownsville, SCHAEFFER, p. 211, J. N. York Ent. Soc. xii, **n. sp.**
- Sphenoptera luctifica n. n.* for *luctuosa* Jak., JAKOVLEFF, p. 310, Rev. Russe Ent. 1904; *S. perroteti* var. *n. rugosiventris*, THÉRY, p. 159, Ann. Soc. ent. Belgique xlviii.
- S. (Hoplandrocneme) venusta*, Tiflis, JAKOVLEFF, p. 309, Rev. Russe Ent. 1904; *S. longipennis*, Issyk-Kul, p. 174, *cæsia*, Buchara, p. 175, *luctuosa*, Dsungaria, p. 177, *S. (Hoplistura) ligulata*, Persia, p. 178, *grata*, Cairo, p. 180, *S. (Chrysoblemma) seriola*, Algeria, p. 181, *S. (Chilostetha) cauta*, Syria, p. 183, *S. (Deudora) caspica*, p. 184, Caspian, JAKOVLEFF, Horæ Soc. ent. Ross. xxxvii; *S. horni*, Ceylon, THÉRY, p. 159, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Steraspis arabica*, Muscat, WATERHOUSE, p. 348, Ann. Nat. Hist. xiv, **n. sp.**
- Sternocera*; much synonymy, WATERHOUSE, pp. 245–248, t. c.
- S. druryi*, Sudan, *stevensii*, Africa, WATERHOUSE, p. 247, t. c. **n. spp.**
- Stigmodera cydista*, Sydney, RAINBOW, p. 246, Rec. Austral. Mus. v, **n. sp.**
- Strobilodera gastoni*, E. Africa, THÉRY, p. 74, Bull. Soc. ent. France 1904, **n. sp.**
- Trachys horni*, p. 165, *bellicosa*, p. 166, *pretiosus, centrimaculatus*, p. 167, Ceylon, THÉRY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

EUCNEMIDÆ.

[Cf. BLANCHARD (135), FAIRMAIRE (473), FAUVEL (486).]

- Cephalodendron sicardi*, Madagascar, FAIRMAIRE, p. 235, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Dromæolus hospitalis*, California, BLANCHARD, p. 187, Ent. News Philad. xv, **n. sp.**
- Fornax caledonicus*, p. 121, *ferrugineus, brevicornis, soricinus*, p. 122, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**

ELATERIDÆ.

[Cf. CARRET (246), DU BUYSSON (214, 215, 216), DANIEL & DANIEL (349), FAIRMAIRE (473), FAUVEL (486), FLEUTIAUX (518), PIC (1059, 1065), RAINBOW (1119), REITTER (1151, 1152, 1156), SCHWARZ (1265, 1266).]

- Adelocera subaurata*, Ceylon, SCHWARZ, p. 46, Spolia Zeylan. ii, **n. sp.**
Æolus dimidiatofasciatus, Sao Paulo, SCHWARZ, p. 71, Deutsche ent. Zeitschr. 1904, **n. sp.**
Agriotes conspicuus, characters, DU BUYSSON, p. 1, Rev. Ent. franc. xxiii.
Agriotes dilataticoxis, Morocco, DU BUYSSON, p. 42, t. c.; *A. nigropubens*, Asia Minor, REITTER, p. 158, Wien. ent. Zeit. xxiii : **n. spp.**
Anoploschium mutabilis, variation, SCHWARZ, p. 11, Deutsche ent. Zeitschr. 1904; *A. anguineus* Er. = (*basalis* = *femoralis* Schw.), id. p. 15, t. c.
A. mutabilis, p. 51, *æneipennis*, p. 52, *trivittatus*, p. 53, *punctatissimus*, p. 54, *nigrolaterus*, p. 55, S. America, SCHWARZ, t. c. **n. spp.**
Athous uncollis varr. n. *gredosanus* and *uhagoni*, REITTER, p. 237, Bol. Soc. espan. iv.
A. subvirgatus, Venetia, K. DANIEL, p. 79, Munchen. Kol. Zeitschr. ii; *A. villardi*, Genoa, CARRET, p. 170, Bull. Soc. ent. France 1904; *A. (Stenagostus) laufferi*, p. 236, *A. (Nomopleus) discors*, p. 237, *martinezi*, *longissimus*, p. 238, *A. (Gripathous) bolivari*, p. 239, Spain, REITTER, Bol. Soc. espan. iv; *A. bagdadensis*, Bagdad, p. 6, *uhagoni*, Spain, p. 7, DU BUYSSON, Rev. Ent. franc. xxiii; for further notes on these and their possible synonymism, cf. t. c. pp. 156, 157; *A. eximius*, p. 58, *insulsus*, p. 59, Amurland, *nadari*, Basses Pyrénées, p. 60, DU BUYSSON, Bull. Soc. ent. France 1904 : **n. spp.**
Atractosomus angustus, p. 59, *pedestris*, p. 60, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1904; *A. testaceipennis*, Brazil, SCHWARZ, p. 70, Deutsche ent. Zeitschr. 1904 : **n. spp.**
Campylus korbi, Amurland, PIC, p. 25, Echange 1904, **n. sp.**
Cardiophorus eliasi, Amanus Mts., PIC, p. 298, Bull. Soc. ent. France 1904; *C. æneipennis*, Madagascar, FLEUTIAUX, p. 12, Bull. Soc. ent. France 1904 : **n. spp.**
Cardiorhinus divaricatus, p. 62, *intermedius*, p. 63, *ruficollis*, p. 64, *infernus*, p. 65, *dimidiatus*, p. 66, *collaris*, p. 67, *cylindricus*, p. 68, Brazil, SCHWARZ, Deutsche ent. Zeitschr. 1904, **n. spp.**
Clon cerambycinus, ♀, SEMENOV, p. 120, Rev. Russe Ent. iv.
Corymbitodes subg. n. of *Ludius*, *C. longicollis* **n. sp.**, Amurland, DU BUYSSON, p. 58, Bull. Soc. ent. France 1904.
Cosmesus posticinus, Brazil, SCHWARZ, p. 69, Deutsche ent. Zeitschr. 1904; *C. cruciger*, p. 79, *atomus*, Argentina, *chiliensis*, *minusculus*, Chili, p. 80, SCHWARZ, t. c. : **n. spp.**
Didymolophus **n. g.** near *Dichelonychus*, p. 235, *D. perrieri* **n. sp.**, Madagascar, p. 236, FAIRMAIRE, Ann. Soc. ent. Belgique lxviii.
Elater gelincki, Herzegowina, REITTER, p. 148, Wien. ent. Zeit. xxiii; *E. nigrita*, *frontalis*, p. 128, *marginellus*, p. 129, New Caledonia, FAUVEL, Rev. Ent. franc. 1904 : **n. spp.**
Grammophorus bruchi, Argentina, p. 71, *minor*, Chili, p. 72, SCHWARZ, Deutsche ent. Zeitschr. 1904, **n. spp.**
Horistonotus bicolor, Sydney, RAINBOW, p. 246, Rec. Austral. Mus. v, **n. sp.**
Ischiodontus laterus, p. 55, *testaceus*, p. 56, *æneus*, p. 57, *bivittatus*, p. 58, *ellipticus*, p. 59, S. America, SCHWARZ, Deutsche ent. Zeitschr. 1904, **n. spp.**
Isidus; characters and position, DU BUYSSON, p. 7, Rev. Ent. franc. xxiii.
Ludius, cf. *Corymbitodes*.
Melanoxanthus picturatus, New Caledonia, FAUVEL, p. 131, Rev. Ent. franc. 1904, **n. sp.**
Monocrepidius brachypterus, Lifu, FAUVEL, p. 127, t. c.; *M. chilensis*, Chili, SCHWARZ, p. 70, Deutsche ent. Zeitschr. 1904 : **n. spp.**
Ochosternus pacificus, *cribriceps*, p. 134, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
Pomachilius brevicornis, Brazil, SCHWARZ, p. 61, Deutsche ent. Zeitschr. 1904; *P. fulvescens*, *apicatus*, p. 73, *preterminatus*, *scriptus*, p. 74, mul-

timaculatus, p. 75, *variegatus*, p. 76, *cinctipennis*, p. 77, *krugi*, *polygrammus*, p. 78, S. America, SCHWARZ, t. c. : **n. spp.**
Semiotus subvirescens, Ecuador, p. 49, *alternatus*, Venezuela, p. 50, SCHWARZ, t. c. **n. spp.**

RHIPICERIDÆ and DASCILLIDÆ.

[Cf. FAIRMAIRE (474, 476, 478), FAUVEL (486).]

Agathorhipis **n. g.** *Rhipiceridæ*, *A. bifossata* **n. sp.**, New Caledonia, FAUVEL, p. 136, Rev. Ent. franc. 1904.

Cladotoma bruchii, Tucuman, FAIRMAIRE, p. 61, Bull. Soc. ent. France 1904 ; *C. russula*, p. 154, *maculicollis*, p. 155, Brazil, FAIRMAIRE, t. c. : **n. spp.**

Eubrianax insignis, Indo China, FAIRMAIRE, p. 87, Mission Pavie iii, **n. sp.**
Pseudolichas nivipictus, Laos, FAIRMAIRE, p. 86, t. c. **n. sp.**

MALACODERMIDÆ.

[Cf. BOURGEOIS (160, 161), FAIRMAIRE (473), FAUVEL (486), FIORI (509), PIC (1055, 1058, 1060, 1062, 1065, 1066, 1068, 1071, 1074, 1075, 1077), REITTER (1152), SCHAEFFER (1220), TOWNSEND (1392).]

Malacodermidæ, collected by BURCHELL in S. Africa and Brazil, BOURGEOIS (161).

Gigantic larva, *Lampyrides*, described, LUCAS, p. 104, Mission Pavie iii.
 Light-organ, *Photinus*, TOWNSEND (1392).

Acanthocnemus = (*Eurema* Ab. = *Hovacnemus* Fairm.), there is only one species known, BOURGEOIS, pp. 25, 26, Bull. Soc. ent. France 1904.

Anthonomus [sic] *martini*, Natal, PIC, p. 27, Echange 1904, **n. sp.**

Astylus longipennis, Brazil, PIC, p. 29, t. c. **n. sp.**

Attalus africanus, Natal, PIC, p. 28, t. c. ; *A. (Mixis) rufithorax*, S. Africa, PIC, p. 33, t. c. : **n. spp.**

Balanophorus macleayi, pl. iv, fig. 8, p. 91 ; LEA, P. Linn. Soc. N. S. Wales xxix.

Calosotis? barkeri, Natal, PIC, p. 66, Echange xx, **n. sp.**

Cantharis livida var. *n. varendorffi*, REITTER, p. 159, Wien. ent. Zeit. xxiii ; *C. brachypterus* ♀ ; *malatiensis* var. *n. detectiventris*, PIC, p. 71, Bull. Soc. ent. France 1904.

C. ponticus, cilicius, Asia Minor, PIC, p. 9, Echange ix ; *C. raddensis*, Amurland, PIC, p. 26, Echange 1904 : **n. spp.**

Celetes burchelli, Brazil, BOURGEOIS, p. 93, Ann. Nat. Hist. xiii, **n. sp.**

Cenophengus? pallidus, Texas, SCHAEFFER, p. 213, J. N. York Ent. Soc. xii, **n. sp.**

Chlamydolycus burchelli, S. Africa, BOURGEOIS, p. 91, Ann. Nat. Hist. xiii, **n. sp.**

Cyrtosus subcylindricus, Syria, PIC, p. 3, Echange 1904 ; *C. diversicornis*, Algeria, PIC, p. 34, t. c. : **n. spp.**

Danacea martini, Spain, p. 2, *holtzi*, Taurus, p. 3, PIC, t. c. ; *D. tauricola, nitidissima*, Taurus, PIC, p. 73, t. c. : **n. spp.**

Dichelotarsus sulcithorax, Japan, PIC, p. 26, t. c. **n. sp.**

Drilus? kandyanus, Ceylon, BOURGEOIS, p. 481, Ann. Soc. ent. France 1903, **n. sp.**

Ebæomorphus **n. g.** *E. ramicornis* **n. sp.**, Natal, PIC, p. 28, Echange 1904.

Ebeus italicus, Rome, REITTER, p. 159, Wien. ent. Zeit. xxiii ; *E. amurensis*, Amur, PIC, p. 50, Echange xx ; *E. bahiensis*, Brazil, PIC, p. 28, t. c. : **n. spp.**

Eurema, cf. *Acanthocnemus*.

- Hapalochrous martini*, Natal, PIC, p. 28, Echange 1904 ; *H. appendicifer*, Cape Colony, PIC, p. 34, t. c. : **n. spp.**
- Henicopus plumbeus, pilosus*, distinctions, MÜLLER, p. 174, Wien. ent. Zeit. xxiii.
- Hovacnemus*, cf. *Acanthocnemus*.
- Idgia puncticollis*, S. India, BOURGEOIS, p. 483, Ann. Soc. ent. France 1903, **n. sp.**
- Luciola xanthochroa*, Madagascar, FAIRMAIRE, p. 236, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Malachinus akbesianus* ♂, PIC, p. 216, Bull. Soc. ent. France 1904.
- M. cressius*, Crete, PIC, p. 10, Echange 1904 ; *M. elaphus*, ♀, PIC, p. 42, Bull. Soc. ent. France 1904 ; *M. lusitanicus*, habits, larva, XAMBEU, pp. 58-63, Soc. Pyrenees-or. xlv ; *M. arctelimbatus*, p. 287, *japonicus*, p. 288, Japan, PIC, Bull. Soc. ent. France : **n. spp.**
- Malthinus flavicollis*, Spain, PIC, p. 4, Echange 1904 ; *M. (Progeutes) drurei*, Bagdad, PIC, t. c. : **n. spp.**
- Malthodes (Podistrina) arbaensis*, Tunis, PIC, p. 3, Echange 1904 ; *M. holtzi*, Crete, PIC, p. 9, t. c. ; *M. malcolmi*, Malta, PIC, p. 49, t. c. ; *M. (Malthinellus) messenius*, p. 74, *M. (Podistrina) raguse*, p. 75, Sicily, FIORI, Natural. Sicil. xvii : **n. spp.**
- Megalophthalmus ptiliniformis*, Pará, BOURGEOIS, p. 98, Ann. Nat. Hist. xiii, **n. sp.**
- Melyris crenicollis*, Algeria, PIC, p. 90, Echange xx, **n. sp.**
- Neocarpurus impunctatus*, pl. iv, fig. 9, p. 91, LEA, P. Linn. Soc. N. S. Wales xxix.
- Pagurodactylus? apicalis*, Natal, PIC, p. 66, Echange xx, **n. sp.**
- Paraptorthodius* **n. g.** near *Ptorthodius*, *P. mirabilis* **n. sp.**, Texas, SCHAEFFER, p. 212, J. N. York Ent. Soc. xii.
- Plateros variocostatus*, Brazil, BOURGEOIS, p. 94, Ann. Nat. Hist. xii, **n. sp.**
- Platycis cosnardi raddensis* subsp. n., PIC, p. 25, Echange 1904.
- Podabrus rosinae*, Amurland, PIC, p. 25, t. c. **n. sp.**
- Pseudocolotes capensis, notatithorax*, S. Africa, PIC, p. 11, t. c. **n. spp.**
- Rhagonycha ericeti* and allies, PIC, p. 54, t. c.
- Selasia maindroni*, Genji, BOURGEOIS, p. 482, Ann. Soc. ent. France 1903, **n. sp.**
- Semijulistus*, characters and components, SEMENOV, p. 121, Rev. Russe Ent. iv.
- Silis nigrifrons*, Madagascar, FAIRMAIRE, p. 237, Ann. Soc. ent. Belgique xlviii ; *S. maindroni*, Nilgiri Hills, BOURGEOIS, p. 480, Ann. Soc. ent. France 1904 : **n. spp.**
- Sphinginopalpus martini*, Natal, PIC, p. 12, Bull. Soc. ent. France 1904 ; *S. barkeri, formicoides, limbatus*, S. Africa, PIC, p. 65, Echange xx : **n. spp.**
- Telephorus fuscus*, larval habits, REMER, pp. 12, 13, Jahresber. Schlesisch. Ges. 1903, zool.-bot. sekt.
- Tylocerus apicalis*, Ceylon, BOURGEOIS, p. 479, Ann. Soc. ent. France 1903, **n. sp.**
- Tytthonyx ruficollis*, Texas, SCHAEFFER, p. 214, J. N. York Ent. Soc. xii, **n. sp.**
- Xamerpus rubronotatus*, Madagascar, PIC, p. 11, Echange 1904 ; *X. obscurus*, Natal, PIC, p. 28, t. c. : **n. spp.**

CLERIDÆ.

[Cf. FAUVEL (486), HOULBERT & BÉTIS (721), SCHAEFFER (1220), SCHENKLING (1226).]

- Clerus palmii*, Arizona, SCHAEFFER, p. 218, J. N. York Ent. Soc. xii, **n. sp.**
- Colyphus furcatus*, Texas, SCHAEFFER, p. 218, t. c. **n. sp.**

- Cymatodera peninsularis*, Lower California, p. 214, *obliquefasciata*, p. 215, *fuchsii*, Texas, *latefascia*, Arizona, p. 216, *vandykei*, California, p. 217, SCHAEFFER, t. c. : **n. spp.**
- Enoplum granulatiptenne*, p. 220, *nigrescens*, p. 221, Texas, SCHAEFFER, t. c. : **n. spp.**
- Hydnocera tricolor*, Texas, SCHAEFFER, p. 219, t. c. **n. sp.**
- Ommadius diversicollis*, New Caledonia, FAUVEL, p. 146, Rev. Ent. franc. 1904, **n. sp.**
- Pelonium maculicolle*, Texas, SCHAEFFER, p. 219, J. N. York Ent. Soc. xii, **n. sp.**
- Phlaeocopus*, monograph, SCHENKLING, pp. 169–186, Ann. Mus. Genova xli.
- P. verticalis*, Somaliland, p. 183, *obscurus*, Madagascar, p. 186, id. t. c. **n. spp.**
- Trichodes kraatzi* var. = (*turkestanicus*), HINTZ, p. 420, Deutsche ent. Zeitschr. 1904 ; *T. kraatzi* and *turkestanicus*, distinguished, REITTER, p. 259, Wien. ent. Zeit. xxiii.

PTINIDÆ.

- [Cf. FAUVEL (486), PÉRINGUEY (1028), PIC (1052, 1054, 1060, 1062, 1064, 1067, 1068), REITTER (1149).]
- Cathorama diversestriata*, p. 56, *rudepunctata*, *argentina*, S. America, *rubriventris*, Mexico, p. 57, *thecaoides*, *tijucana*, *holosericea*, *fulvopubens*, *subpubescens*, p. 103, *minutissima*, p. 104, S. America, PIC, Naturaliste 1904 ; *C. baeri*, Peru, PIC, p. 19, Echange 1904 : **n. spp.**
- Ernobius incisus*, S. France, PIC, p. 2, t. c. **n. sp.**
- Eupactus* = (*Thaptor* Gorh.), PIC, p. 31, t. c.
- E. cribripennis*, *gibbosiceps*, *subopacus*, p. 31, *nigromaculatus*, *brunneonotatus*, *argentifer*, p. 32, Brazil, PIC, t. c. ; *E. subnotatus*, *brunneus*, p. 36, *gounellei*, *barranus*, *bahiensis*, *minasensis*, *brevis*, *nigricolor*, *subattenuatus*, *rufonitens*, *humilis*, p. 37, Brazil, PIC, t. c. ; *E. donckieri*, Mexico, *funki*, *distinctipennis*, S. America, PIC, p. 19, t. c. **n. spp.**
- Eurostus cylindricornis*, Asia Minor, REITTER, p. 81, Wien. ent. Zeit. xxiii, **n. sp.**
- Leptotheca* **n. g.** *Dorcatomini*, p. 151, *laticornis* **n. sp.**, New Caledonia, p. 152, FAUVEL, Rev. Ent. franc. 1904.
- Mesocaelopus rufithorax*, Congo, PIC, p. 12, Echange 1904 ; *M. venezuelensis* ["me paraît devoir rentrer dans le genre *Eupactus*" !], Venezuela, *sumatrensis*, Sumatra, PIC, p. 19, Echange 1904 : **n. spp.**
- Ozognathus inarmatus*, *rufescens*, Chili, PIC, p. 18, t. c. **n. spp.**
- Priotoma peruviana*, *flaviventris*, S. America, PIC, p. 19, t. c. **n. spp.**
- Ptinus tectus*, habits, CHAMPION, p. 85, Ent. Mag. xl.
- P. elegans*, Natal, PÉRINGUEY, p. 225, Ann. S. African Mus. iii ; *P. multi-maculatus*, p. 226, *decorsei*, p. 227, Madagascar, PIC, Bull. Mus. Paris 1904 ; *P. falli*, N. America, PIC, p. 19, Echange 1904 ; *P. gandolphei*, *paulonotatus*, N. America, PIC, p. 34, t. c. : **n. spp.**
- Thaptor sublineatus*, Chili, *australiensis*, Australia, *mexicanus*, Mexico, PIC, p. 18, t. c. **n. spp.**
- Theca oneili*, S. Africa, *pruinosa*, Madagascar, PIC, p. 11, t. c. ; *T. figurata*, New Caledonia and New Hebrides, p. 152, *semirufa*, New Caledonia, p. 153, FAUVEL, Rev. Ent. franc. 1904 : **n. spp.**

BOSTRYCHIDÆ.

[Cf. FAUVEL (486), LESNE (876).]

LESNE gives addenda and corrigenda to his Palearctic *Bostrychidæ*, with 2 n. spp., ABEILLE, pp. 153–168, pls. iii, iv, Abeille xxx.

Catalogue of Australian *Bostr.* with localities, LEA, pp. 91-93, P. Linn. Soc. N. S. Wales xxix.

Apatodes Blackb. = (*Xylobosca* Lesne), LEA, p. 92, t. c.

Coccographis nigrorubra, pl. ix bis, fig. 6, p. 107, LESNE, Mission Pavie iii.

Lyctus canaliculatus, habits, parasites, BEYER, p. 30, J. N. York Ent. Soc. xii.

L. punctipennis, New Caledonia, Sumatra, FAUVEL, p. 155, Rev. Ent. franc. 1904, **n. sp.**

Sinoxylon pugnax, E. India etc., LESNE, p. 159, Abeille xxx, **n. sp.**

Xylogenes semenovi, Centr. Asia, LESNE, p. 158, t. c. **n. sp.**

CIOIDÆ.

Cherostus cornutus, St. Vincent, p. 31, *jamaicensis*, Jamaica, 32, ARROW, Ann. Nat. Hist. xiv, **n. spp.** [These Insects, as well as *Rhipidandrus*, are *Tenebrionidæ* and will in future be there recorded. D. S.]

Cis notatus, p. 160, *litteratus*, *biscutatus*, p. 161, *cribrellus*, *porcellus*, *micros*, p. 162, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**

Ennearthron nigricans, New Caledonia, FAUVEL, p. 163, t. c. **n. sp.**

TENEBRIONIDÆ and RHYSOPAUSSIDÆ.

[Cf. ARROW (39), BROUN (184), CHITTENDEN (266), DEMAISON (360), FAIRMAIRE (476), FAUVEL (486), GEBIEN (589, 590), KOLBE (830), MÜLLER (972), PÉRINGUEY (1028, 1029), POPPIUS (1094), REITTER (1155).]

Rhysopausoidæ, note on position, WASMANN, p. 5, Jägerskiöld exp. No. 13.

Acanthomera cursor, Cape Colony, PÉRINGUEY, p. 252, Ann. S. African Mus. iii, **n. sp.**

Acastus seabakuensis, S. Africa, PÉRINGUEY, p. 260, t. c. **n. sp.**

Adelium pustulosum, New Caledonia, FAUVEL, p. 189, Rev. Ent. franc. 1904, **n. sp.**

Adesmia (*Macropoda*) *khoikoina*, *damara*, p. 226, *A. (Onymachrys) laskeri*, p. 227, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**

Akis spinosa **var. n. ragusæ**, REITTER, p. 97, Natural. Sicil. xvii.

Alyconotus purpuripennis, Cameroons, GEBIEN, p. 22, Arkiv Zool. ii, No. 5, **n. sp.**

Almyon prolatus Pasc. = (*Ghaleca leta* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

Alphitophagus obtusangulus, Dalmatia, MÜLLER, p. 209, Munchen. Kol. Zeitschr. ii, **n. sp.**

Amenophis; table of species; *A. fairmairei* = (*mechowi* Kolbe), GEBIEN, p. 17, Arkiv Zool. ii, No. 5.

A. angustata, *epipleuralis*, Cameroons, GEBIEN, t. c. **n. spp.**

Ametrocera = (*Idricus* Fairm.), *A. aurita* = (*I. pacificus* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.

Amiantus pusillus, Transvaal, PÉRINGUEY, t. c. **n. sp.**

Anatolica hammarstromi, Mongolia, POPPIUS, p. 12, Ofv. Finska Forh. xlv, No. 16, **n. sp.**

Anchophthalmus indigus, *algoensis*, p. 237, *plicipennis*, p. 238, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**

Anomalipus granatus Fairm. = (*marshalli* Pér.), *A. obscurus* Oliv. = (*notaticollis* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.

A. spectandus, p. 449, *deceptor*, *amplipennis*, *selatinus*, p. 450, Transvaal, PÉRINGUEY, Nov. Zool. xi; *A. mashunus*, pl. xiii, fig. 10, *gasanus*, fig. 9, p. 239, *barbertoniensis*, p. 240, *pauxillus*, *hypocrita*, p. 241, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**

- Aphrotus* **n. n.** for *Xenus* Pér., *A. abortus* **n. sp.**, Namaqualand, PÉRINGUEY, p. 252, t. c.
- Arrhenoplita* **n. g. ensifera** **n. sp.**, New Caledonia, FAUVEL, p. 173, Rev. Ent. franc. 1904.
- Asemogena* **n. g.** near *Praogena*, *A. simplex*, p. 281, *humilis*, p. 282, **n. spp.**, Cape Colony, PÉRINGUEY, Ann. S. African Mus. iii.
- Bolitotherus cordicollis*, p. 167, *cancroïdes*, p. 168, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Cædus globosus*, New Caledonia, FAUVEL, p. 166, t. c. **n. sp.**
- Calostega cylindrica*, Congo, GEBIEN, p. 175, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Catamerus manicatus*, p. xiii, fig. 3, p. 250, *gasanus*, fig. 12, p. 251, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Ceramba* **n. g.** near *Episopus*, *hydrovatina* **n. sp.**, New Caledonia, FAUVEL, p. 206, Rev. Ent. franc. 1904.
- Ceropria*; characters of African; *C. romandi* = (*janthina* Th. = *westermanni* Fahr. = *viridis* Kr.), *C. anthracina* Quedf. nec Lac., pl. ii, fig. 8, GEBIEN, pp. 9, 10, Arkiv Zool. ii, No. 5.
- C. cærulea*, New Caledonia, FAUVEL, p. 171, Rev. Ent. franc. 1904, **n. sp.**
- Cherostus* and *Rhipidandrus*, cf. *Cioidea*.
- Cilibe asidæformis*, New Caledonia, FAUVEL, p. 188, Rev. Ent. franc. 1904, **n. sp.**
- Cymbeba bavayi*, p. 194, *sulcipennis*, *muscorum*, p. 195, *indigacea*, *planipennis*, p. 196, New Caledonia, FAUVEL, t. c. **n. spp.**
- Derosimus* **n. g.** near *Adelostema*, *D. quadricollis* **n. sp.**, Buenos Ayres, FAIRMAIRE, p. 62, Bull. Soc. ent. France 1904.
- Derosphærus globicollis* = (*Nyetobates rotundicollis* Westw. = *Notiolesthus morosus* Motsch.), GEBIEN, p. 18, Arkiv Zool. ii, No. 5.
- Diaclina picta*, New Caledonia, FAUVEL, p. 184, Rev. Ent. franc. 1904, **n. sp.**
- Dichastops mashunus*, S. Africa, PÉRINGUEY, p. 244, Ann. S. African Mus. iii, **n. sp.**
- Diestesoma* **n. g.** near *Strongylium*, p. 271, *D. pulchrum* **n. sp.**, Cape Colony, p. 272, PÉRINGUEY, t. c.
- Dorelogena* **n. g.** near *Praogena*, *D. castanea*, p. 280, *angusta*, p. 281, **n. spp.**, Rhodesia, PÉRINGUEY, t. c.
- Dysgena durbania*, p. 276, *decipiens*, *plebeia*, p. 277, *delagoana*, *foveaticollis*, p. 278, *capicola*, *luctuosa*, *servilis*, p. 279, S. Africa, PÉRINGUEY, t. c. **n. spp.**
- Endustomus sudanensis*, White Nile, WASMANN, pl. i, fig. 3, p. 10, Jägerskiöld exp. No. 13; *E. rhodesianus*, S. Africa, PÉRINGUEY, p. 242, Ann. S. African Mus. iii : **n. spp.**
- Epipedonota strigosicollis*, Catamarca, FAIRMAIRE, p. 63, Bull. Soc. ent. France 1904, **n. sp.**
- Episopus cavipennis*, p. 203, *championi*, *viridipennis*, p. 204, *violaceipennis*, p. 205, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Eupezus minor*, Cameroons, GEBIEN, p. 25, Arkiv Zool. ii, No. 5, **n. sp.**
- Gonocnemis jagerskiöldi*, Soudan, WASMANN, p. 7, pl. i, fig. 2, Jägerskiöld exp. No. 13, **n. sp.**
- Hæmus* **n. g.** near *Machla*, p. 228, *H. carinatipennis* **n. sp.**, Rhodesia, p. 229, PÉRINGUEY, Ann. S. African Mus. iii.
- Hemipristis kraatzi*, Tanganyika, GEBIEN, p. 127, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Herpiscius damarinus*, S. Africa, PÉRINGUEY, p. 229, Ann. S. African Mus. iii, **n. sp.**
- Hoplongx evanescens*, pl. ii, fig. 5, p. 33, *cameruna*, p. 24, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5; *H. termitophilus*, Soudan, WASMANN, pl. i, fig. 7, p. 9, Jägerskiöld exp. No. 13; *H. insignis*, *granulipennis*, p. 255, *perforatus*, *extraneus*, p. 256, *gratulus*, *refertus*, p. 257, *pudens*,

- spectandus*, p. 258, *amœnus*, *probus*, p. 259, *luscus*, p. 260, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
- Hyocis championi*, New Caledonia and New Hebrides, FAUVEL, p. 166, Rev. Ent. franc. 1904, **n. sp.**
- Hypamarygmus* **n. g.** p. 27, *H. coccinelloides* **n. sp.** Cameroons, p. 28, pl. ii, fig. 6, GEBIEN, Arkiv Zool. ii, No. 5.
- Iscanus* **n. g.** near *Lorelus*, p. 176, *kuniensis* **n. sp.**, New Caledonia, p. 177, FAUVEL, Rev. Ent. franc. 1904.
- Isopus kanak*, p. 198, *obtusius*, p. 199, *productus*, p. 200, *apicipennis*, *sulcifer*, p. 201, *morychoides*, p. 202; New Caledonia, FAUVEL, t. c. **n. spp.**
- Latheticus prosopis*, Arizona etc., CHITTENDEN, p. 167, J. N. York Ent. Soc. xii, **n. sp.**
- Lorelus ocularis*, New Caledonia, FAUVEL, p. 178, Rev. Ent. franc. 1904, **n. sp.**
- Lyprochelida picta*, Cameroons, pl. ii, fig. 4, p. 20, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
- Lyprops mosambicus*, *namaquensis*, S. Africa, PÉRINGUEY, p. 243, Ann. S. African Mus. iii, **n. spp.**
- Machla mendica* (= *Asida natalica* Pér. = *M. echinodermata* Fairm.), PÉRINGUEY, p. 296, t. c.
- Machleida nodulosa* (= *Asida legitima* Pér.), PÉRINGUEY, p. 296, t. c.
- Melasia apicipennis*, *fortestriata*, p. 180, *punctata*, *microcephala*, p. 181, *opacipennis*, *isoceroïdes*, p. 182, *miriceps*, p. 183, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Menephilus camerunus*, Africa, pl. ii, fig. 2, p. 19, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
- Metallonotus splendens*, E. Africa, GEBIEN, p. 318, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Micrantereus capicola*, *procursus*, pl. xiii, figg. 1, 2, p. 245, *zoutpansbergianus*, fig. 8, p. 246, *lydenburgiensis*, fig. 7, *gasanus*, figg. 5, 6, p. 247, *hirsutus*, fig. 4, p. 248, *vicarius*, p. 249, fig. 3, S. Africa; PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Mimocellus* **n. g.** near *Lyprops*, p. 11, *M. trechoïdes*, Sudan, pl. i, fig. 5, *braunsi*, Bothaville, **n. spp.**, p. 12, WASMANN, Jägerskiöld exp. No. 13.
- Moluris mulleri*, to *Psammodes*, PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Nannocerus angustulus*, p. 270, *beiranus*, p. 271, Mozambique; PÉRINGUEY, t. c. **n. spp.**
- Nesogena caffra*, S. Africa, PÉRINGUEY, p. 262, t. c. **n. sp.**
- Nyctelia grandis*, *vageimpressa*, p. 62, *rotundipennis*, *quadriplicata*, p. 63, S. America, FAIRMAIRE, Bull. Soc. ent. France 1904, **n. spp.**
- Oochrotus glaber*, Asia Minor, DEMAISON, p. 287, Bull. Soc. ent. France 1904, **n. sp.**
- Opatrinus opacius*, Cameroons, fig. 2, p. 4, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
- Païta* **n. g.** near *Menimus*, *setosella* **n. sp.**, Noumea, FAUVEL, p. 173, Rev. Ent. franc. 1904.
- Palorus luxipunctus*, New Caledonia, FAUVEL, p. 176, t. c. **n. sp.**
- Paragonocnemis trægaordhi*, Soudan, WASMANN, pl. i, fig. i, p. 8, Jägerskiöld exp. No. 13, **n. sp.**
- Paramarygmus figuratus*, Cameroons, GEBIEN, p. 28, Arkiv Zool. ii, No. 5; *P. gratulus*, *amœnus*, p. 261, *gratiosus*, p. 262, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii : **n. spp.**
- Paraphylax sternalis*, New Zealand, BROUN, p. 57, Ann. Nat. Hist. xiv, **n. sp.**
- Perichilus ditissimus*, S. Africa, PÉRINGUEY, p. 270, Ann. S. African Mus. iii, **n. sp.**
- Pheugonius giganteus*, Borneo, GEBIEN, p. 157, Deutsche ent. Zeitschr. 1904, **n. sp.**

- Phligra hamaticollis*, p. 235, *minuta*, p. 236, Cape Colony, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Phymatosoma rutilans*, Laos, FAIRMAIRE, p. 88, Mission Pavie iii, **n. sp.**
- Platynosum sabulorum*, characters, CHABAUT, p. 283, Bull. Soc. ent. France 1904.
- Platydemus tomentosus*, *nigrobrunneum*, p. 5, *hollmi*, fig. 3, p. 6, *schroderi*, fig. 4, p. 7, *abnorme*, fig. 5, p. 8, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5, **n. spp.**
- Praogena cyaneipennis*, p. 273, *ditissima*, *affinis*, p. 274, *natalensis*, *capicola*, *bechuana*, p. 275, *gloriosa*, *timida*, p. 276, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Priscoscelis thomsoni*, GEBIEN, p. 148, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Prosodes mithras*, Persia, REITTER, p. 258, Wien. ent. Zeit. xxiii, **n. sp.**
- Psammodius volvulus*=(*adventitus* Pér.), *P. valens* Pér.=(*cinctipennis* Fairm.), *P. rugulosus* Sol.=(*exilis* Pér.), *P. tricoloratus* Fahr.=(*præstans* Pér.), *P. junodi* Pér.=(*junodi* Fairm.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- P. discrepans*, p. 230, *damarinus*, *zoutpansbergianus*, pl. xiii, fig. 14, p. 231, *fartus*, p. 232, *illotus*, p. 233, S. Africa, PÉRINGUEY, t. c. : *P. rehbocki*, p. 299, *erthi*, p. 300, *spinosocostatus*, p. 302, Africa, KOLBE, Berlin. ent. Zeitschr. xlix : **n. spp.**
- Psectrascelis cariosicollis*, Catamarca, FAIRMAIRE, p. 64, Bull. Soc. ent. France 1904, **n. sp.**
- Pseudelops fossatus*, *remotus*, p. 191, *annulipes*, *macellus*, p. 192, *trapezus*, p. 193, New Caledonia, FAUVEL, Rev. Ent. franc. 1904, **n. spp.**
- Pycnocerini* : revision of the group, GEBIEN, Deutsche ent. Zeitschr. 1904, pp. 101–176 and 305–356. For the synonymy and variation notes in this paper reference must be made to the memoir.
- Pycnocerus rugosus*, p. 343, *gracilis*, p. 344, W. Africa, GEBIEN, t. c. **n. spp.**
- Scythis rectangulus*, Mongolia, POPPIUS, p. 14, Ofv. Finska Forh. xlv, No. 16, **n. sp.**
- Selinus convexipennis*, fig. 1, p. 2, *calcaripes*, p. 3, Cameroons, GEBIEN, Arkiv Zool. ii, No. 5, **n. spp.**
- Sipirocus kolbei*, Java, GEBIEN, p. 169, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Sphenaria* synonymy, of Semenow's species, REITTER, pp. 24, 25, Wien. ent. Zeit. xxiii.
- Stenocara albicollis*=(*distincta* Pér.), PÉRINGUEY, p. 296, Ann. S. African Mus. iii.
- S. jurgatrix*, Namaqualand, PÉRINGUEY, p. 227, t. c. **n. sp.**
- Strongylium sulcipenne*=(*Xanthotopia fuscocyanescens* Fairm.), PÉRINGUEY, p. 297, t. c. ; *S. cyanipes*=(*nigrum* Dohrn), GEBIEN, p. 29, Arkiv Zool. ii, No. 5.
- S. perturbator*, *indigenus*, p. 263, *rhodesianum*, *ovampoense*, p. 264, *lætum*, *discrepans*, p. 265, *algoense*, *imitator*, p. 266, *natalense*, p. 267, *auspicatum*, *plausibile*, p. 268, *lætum*, *cælatum*, p. 269, S. Africa, PÉRINGUEY, Ann. S. African Mus. iii, **n. spp.**
- Syrphetodes nodosalis*, New Zealand, BROUN, p. 56, Ann. Nat. Hist. xiv, **n. sp.**
- Taraxides sinuatus*, variation and synonymy, GEBIEN, p. 13, 14, Arkiv Zool. ii, No. 5.
- Tenebrio guineensis*=(*foveicollis* Thoms.), GEBIEN, p. 19, t. c.
- Toxicum taurus*=*tenuiclavum* Schauf.=?*nitidifrons* Schauf.), GEBIEN, p. 13, t. c.
- Trachynotideus damarinus*, S. Africa, PÉRINGUEY, p. 233, Ann. S. African Mus. iii, **n. sp.**
- Trachynotidus rufozonatus*=(*manifestus* Pér.), PÉRINGUEY, p. 297, t. c.
- Trachynotus stali*=(*latemarginatus* Pér.), *T. silphoides*=(*plicipennis* Pér.), *T. pygmaeus*=(*tantillus* Pér.), *T. frontalis* Haag=(*Epairops levigata* Pér.), PÉRINGUEY, t. c.

- T. resolutus*, Transvaal, PÉRINGUEY, p. 234, t. c. **n. sp.**
Uloma sjoestedti, Cameroons, fig. 6, p. 10, GEBIEN, Arkiv Zool. ii, No. 5, **n. sp.**
Vutsimus propinquus, p. 253, *byzacnoides*, p. 254, Transvaal, PÉRINGUEY,
 Ann. S. African Mus. iii, **n. spp.**
Xanthothoepia delagoae, Mozambique, PÉRINGUEY, p. 273, t. c. **n. sp.**
Xyloborus crenipennis Motsch. to *Cherostus*, ARROW, Ann. Nat. Hist. xiv,
 p. 32.
Zophodes tristis=(*Doryagus talpa* Pasc.), PÉRINGUEY, p. 297, Ann. S.
 African Mus. iii.

CISTELIDÆ.

[Cf. GERHARDT (591, 592), PIC (1058, 1065, 1075).]

- Isomira murina* var. *n. æmilie*, BEDEL, p. 211, Bull. Soc. ent. France 1904.
I. arenaria, Germany, GERHARDT, p. 366, Deutsche ent. Zeitschr. 1904,
 and p. 79, Zeitschr. Ent. Breslau xxix; *I. testaceicornis*, Vladivostock,
 PIC, p. 26, Echange 1904 : **n. spp.**
Cteniopus, sulphureus L.=(*flavus* Scop.), BEDEL, p. 152, Abeille xxx.
C. tokatensis, Tokat, PIC, p. 26, Echange 1904, **n. sp.**
Microcistela n. g. M. rosine **n. sp.**, Amurland, PIC, p. 26, t. c.
Mycetochara (Ernocharis) striatipennis, Amanus, PIC, p. 74, t. c. **n. sp.**
Prionychus nitidissimus, Tokat, PIC, p. 288, Bull. Soc. ent. France 1904,
n. sp.

MELANDRYIDÆ and LAGRIIDÆ.

- Orchesia fusiformis*=(*nadeshda* Sem.), SEMENOW, p. 315, Rev. Russe Ent.
 1904.
Lagria procera, p. 287, *prædita*, *pustulosu*, p. 288, *mashuna*, *rhodesiana*,
 p. 289, *imitatrix*, p. 290, *lydenburgiana*, *promontorii*, p. 291, *vittati-*
pennis, p. 292, *capicola*, *elizabethæ*, p. 293, *plumbea*, *impressicollis*,
 p. 294, *annectens*, p. 295, S. Africa, PÉRINGUEY, Ann. S. African Mus.
 iii, **n. spp.**

ANTHICIDÆ, PEDILIDÆ.

[Cf. CASEY (248), PIC (1053, 1054, 1057, 1060, 1062, 1064, 1068, 1070, 1075,
 1076, 1078).]

- Anthicus ragazzii* var. *n. micheli*, PIC, p. 121, Bull. Mus. Paris 1904.
A. tarifanus, Spain, PIC, p. 4, Echange 1904; *A. escaleraï*, *uhagoni*, Spain,
balearicus, Balearic Ids., PIC, p. 81, t. c.; *A. boyadjeani*, p. 73,
tauricus, p. 74, Asia Minor, PIC, t. c.; *A. (Aulacoderus) citernii*,
 Somali Land, PIC, p. 92, Ann. Mus. Genova xli; *A. basinotatus*,
tuberculatus, *cæruleipennis*, S. Africa, PIC, p. 12, Echange 1904; *A.*
floridanus, *plectrinus*, N. America, CASEY, p. 320, Canad. Ent. xxxvi;
A. chevaleri, Niger, *guyanensis*, French Guiana; PIC, p. 121, Bull.
 Mus. Paris 1904; *A. (Lappus) postobscurus*, *goyasensis*, *A. (Acanthinus)*
minasensis, p. 44, *A. sculptus*, *bicallosus*, *finitimus*, p. 45, Brazil, PIC,
 Echange xx; *A. decerptus*, Buenos Ayres, PIC, p. 118, Bull. Soc. ent.
 France 1904 : **n. spp.**
Euvacus n. g. p. 318, *E. coloradanus n. sp.*, Colorado, p. 319, CASEY,
 Canad. Ent. xxxvi.
Formicomus fortipes var. *n. anguliceps*, PIC, p. 119, Bull. Mus. Paris 1904;
F. elegans, *postalis* and *obliquifasciatus* to *Anthicus*, LEA, p. 95,
 P. Linn. Soc. N. S. Wales xxix.
F. armipes, *decorsei*, Madagascar, *potteri*, Abyssinia, PIC, p. 120, Bull. Mus.
 Paris 1904, **n. spp.**

- Hybophilus*; this name cannot be used for *Col.*, CHAMPION, p. 85, Ent. Mag. xl.
H. grandis, S. Africa, PIC, p. 12, Echange 1904; *H. angusticollis*, *decorsei*, Madagascar, PIC, p. 72, Bull. Soc. ent. France 1904 : **n. spp.**
Leptoremus **n. g.** p. 314, *L. argenteus* **n. sp.**, California, p. 315, CASEY, Canad. Ent. xxxvi.
Liobaulius **n. g.** p. 316, *L. subtropicus*, *lulingensis*, *spectans*, p. 317, Texas, *fronteralis*, Mexico, p. 318, **n. spp.**, CASEY, t. c.
Macratrria decorsei, Madagascar, PIC, p. 119, Bull. Mus. Paris 1904, **n. sp.**
Notoxus oneili, Cape Colony, PIC, p. 35, Echange 1905; *N. peruvianus*, Peru, PIC, p. 228, Bull. Mus. Paris 1904 : **n. spp.**
Scraptia chinensis, Tien-tsin, PIC, p. 20, Echange 1904, **n. sp.**

RHIPIPHORIDÆ and STYLOPIDÆ.

[Cf. BROUN (184), CHOBOUT (269), FAIRMAIRE (478), LEA (864), PIC (1074, 1077), PIERCE (1086).]

- Ancholenus acuminatus*, Brazil, FAIRMAIRE, p. 155, Bull. Soc. ent. France 1904, **n. sp.**
Blattivorus **n. g.** (?) for *Rhipidius lusitanicus*, CHOBOUT, p. 230, Bull. Soc. ent. France 1904.
Dunbrodianus **n. g.** near *Euctenia*, *D. longicollis* **n. sp.**, Cape Colony, PIC, p. 66, Echange xx.
Emenadia pictipennis, Queensland, *semipunctata*, N. W. Australia, LEA, p. 97, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
Evaniocera pallidipennis, N. W. Australia, LEA, p. 99, t. c. **n. sp.**
Myiodes syriacus, Amanus, PIC, p. 90, Echange xx, **n. sp.**
Myiodites, characters of N. American, pp. 157–162, *fasciatus* var. *n. brunneus*, p. 160, *solidaginis*, natural history, pp. 172–180, PIERCE, Stud. Univ. Nebraska iv.
M. minimus, Nebraska, id., p. 159, t. c. **n. sp.**
Rhipidius; table of species, CHOBOUT, p. 230, Bull. Soc. ent. France 1904.
R. guignoti, Alpes maritimes, CHOBOUT, p. 228 & p. 284, t. c. **n. sp.**
Rhipiphorus; table of North American, PIERCE, p. 164, Stud. Univ. Nebraska iv.
R. acutipennis, Nebraska, PIERCE, p. 163, t. c. **n. sp.**
Rhyppistena cryptarthra, p. 58, *sulciceps*, p. 59, New Zealand, BROUN, Ann. Nat. Hist. xiv, **n. spp.**
Xenos?, from *Andrena*, p. 169, *X. pulvinipes*, from *Panurginus*, Nebraska, PIERCE, p. 167, Stud. Univ. Nebraska iv, **n. sp.**
The triunguloids—first larva—of *Rhip.* and *Stylop.*, PIERCE, pp. 170 etc., t. c.

MORDELLIDÆ.

- Mordella*; variation of Australian, LEA, pp. 95, 96, P. Linn. Soc. N. S. Wales xxix.
Mordellistena arabica, Mazerah, CHOBOUT, p. 244, Bull. Soc. ent. France 1904, **n. sp.**

CANTHARIDÆ or MELOIDÆ.

[Cf. ESCHERICH (469), PÉRINGUEY (1028), PIERCE (1086), SKINNER (1302).]

- Life-histories and peculiarities of *Meloidæ*, North American triungulins, PIERCE, pp. 154, 170 etc., Stud. Univ. Nebraska iv.
Embryology of *Meloë*, CZERSKI (340).
Calospasta wenzeli, Arizona, SKINNER, p. 217, Ent. News Philad. xv, **n. sp.**

- Ctenopus lama*, East Turkestan, ESCHERICH, p. 35, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Decatoma vexator*, *transvaalica*, Transvaal, PÉRINGUEY, p. 284, Ann. S. African Mus. iii, **n. spp.**
- Epicauta adpersa*, injurious in Argentina, BRÈTHES (182).
- E. abadona*, *alastor*, Arizona, SKINNER, p. 217, Ent. News Philad. xv, **n. spp.**
- Hapalus (Stenoria) hauseri*, p. 34, *tibetana*, Kuku-noor, *H. (Sitaris) pallens*, p. 35, Turkestan, ESCHERICH, Munchen. Kol. Zeitschr. ii, **n. spp.**
- Lagorina (?) mus*, Algeria, ESCHERICH, p. 32, t. c. **n. sp.**
- Lytta pæcilopectera* var. *n. satiata*, ESCHERICH, p. 31, t. c.
- L. tibetana*, Kuku-noor, ESCHERICH, p. 30, t. c.; *L. damarina*, *spilotella*, S. Africa, PÉRINGUEY, p. 286, Ann. S. African Mus. iii : **n. spp.**
- Meloë intermedius*, Turkestan, ESCHERICH, p. 30, Munchen. Kol. Zeitschr. ii; *M. rhodesianus*, S. Africa, PÉRINGUEY, p. 282, Ann. S. African Mus. iii : **n. spp.**
- Myllabris cruz* var. *n. opulenta*, ESCHERICH, p. 33, Munchen. Kol. Zeitschr. ii.
- M. lucens*, p. 32, *voigtsii*, p. 33, *aurora*, p. 34, Turkestan, ESCHERICH, t. c.; *M. (Ceroctis) mosambica*, Lourenço-Marques, PÉRINGUEY, p. 283, Ann. S. African Mus. iii : **n. spp.**
- Paractenodia n. g.* near *Actenodia*, *P. parva n. sp.*, Cape Colony, PÉRINGUEY, p. 285, Ann. S. African Mus. iii.

ÆGIALITIDÆ, PYROCHROIDÆ, PYTHIDÆ, ŒDEMERIDÆ.

- Ægialitidæ*; validity and position of the family, structure of prosternum, WICKHAM, pp. 356, 357, cuts, Canad. Ent. xxxvi.
- Ægialites*; early stages, taxonomy, WICKHAM, pp. 57-60, pl. ii, t. c.
- Pyrochroa innoraticipes*, Amurland, PIC, p. 26, Échange 1904, **n. sp.**
- Rhinosimus æneus numidica* subsp. n., PIC, p. 10, t. c.
- Salpingus distincticollis*, *bisbimaculatus*, Madagascar, PIC, p. 72, Bull. Soc. ent. France 1904, **n. spp.**
- Salpingus oneili*, Cape Colony, PIC, p. 35, Échange 1904, **n. sp.**
- Chrysanthia distinctithorax*, Taurus, PIC, p. 57, t. c. **n. sp.**
- Danerces bicolor*, Queensland, LEA, p. 100, pl. iv, fig. 11, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Œdemera hispanica*, Grenada, PIC, p. 91, Échange xx, **n. sp.**
- Sora* Walker (1859) is prior to *Sora* Hein., PROUT, p. 115, Entomologist 1904.

CURCULIONIDÆ.

- [Cf. ABEILLE (5), BEDEL (97), BEGUIN-BILLECOCQ (98), BROUN (184), CASEY (248), CHAMPION (614), CHITTENDEN (263, 264), CSIKI (329), DANIEL & DANIEL (349), DESBROCHERS (361-365, 367), ENDERLEIN (460), FAIRMAIRE (473), FAUST (481), FORMÁNEK (533, 534), FROGGATT (561), GIRAULT (610), HARTMANN (663), HELLER (674, 675), LEA (862, 864), MARSHALL (915), MCCLENAHAN (930), PETRI (1035-1037), PIC (1060, 1065, 1071, 1076, 1077, 1079), REITER (1148, 1150, 1152), SCHAEFFER (1220), SCHULTZE (1252), SOLARI (1326), WAGNER (1462).]

Development of rostrum, *Balaninus* and *Mononychus*, MCCLENAHAN (930). VITALE continues his account of protective resemblance in *Curculionidæ*, Riv. ital. Sci. Nat. xxiv, pp. 141-145.

- Acalles italicus*, Campobasso, p. 529, *lusitanicus*, Portugal, p. 530, SOLARI, Ann. Mus. Genova xli, **n. spp.**
- Acalyptops n. g.* *Anthonomorum*, p. 400, *A. ornatus n. sp.*, Usambara, p. 401, HARTMANN, Deutsche ent. Zeitschr. 1904.

- Acherres globicollis*, W. Australia, LEA, p. 114, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Adosomus n. g.* pp. 188, 236, for *sumsonovi* Gebl. etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Ædriodes humeralis*, W. Australia, LEA, p. 113, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Alcides interruptus bilineellus* subsp. n., HELLER, p. 186, Ent. Tidskr. xxv.
- A. albopictus*, Madagascar, FAIRMAIRE, p. 247, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Amblysomus n. g.* pp. 185, 204, for *brevis* Fahr., FAUST, Deutsche ent. Zeitschr. 1904.
- Amycterides*; notes on types and synonymy of Macleay's species, LEA, pp. 111–113, Tr. R. Soc. S. Austral. xxviii.
- Anasticomerus subg. n.*, cf. *Ischnotrachelus*.
- Anthonomus grandis*, natural history, SANDERSON, Texas Agric. exp. Stat. Circ. 3; *A. grandis*, in Cuba, food-plant, SCHWARZ, pp. 13–17, P. ent. Soc. Washington vi.
- A. brevispinus*, Araxes Valley, p. 139, *laticor*, Siberia, p. 140, PIC, Bull. Soc. Autun xv, **n. spp.**
- Aphanomastix n. g. Spheophoridarum*, p. 196, *A. cryptophodus n. sp.*, Cameroons, p. 197, HELLER, Ent. Tidskr. xxv.
- Aphyomerus n. g. Menemachinorum*, *A. obliquus n. sp.*, E. Africa, HARTMANN, p. 409, Deutsche ent. Zeitschr. 1901.
- Apion*; food plants of 12 species, WAGNER, pp. 378, 379, Munchen. Kol. Zeitschr. ii; *A. hydropicum*, identification, DANIEL, pp. 182–184, Munchen. Kol. Zeitschr. ii; *A. subcaviceps*, characters, p. 108, *subconiceps* var. n. *tenuirostre*, p. 109, DESBROCHERS, Frelon xii.
- A. (Ceratapion) austriacum*, Mödling, p. 374, *woerzi*, p. 377, *moczarskii*, p. 378, Corfu, WAGNER, Munchen. Kol. Zeitschr. ii; *A. gavoyi*, France, p. 53, *vincenti*, Cairo, *semicyanescens*, Turkestan, p. 54, *foveatum*, Caucasus, *approximatum*, Morocco, p. 55, *rectinasus*, S. France, p. 56, *italicum*, Piedmont, *subconiceps*, Carcassonne, p. 57, DESBROCHERS, Frelon xii; *A. subplumbeum*, Arabia, DESBROCHERS, p. 108, t. c.; *A. tropicum*, p. 392, *kwaiense*, p. 393, *sulcatipenne*, p. 394, *vetulum*, *amabile*, p. 395, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904; *A. (Aspidapion) alluaudi*, *bouvieri*, p. 54, *malgasicum*, p. 55, *bicarinatum*, *denudatum*, p. 56, *madagascariense*, *inornatum*, p. 57, Madagascar, *pamanzianum*, Mayotte, p. 56, *A. insulam*, *albosquamosum*, p. 103, Madagascar, BEGUIN-BILLECOCQ, Bull. Soc. ent. France 1904 : **n. spp.**
- Aporotopus n. g.* p. 190, for *Pachycerus cribrosus* Fairm., FAUST, Deutsche ent. Zeitschr. 1904.
- Apsophus n. g. Menemachinorum*, p. 407, *fasciatus*, p. 408, **n. sp.**, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Asinocleonus subg. n.* of *Pachycerus*, FAUST, p. 224, Deutsche ent. Zeitschr. 1904.
- Astratus n. g.* near *Cryptorhynchus*, *A. cristulicollis n. sp.*, Madagascar, FAIRMAIRE, p. 249, Ann. Soc. ent. Belgique xlviii.
- Atactogaster n. g.* p. 230, with *insularis*, Zanzibar, *suspectus*, *finitimus*, Madras, p. 251, **n. spp.**, FAUST, Deutsche ent. Zeitschr. 1904.
- Attelabus bipustulatus*, habits, GIRAULT, pp. 189–193, Ent. News Philad. xv.
- Bæosomus n. g.* near *Bantiades*, p. 118, for *B. tacitus n. sp.*, New Zealand, p. 119, BROWN, Ann. Nat. Hist. xiv.
- Bagous longirostris*, Sicily, VITALE, Riv. Col. ital. i [not seen by Recorder]; *B. latepunctatus*, p. 50, *bagdatensis*, p. 51, Bagdad, PIC, Echange xx; *B. striatulus*, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *B. fustus*, E. Africa, HARTMANN, p. 391, Deutsche ent. Zeitschr. 1904 : **n. spp.**

- Balaninus* ; natural history of N. American, CHITTENDEN, pp. 24–38, Bull. U. S. Dep. Agric. Ent. xlv.
- B. intricatus*, *equalis*, p. 133, *delicatulus*, *submaculatus*, p. 134, Australia, LEA, Tr. R. Soc. S. Austral. xxviii ; *B. victoriensis*, Texas, CHITTENDEN, p. 31, Bull. U. S. Dep. Agric. Ent. xlv : **n. spp.**
- Baris* spp. ; metamorphosis, XAMBEU, pp. 213, 223, Naturaliste 1904.
- B. corsicana*, Bastia, p. 36, *mauretanica*, Algeria, p. 37, SCHULTZE, Munchen. Kol. Zeitschr. ii ; *B. rufescens*, p. 532, *violaceomicans*, p. 534, Moldavia, SOLARI, Ann. Mus. Genova xli ; *B. minima*, E. Africa, HARTMANN, p. 414, Deutsche ent. Zeitschr. 1904 ; *B. distinguenda*, Madagascar, FAIRMAIRE, p. 251, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Barypithes* ; characters and composition, FORMÁNEK, pp. 16, 151–173, Munchen. Kol. Zeitschr. ii.
- B. maritimus*, Basses Alpes, FORMÁNEK, p. 297, t. c. **n. sp.**
- Belus centralis* = (*granulatus* Lea), LEA, p. 132, Tr. R. Soc. S. Austral. xxviii.
- Blosyrus haroldi*, Usambara, HARTMANN, p. 369, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Bothynoderes tekkensis*, *absolutus*, no locality, p. 211, *kahirinus*, Cairo, p. 212, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Brachyleonius* **n. g.** pp. 190, 237, for *fronto* Fisch., FAUST, Deutsche ent. Zeitschr. 1904.
- Brachyderes incanus*, natural history, metamorphosis, JACOBI (737).
- Broconius* **n. g.** for part of *Lixus*, DESBROCHERS, p. 92, Frelon xii.
- Bryochæta subcruciata* = (*palliat*a Pasc.), *sulcipennis* Th. = (*sufflata* Pasc.), *nigrita* Chev. = (*viridis* Pasc.), HELLER, pp. 181, 182, Ent. Tidskr. xxv.
- B. sellata*, *apicalis*, p. 183, *sjostedti*, p. 184, Cameroons, id. t. c. **n. spp.**
- Cænopsis maroccana*, Tangier, SOLARI, p. 525, Ann. Mus. Genova xli, **n. sp.**
- Calodemus* **n. g.** pp. 185, 233, *C. vetustum*, *pullum*, *biguttatum*, p. 233, *puberulum*, *invidum*, p. 234, **n. spp.**, Africa, FAUST, Deutsche ent. Zeitschr. 1904.
- Cathormiocerus ragusai*, Sicily, VITALE, Riv. Col. ital. ii? p. 125 [not seen by Recorder] ; *C. semidepressus*, p. 92, *vaulogeri*, p. 93, Algeria, PIC, Echange xx : **n. spp.**
- Catoptes vexator*, p. 108, *egens*, p. 109, *duplex*, p. 110, New Zealand, BROUN, Ann. Nat. Hist. xiv, **n. spp.**
- Cecyropa alternata*, p. 105, *discors*, p. 106, New Zealand, BROUN, t. c. **n. spp.**
- Centrinus lineellus*, Guatemalan not N. American, CASEY, p. 324, Canad. Ent. xxxvi.
- Centorrhynchus albolimbatus*, Tunis, *laborensis*, Algeria, PIC, p. 93, Echange xx, **n. spp.**
- Chærocephalus hyperoides*, p. 99, *siculus*, p. 100, Sicily, RAGUSA, Natural. Sicil. xvii ; *C. grandis*, Algeria, PIC, p. 92, Echange xx : **n. spp.**
- Chærodrys pictus* St. = (*cressius* Pic), REITTER, p. 83, Wien. ent. Zeit. xxiii ; *C. manteroi* ♂, SOLARI, p. 536, Ann. Mus. Genova xli.
- Chalcodermus dentiferus*, pl. xvii, fig. 2, p. 317, *angulicollis*, fig. 4, p. 319, *calidus*, fig. 5, p. 320, *longirostris*, fig. 11, *serripes*, fig. 12, p. 325, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4 ; *C. æneus*, natural history, CHITTENDEN, pp. 39–43, Bull. U. S. Dep. Agric. Ent. xlv.
- C. semicostatus*, Texas, SCHAEFFER, p. 232, J. N. York Ent. Soc. xii ; *C. nigroæneus*, *cupreipes*, p. 318, *angularis*, p. 319, pl. xvii, fig. 3, *dentipes*, fig. 6, *foveolatus*, fig. 7, p. 321, *variolosus*, *curvipes*, fig. 8, p. 322, *lineatus*, fig. 9, *radiatus*, p. 323, *vittatus*, *mexicanus*, fig. 10, p. 324, *crassipes*, fig. 13, p. 325, Central America, CHAMPION, t. c. **n. spp.**
- Chaunoderus sternalis*, p. 381, *apicalis*, p. 382, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**

- Chromosomus schach*, Persia, *ostentatus*, Turcomania, FAUST, p. 208, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Chrysolophus spectabilis*, variation, LEA, p. 102, P. Linn. Soc. N. S. Wales xxix.
- C. foveatus*, N. S. W., LEA, p. 101, t. c. **n. sp.**
- Cionellus* subg. **n.**, cf. *Cionus*.
- Cionus*; table of Palearctic with numerous varr. **n.**, also p. 63, *Cionellus* subg. **n.** for *C. gibbifrons*, REITTER, Wien. ent. Zeit. xxiii, pp. 47–64; *C. fraxini* var. *attica*, PIC, p. 50, Echange xx; *C. obscurus* Reitt. = (*flavoguttatus* Stierl.), REITTER, p. 259, Wien. ent. Zeit. xxiii.
- C. schultzei*, Greece, p. 50, *subalpinus*, Alps, p. 54, *helleri*, Japan, p. 56, REITTER, Wien. ent. Zeit. xxiii; *C. elegantulus*, Madagascar, FAIRMAIRE, p. 251, Ann. Soc. ent. Belgique xlvi: **n. spp.**
- Cleogonus armatus*, Mexico-Colombia, p. 315, pl. xvii, fig. 1, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4, **n. sp.**
- Cleonides*; a revision of this group by the late Herr J. Faust is published, Deutsche ent. Zeitschr. 1904, pp. 177–302. It is accompanied by a catalogue and we give therefore only the new genera and species.
- Cleonus varquesi*, Toledo, DESBROCHERS, p. 106, Frelon xii; *C. japonicus*, Japan, FAUST, p. 237, Deutsche ent. Zeitschr. 1904: **n. spp.**
- Clypeorhynchus inophlaoides*, New Zealand, BROWN, p. 117, Ann. Nat. Hist. xiv, **n. sp.**
- Cnemodontus ambitiosus*, *natalensis*, S. Africa, FAUST, p. 199, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Cneorhinus depilatus*, Tunis, DESBROCHERS, p. 105, Frelon xii, **n. sp.**
- Cænopsimorphus tenietensis*, Tunis, *desbrochersi*, Algeria, PIC, p. 91, Echange xx, **n. spp.**
- Conapion constricticollis*, p. 396, *cognatum*, p. 397, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Conorhynchus lugionii*, Rome, SOLARI, p. 528, Ann. Mus. Genova xli; *Conorhynchus globifrons*, *arduus*, Mongolia, p. 214, *acentatus*, Kirghisia, p. 215, FAUST, Deutsche ent. Zeitschr. 1904: **n. spp.**
- Conotrachelus inexplicatus* Faust, pl. xviii, fig. 28, p. 360, *signatus* Kirsch, fig. 30, p. 361, *cristatus* Fahr., pl. xix, fig. 9, p. 375, *dentiferus* Fahr., fig. 11, p. 376, *cestrotus* Faust, fig. 26, p. 388, *leucophæatus* Fahr. = (*demens* Boh.), pl. xx, fig. 5, p. 394, *subfasciatus* Boh., fig. 27, p. 413, *anaglypticus* Say, pl. xxi, fig. 5, p. 420, *humerosus* Fahr., fig. 11, p. 425, *scapularis* Fahr., fig. 16, p. 430, *serpentinus* Boh., fig. 19, p. 433, *scrubus* Boh., fig. 22, p. 435, *verticalis* Boh., fig. 25, p. 439, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4.
- C. quadridens*, pl. xviii, fig. 1, p. 343, *inequidens*, fig. 2, *tridens*, fig. 3, p. 344, *serratidens*, fig. 4, *truncatidens*, fig. 5, p. 345, *tetrastigma*, figg. 6, 7, p. 346, *rectirostris*, fig. 8, *fulvescens*, fig. 9, p. 347, *latidens*, fig. 10, *varicolor*, fig. 11, p. 348, *oculatus*, fig. 12, *triannulatus*, p. 349, *squamulatus*, fig. 13, *armatus*, p. 350, *lævirostris*, fig. 14, *flexuosus*, fig. 15, p. 351, *fulvomaculatus*, fig. 16, *robustus*, p. 352, *longipennis*, fig. 17, *rugulosus*, fig. 18, p. 353, *rugiventris*, fig. 19, *longirostris*, fig. 20, p. 354, *latefasciatus*, *squamosus*, fig. 21, p. 355, *glabriventris*, *anthonomoides*, fig. 22, p. 356, *subulatus*, fig. 23, *brevicollis*, fig. 24, p. 357, *alboplagiatus*, fig. 25, p. 358, *albosignatus*, fig. 26, *curvidens*, fig. 27, p. 359, *quadripustulatus*, fig. 29, p. 360, *cribratus*, p. 361, *impressicollis*, *brevirostris*, pl. xix, fig. 1, p. 362, *flavibasis*, fig. 2, p. 363, *foveicollis*, fig. 3, *griseus*, p. 364, *unidentatus*, *fasciculatus*, p. 365, *picticollis*, fig. 4, *lineatipes*, p. 366, *multiguttatus*, *curtirostris*, p. 367, *rufitarsis*, *sinuaticollis*, fig. 5, p. 368, *germanus*, *nigricans*, p. 369, *fulvopictus*, *flavangulus*, p. 370, *annulipes*, *duplicatus*, p. 372, *bispinis*, fig. 6, *mixtus*, fig. 7, p. 373, *continuus*, *bilineatus*, fig. 8, p. 374, *divirgatus*, fig. 10, p. 375, *venustus*, fig. 12, p. 376, *albolineatus*, fig. 13, *eburneus*, fig. 14, p. 377, *albinus*, fig. 15,

- p. 378, *sellatus*, *curvilineatus*, fig. 16, p. 379, *minutus*, *dimidiatus*, p. 380, *deplanatus*, fig. 17, *præstans*, fig. 18, p. 381, *trilineatus*, fig. 19, p. 382, *nodulosus*, *discifer*, fig. 20, p. 383, *corallinus*, fig. 21, p. 384, *striatirostris*, *crenatus*, p. 385, *quadrinodosus*, fig. 22, *gibbipennis*, fig. 23, p. 386, *hybophorus*, fig. 24, *cærulescens*, fig. 25, p. 387, *spinifer*, fig. 27, p. 388, *reticulatus*, fig. 28, p. 389, *piliventris*, fig. 29, *granulicollis*, fig. 30, p. 390, *unifasciatus*, pl. xx, fig. 1, *albofasciatus*, fig. 2, p. 391, *vittaticollis*, fig. 3, *megalops*, fig. 4, p. 392, *constrictus*, *sextuberculatus*, p. 393, *umbrosus*, p. 394, *canaliculatus*, *opacus*, pl. xx, fig. 6, p. 395, *arachnoides*, fig. 7, *albifrons*, fig. 8, p. 396, *cordatus*, fig. 9, p. 397, *gibbistrostris*, fig. 10, *excavatus*, p. 398, *sulcicollis*, *cavicrus*, fig. 11, p. 399, *fulvibasis*, *rufescens*, p. 400, *nemorivagus*, *divisus*, fig. 12, p. 401, *obliquelineatus*, fig. 13, *brevisetis*, fig. 14, p. 402, *squamifrons*, fig. 15, p. 403, *suturalis*, fig. 16, *albopictus*, fig. 17, p. 404, *scoparius*, fig. 18, *lobatus*, fig. 19, p. 405, *compressus*, fig. 20, *rubidus*, fig. 21, p. 406, *isthmicus*, p. 407, *fulvilineatus*, *silvicola*, p. 408, *uncifer*, fig. 22, *lineatus*, p. 409, *parvulus*, *adustus*, fig. 23, p. 410, *candidus*, fig. 24, *farinosus*, p. 411, *parvicollis*, *crucifer*, fig. 25, p. 412, *cinerascens*, fig. 26, p. 413, *semirufus*, fig. 28, p. 414, *dilatirostris*, fig. 29, *sinuatocostatus*, p. 415, *segregatus*, *latirostris*, fig. 31, p. 416, *nodifer*, pl. xxi, fig. 1, p. 417, *elongatus*, fig. 2, p. 418, *hystricosus*, fig. 3, *bicarinatus*, fig. 4, p. 419, *insularis*, fig. 6, *tuberculatus*, fig. 7, p. 421, *quadrilineatus*, fig. 8, p. 422, *mexicanus*, fig. 9, *ramifer*, p. 423, *punctiventris*, *uniformis*, fig. 10, p. 424, *nodifrons*, p. 425, *ovalis*, *alternans*, p. 426, *validus*, fig. 12, *lateralis*, fig. 13, p. 427, *longidens*, fig. 14, p. 428, *dentimanus*, fig. 15, *tenuipes*, p. 429, *aristatus*, fig. 17, p. 430, *curtus*, *paleatus*, p. 431, *guatemalensis*, *conicicollis*, fig. 18, p. 432, *incanus*, fig. 20, *sulcipectus*, *spinipennis*, fig. 21, p. 434, *glabricollis*, *ciliatus*, fig. 23, p. 436, *sublineatus*, *tubogensis*, p. 437, *cucullatus*, *insignis*, *angusticollis*, p. 438, *curvimanus*, fig. 24, p. 439, *rufifrons*, *planifrons*, p. 440, Central America, CHAMPION, t. c.; *C. rubescens*, Texas, SCHAEFFER, p. 232, J. N. York Ent. Soc. xii : **n. spp.**
- Copturus* (*Eucopturus*) *papei*, p. 292, *spinithorax*, p. 293, Brazil, HELLER, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Cosmogaster* **n. g.** pp. 185 & 230, for *lateralis* Gyll., etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Cossonidæ* of Sicily, VITALE, Natural. Sicil. xvi & xvii, pp. 14 & 26-41.
- Cossonus camerunus*, Cameroons, HELLER, p. 200, Ent. Tidskr. xxv; *C. corvinus*, p. 418, *brevinatus*, p. 419, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904 : **n. spp.**
- Crisius dorsalis*, New Zealand, BROWN, p. 123, Ann. Nat. Hist. xiv, **n. sp.**
- Cyclobarus foveicollis*, Algeria, DESBROCHERS, p. 59, Frelon xii, **n. sp.**
- Cyclomaurus subfuscus*, Algeria, PIC, p. 91, Echange xx, **n. sp.**
- Cylindrocopturus* = (*Copturodes* Cas.), CASEY, p. 324, Canad. Ent. xxxvi.
- Degorsia*, cf. *Stenopelmus*.
- Derelomus fasciatus*, p. 406, *pallidus*, p. 407, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Desmidophorus galericulus* = (*centralis* Fairm.), FAIRMAIRE, p. 247, Ann. Soc. ent. Belgique lxviii.
- D. griseipes*, Madagascar, id. l. c., **n. sp.**
- Dicasticus lateralis*, Usambara, HARTMANN, p. 375, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Dichelotrox* **n. g.** *Zygopidarum*, p. 193, *D. bimbianus* **n. sp.**, Cameroons, p. 194, HELLER, Ent. Tidskr. xxv.
- Dichthorhynchus albozebrinus*, Madagascar, FAIRMAIRE, p. 252, Ann. Soc. ent. Belgique lxviii, **n. sp.**
- Dicranotropis* **n. g.** pp. 186, 203, for *hieroglyphicus* Ol. and *ganglbaueri* **n. sp.**, Persia, p. 203, FAUST, Deutsche ent. Zeitschr. 1904.

- Dinocleus porcatus*, p. 321, *interruptus*, Utah, *mexicanus*, Guerrero, p. 322, CASEY, Canad. Ent. xxxvi, **n. spp.**
- Dinosius n. g.* near *Mitophorus*, *D. asperipennis n. sp.*, Madagascar, FAIRMAIRE, p. 238, Ann. Soc. ent. Belgique xlviii.
- Echinocnemus gracilirostris*, Madagascar, FAIRMAIRE, p. 241, t. c. **n. sp.**
- Ectemnorhinus richtersi*, p. 673, *crozetensis*, p. 674, Crozet islds., ENDERLEIN, Zool. Anz. xxvii, **n. spp.**
- Ellimenistes amenus*, Usambara, HARTMANN, p. 386, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Elytrodon dilaticollis*, Cérigo, PIC, p. 10, Echange 1904; *E. ferox*, Asia Minor, K. DANIEL, p. 82, Munchen. Kol. Zeitschr. ii : **n. spp.**
- Engallus galactoderus*, Madagascar, FAIRMAIRE, p. 239, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ephimeronotus n. g.* pp. 187, 234, for *miegi* Fairm., FAUST, Deutsche ent. Zeitschr. 1904.
- Epilectus n. n.* for *Evochus* Chev., FAUST, p. 208, t. c.
- Epiphyllax apicalis* Fairm. to *Metialma*, FAIRMAIRE, p. 248, Ann. Soc. ent. Belgique xlviii.
- Epirhynchus humerosus*, Cape Good Hope, FAUST, p. 221, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Essolithna* and *Pephricus*, synonyms, LEA, p. 94, Tr. R. Soc. S. Austral. xxviii.
- Essolithna fissiceps*, *militaris*, p. 96, *maculata*, *terrena*, p. 97, *cordipennis*, *kingiae*, p. 98, W. Australia, LEA, t. c. **n. spp.**
- Ethemaia apicalis*, p. 107, *emarginata*, p. 108, *vagans*, N. S. W., *funerea*, Swan Riv., p. 109, LEA, t. c. **n. spp.**
- Eucleonus n. g.* p. 188, for *tetragrammus* Pall., FAUST, Deutsche ent. Zeitschr. 1904.
- Eusomus*, revision of palaearctic, DESBROCHERS, Frelon xx, pp. 119–132; *E. beckeri*=(*persicus* Desbr.), REITER, p. 259, Wien. ent. Zeit. xxiii; *Eusomus*, table of Palaearctic, with *Eusomatulus subg. n.* p. 86, *Euidosomus subg. n.* p. 88, *E. sandueri sp. n.*, Transcaucasus, p. 90, REITER, Wien. ent. Zeit. xxiii.
- E. planidorsum*, *koenigi*, *griseus*, Caucasus, *persicus*, N. Persia, DESBROCHERS, p. 104, Frelon xii, **n. spp.**
- Euthyphasis sordidata*, N. S. W., *lineata*, W. Australia, LEA, p. 82, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Eutinpheæa dispar*, Sydney, p. 79, *falcata*, Queensland, p. 80, LEA, t. c. **n. spp.**
- Evadodes rugiceps*, N. S. Wales, LEA, p. 79, t. c. **n. sp.**
- Evas elliptica*, p. 77, *latipennis*, p. 78, W. Australia, LEA, t. c. **n. spp.**
- Foucartia notatipennis*, Zante, PIC, p. 50, Echange xx, **n. sp.**
- Gonocleonus sculptus*, Algeria and Sicily, FAUST, p. 206, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Gonoroapterus n. sp. Scolopteridæ*, for *G. spinicollis n. sp.*, New Zealand, BROWN, p. 122, Ann. Nat. Hist. xiii.
- Hexteus n. g.* *Cossonida*, p. 124, for *H. rubidus n. sp.*, New Zealand, p. 125, BROWN, t. c.
- Heliophilus*, cf. *Sciaphobus*.
- Heterostylus elongatus*, E. Africa, HARTMANN, p. 374, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Hipporrhinus*, monograph, MARSHALL, pp. 6–141, pls. i–iv, P. Zool. Soc. London 1904, i.
- H. gravidus*, p. 30, *namaquus*, p. 34, *inflatus*, p. 38, *angustus*, p. 40, *peringueyi*, p. 42, pl. i, fig. 4, *suturalis*, p. 46, fig. 9, *variegatus*, p. 50, *humeralis*, p. 57, fig. 10, *knysna*, p. 77, *scaber*, p. 81, *exilis*, pl. ii, fig. 10, *nyassæ*, pl. iii, fig. 1, p. 86, *angolensis*, fig. 4, p. 87, *pilosus*, p. 95, *modestus*, p. 106, *permixtus*, pl. iii, fig. 8, p. 108,

- cinereus*, fig. 9, p. 111, *propinquus*, pl. iv, fig. 5, p. 123, *cervinus*, fig. 7, p. 125, *sjustedti*, p. 131, *oneili*, p. 134, Africa, MARSHALL, t. c. **n. spp.**
- Holonychus curtipennis*, Madagascar, FAIRMAIRE, p. 237, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Homoetrachelus hadromerus*, W. Australia, LEA, p. 84, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Hypera oblonga*, characters, SOLARI, p. 536, Ann. Mus. Genova xli.
- H. abrutiana*, Italy, DESBROCHERS, p. 63, Frelon xii, **n. sp.**
- Hypolixus paulonotatus*, Algeria, PIC, p. 36, Echange 1904, **n. sp.**
- Hypophylax* **n. n.** for *Stenophylax* Fairm. 1903, FAIRMAIRE, p. 241, Ann. Soc. ent. Belgique xlviii.
- Inophlæus sternalis*, p. 111, *discrepans*, p. 112, *longicornis*, p. 113, New Zealand, BROWN, Ann. Nat. Hist. xiv, **n. spp.**
- Ischnotrachelus*, table of species, with *Anasticomeres* subg. **n.**, p. 169, for *I. mutabilis* Faust, HELLER, pp. 169–175, Ent. Tidskr. xxv.
- I. ischnomias*, p. 175, *alternans*, p. 176, *elegans*, p. 177, Cameroons, HELLER, t. c. **n. spp.**
- Isomicrus* **n. g.** *Isorrhynchinorum*, p. 413, *I. castaneus* **n. sp.**, Usambara, p. 414, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Læmosuccus*, table of Australian, corrected, LEA, p. 134, Tr. R. Soc. S. Austral. xxviii.
- Laprocerus obesulus*, Madeira, DESBROCHERS, p. 63, Frelon xii, **n. sp.**
- Larinus ferrugatus*, metamorphosis, XAMBEU, p. 81, Naturaliste 1904.
- L. zancleanus*, Sicily, VITALE, Riv. Col. ital. ii, ? p. 125 [not seen by Recorder], **n. sp.**
- Leptops granulatus*, p. 99, *nodicollis*, *maleficus*, p. 100, Queensland, *setosus*, p. 101, *canaliculatus*, p. 102, N. S. W., *brachystylus*, p. 103, *horridus*, p. 104, *elegans*, p. 105, Queensland, LEA, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Limnobaris lineigera*, Usambara, HARTMANN, p. 415, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Lithinus perrieri*, *parcelacteus*, Madagascar, FAIRMAIRE, p. 242, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Lixomorphus* **n. g.** p. 189, for *ocularis* Fabr., FAUST, Deutsche ent. Zeitschr. 1904.
- Lixus*; table and catalogue of Palearctic, DESBROCHERS, Frelon xii, pp. 65–104, cf. *Broconius*, *Prionolixus*; PETRI criticises Desbrochers' work, treats his genn. n. as subgenera, and tabulates the Palearctic species, Wien. ent. Zeit. xxiii, pp. 183–198; *L. petrii* **n. n.** for *macer* Petri, *L. cafferarius* **n. n.** for *carinicollis* Fähr., *L. fahraei* **n. n.** for *hypocrita* Fähr., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- L. coloratus*, Siberia etc., PETRI, p. 194, Wien. ent. Zeit. xxiii; *L. denticollis*, Syria, *pubirostris*, Kopet-Dagh, p. 65, *rectodorsalis*, Mardin, p. 66, *macer*, Tonja, *convexicollis*, p. 67, *amplirostris*, p. 68, Akbès, *colchicus*, Caucasus, *ibis*, Syria, p. 69, *obesus*, p. 70, *baculiformis*, Caucasus, *bifasciatus*, Samarkand, p. 71, *apfelbecki*, Hungary, p. 72, *operculifer*, p. 73, *noctuinus*, *polylineatus*, p. 74, Caucasus, *gibbirostris*, Greece, p. 75, *korbi*, Anatolia, p. 76, *ulcerosus*, S. Europe, p. 77, PETRI, t. c.; *L. tunisiensis*, p. 60, *confusus*, p. 61, Tunis, *inermipennis*, Asia Minor, p. 62, DESBROCHERS, Frelon xii: *L. striatopunctatus*, Syria, p. 72, *rectirostris*, Biskra, p. 74, *villosulus*, Algeria, p. 86, *quadraticollis*, Asia Minor, p. 90, *tibiellus*, Biskra, p. 94, DESBROCHERS, t. c.; *L. weisei*, Usambara, HARTMANN, p. 390, Deutsche ent. Zeitschr. 1904; *L. gigas*, p. 243, *floccosus*, *albicornis*, *dorsotinctus*, p. 244, *bituberosus*, p. 245, *humerosus*, p. 246, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *L. (Hypolixus) impressifrons*, subdentatus, India, p. 233, *xantussi*, Borneo, p. 234, *L. semilunatus*,

- Madeira, *coloratus*, Turkestan, p. 235, PETRI, Ann. Mus. Hungar. ii : **n. spp.**
- Mamuchus* **n. g.** near *Cryptorhynchus*, *M. squamosopictus*, p. 249, *inornatus*, p. 250, **n. spp.**, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii.
- Mandulotus campylocnemis*, *piliventris*, p. 116, *scaber*, p. 117, *amplicollis*, *opurcus*, p. 118, *excavatus*, *suturalis*, p. 119, *pinguis*, *pallidus*, p. 120, *reticulatus*, *pusillus*, p. 121, *subglaber*, p. 122, Australia, LEA, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Matesia* **n. g.** near *Euphalia*, *M. maculata* **n. sp.**, N.W. Australia, LEA, p. 87, t. c.
- Mecaspis bedelli*, Marocco, p. 225, *lentus*, Turkestan, p. 227, *libanicus*, Lebanon, p. 229, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Mechistocerus* and *Rhadinomerus*, characters and table, HELLER, p. 186, Ent. Tidskr. xxv.
- M. (Rhadinomerus) vulgaris*, Cameroons, id., p. 190, t. c. **n. sp.**
- Medicasta leptopsoides*, W. Australia, LEA, p. 110, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Megarrhinus tanganus*, p. 402, *distinctus*, p. 403, *frater*, p. 404, *interstitialis*, p. 405, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Meira amorei*, Abruzzo, SOLARI, p. 526, Ann. Mus. Genova xli, **n. sp.**
- Mesocleonus* **n. g.** pp. 189 & 222, for *implicatus* Faust, FAUST, Deutsche ent. Zeitschr. 1904.
- Metallites aqueixtanus*, France, ABEILLE, p. 280, Bull. Soc. ent. France 1904, **n. sp.**
- Methypora parallela* to *Ophthalmorychus*, LEA, p. 84, Tr. R. Soc. S. Austral. xxviii.
- Metialma neptis*, Cameroons, HELLER, p. 196, Ent. Tidskr. xxv; *M. usambarica*, E. Africa, HARTMANN, p. 412, Deutsche ent. Zeitschr. 1904; *M. pusilla*, Madagascar, FAIRMAIRE, p. 248, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Miccotrogus lederi*, Armenia, *prescutellaris*, Mongolia, PIC, Bull. Soc. Autun xv, **n. spp.**
- Microcleonus* **n. g.** for part of *Hypolixus*, DESBROCHERS, p. 95, Frelon xii. Cf. *Paralixus*.
- Microcleonus* **n. g.** pp. 183 & 198, for *sedakovi* Bohm. and *panderi* Fahr., FAUST, Deutsche ent. Zeitschr. 1904.
- Mimus usambaricus*, E. Africa, HARTMANN, p. 417, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Molytophilus* **n. g.** *Molytinorum*, *M. carinatus* **n. sp.**, Usambara, HARTMANN, p. 388, t. c.
- Monolophus* **n. g.** pp. 182 & 196, for *Mecaspis præditus* Faust; FAUST, Deutsche ent. Zeitschr. 1904.
- Mylacus nitidulus*, Italy, VITALE, Riv. Col. ital. ii, ? p. 125 [not seen by Recorder], **n. sp.**
- Myllocerus crassicornis*, Tokat, DESBROCHERS, p. 105, Frelon xii: *M. rad-densis*, Amurland, PIC, p. 35, Echange 1904; *M. plebeius*, E. Africa, HARTMANN, p. 387, Deutsche ent. Zeitschr. 1904; *M. carinatus*, N.W. Australia, p. 85, *usitatus*, N. S. Wales, p. 86, LEA, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Nanophyes spinicrus*, *magnus*, Madagascar, FAIRMAIRE, p. 250, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Nemoxenus* **n. g.** pp. 188 & 232, with *zebra* Chev., etc., FAUST, Deutsche ent. Zeitschr. 1904.
- Neosyagrius* **n. g.** p. 515, *N. cordipennis* **n. sp.**, Sydney, p. 516, LEA, Agric. Gaz. N. S. W. xv.
- Nomimonyx* **n. g.** pp. 186 & 222, for *N. perturbans* **n. sp.**, Cape Good Hope (not described), FAUST, Deutsche ent. Zeitschr. 1904.

- Nycterorhinus* **n. g.** near *Crepidotus*, *N. ebenus* **n. sp.**, Madagascar, FAIRMAIRE, p. 252, Ann. Soc. ent. Belgique xlviii.
- Ochtharthrum aurivilliusi*, Cameroons, HELLER, p. 178, Ent. Tidskr. xxv, **n. sp.**
- Oditesus tibialis*, W. Australia, LEA, p. 114, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Omius*; characters and composition, synonymy; *Urometopus* subg. **n.** for *longicornis* etc., FORMÁNEK, pp. 17–25; *Rhinomius* subg., characters of species, pp. 24–28 and 174–181, Munchen. Kol. Zeitschr. ii.
- O. haifensis*, Syria, FORMÁNEK, p. 299, t. c. **n. sp.**
- Ophthalmorychus spongiosus*, N. S. Wales, LEA, p. 83, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Oreocharis ferruginea*, p. 120, *pullata*, p. 121, New Zealand, BROWN, Ann. Nat. Hist. xiv, **n. spp.**
- Origenes* **n. g.** for *Hipporrhinus callidus*, MARSHALL, p. 141, Entomologist 1904.
- Orthochaetes alpicola*, Val Sorino, K. DANIEL, p. 26, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Ospithia ikuthana*, E. Africa, HELLER, p. 290, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Otiorrhynchus cardiniger brattiensis* var. **n.**, MÜLLER, p. 209, Munchen. Kol. Zeitschr. ii; *O. romanus* var. *minor*, VITALE, p. 24, Natural. Sicil. xvii; *O. beauprei* **n. n.** for *vaulogeri* Sol. nec Pic, SOLARI, p. 536, Ann. Mus. Genova xli.
- O. lazarevici*, Servia, CSIKI, p. 591, Ann. Mus. Hungar. ii; *O. (Aramnichnus) amanus*, Asia Minor, REITTER, p. 159, Wien. ent. Zeit. xxiii : **n. spp.**
- Oxystoma laeviuscula*, Algeria, DESBROCHERS, p. 58, Frelon xii, **n. sp.**
- Pachycerus desertorum*, Kisil-Kum, *sellatus*, Bengal, p. 223, *crassicornis*, Kaifa, p. 224, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Pachyprius modicus*, New Zealand, BROWN, p. 117, Ann. Nat. Hist. xiv, **n. sp.**
- Paralixus* **n. n.** for *Microcleonus* Desb., CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Paraplesius* **n. g.** near *Amphitmetus*, *P. plebeius* **n. sp.**, Usambara, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Pelororhinus amplipennis*, W. Australia, LEA, p. 124, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Pentarthrum crassellum*, New Zealand, BROWN, p. 123, Ann. Nat. Hist. xiv, **n. sp.**
- Pentatropis* **n. g.** p. 192, for S. African *Pachycerus*, with *P. blandus* **n. sp.**, Cape, p. 193, FAUST, Deutsche ent. Zeitschr. 1904.
- Peritelus nigrans* = (*Ot. albocoronatus* Stierl.), SOLARI, p. 536, Ann. Mus. Genova xli.
- Phaulosomus* **n. g.** pp. 186, 204, for *mus* Kolbe, and *P. signatellus*, Senegal, and *kilimanus*, Kilimanjaro, **n. spp.**, pp. 204, 205, FAUST, Deutsche ent. Zeitschr. 1904.
- Phylacta maculifera*, New Zealand, BROWN, p. 119, Ann. Nat. Hist. xiv, **n. sp.**
- Phylaitis sanguinosus*, Madagascar, FAIRMAIRE, p. 248, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Phytonomus depressidorsum*, Algeria, p. 59, *strictus*, Caucasus, p. 60, DESBROCHERS, Frelon xii; *P. horvathi*, Servia, CSIKI, p. 592, Ann. Mus. Hungar. ii : **n. spp.**
- Piezotrachelus foveicollis*, p. 398, *vicinus*, p. 399, E. Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Platycopes globulus*, Madagascar, FAIRMAIRE, p. 239, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Platyomida brevicornis*, New Zealand, BROWN, p. 107, Ann. Nat. Hist. xiv, **n. sp.**

- Polydrosus lateralis* var. n. *inermis*, SOLARI, p. 527, Ann. Mus. Genova xli.
P. (? *Chærodrys*) *cressius*, Crete, PIC, p. 4, Echange 1904, **n. sp.**
- Polyphrades vitis*, p. 88, *despicatus*, *exoletus*, p. 89, *extenuatus*, W. Australia, *setosus*, N.W. Australia, p. 90, *granulatus*, Sydney, p. 91, LEA, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Pparchus* **n. g.** near *Sargon*, for *P. lewisi* **n. sp.**, New Zealand, BROWN, p. 114, Ann. Nat. Hist. xiv.
- Prionolixus* **n. g.** p. 80, for *L. seriemaculatus* and *soricinus*, DESBROCHERS, Frelon xii.
- Prionorhinus lacrimans*, *peringueyi*, S. Africa, FAUST, p. 200, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Procas fastidiosus*, Tunis, PIC, p. 93, Echange xx; *P. sibiricus*, E. Siberia, PIC, p. 27, t. c. : **n. spp.**
- Prosyuleus phytolymus* to *Eutinophæa* or *Maleuterpes*, LEA, p. 79, Tr. R. Soc. S. Austral. xxviii.
- Pseudominus* **n. g.** *Cossinorum*, *P. corpulentus* **n. sp.**, Usambara, p. 416, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Pseudostromborrhinus* **n. g.** near *Stromborrhinus*, p. 191, *P. dorsalis* **n. sp.**, Cameroons, p. 192, HELLER, Ent. Tidskr. xxv.
- Ptochus* (*Argoptochus*) *ophthalmicus*, Italy, K. DANIEL, p. 83, Munchen. Kol. Zeitschr. ii; *P. cretensis*, Crete, PIC, p. 4, Echange 1904 : **n. spp.**
- Rhadinosomus lacordairei*, great variation, LEA, p. 81, Tr. R. Soc. S. Austral. xxviii.
- Rhinaria caudata*, *concavirostris*, p. 125, *sulcirostris*, *bisulcata*, p. 126, *favosa*, *tragocephala*, p. 127, *simulans*, p. 128, *aberrans*, *convexirostris*, p. 129, Australia, LEA, t. c. **n. spp.**
- Rhinocles*? *modestus*, Cameroons, HELLER, p. 199, Ent. Tidskr. xxv, **n. sp.**
- Rhypastus* **n. g.** near *Platyomicus*, p. 239, *R. truncatulus* **n. sp.**, Madagascar, p. 240, FAIRMAIRE, Ann. Soc. ent. Belgique xlvi.
- Rhyssommatus subcostatus*, pl. xvii, fig. 23, p. 334, *rufus*, fig. 24, p. 335, *pruinosis*, fig. 27, p. 336, *nigerrimus*, fig. 28, *morio*, fig. 29, p. 337, CHAMPION, Biol. Centr. Amer. Col. iv, pt. 4.
- R. rugosus*, pl. xvii, fig. 14, p. 327, *rugulipennis*, fig. 15, *yucatanus*, p. 328, *dilatocollis*, fig. 16, *acutecostatus*, fig. 17, *crenatus*, p. 329, *latus*, fig. 18, *latipennis*, fig. 19, p. 330, *parvulus*, *laticollis*, fig. 20, p. 331, *biseriatus*, *sculpticollis*, fig. 21, p. 332, *sculpturatus*, *punctato-sulcatus*, p. 333, *debilis*, fig. 22, *alternans*, p. 334, *rufescens*, fig. 25, p. 335, *subrufus*, fig. 26, p. 336, *puncticollis*, *nitidus*, fig. 30, p. 338, Central America, CHAMPION, t. c. **n. spp.**
- Rhytiphleus ovipennis*, p. 240, *holonychinus*, p. 241, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Sclerosomus luticauda*, Mexico, p. 314, pl. xvi, fig. 26, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4, **n. sp.**
- Sciaphilus diversepubens*, *dividuus*, p. 91, *nitens*, *minutissimus*, p. 92, Algeria, PIC, Echange xx, **n. spp.**
- Sciaphobus* **n. n.** for *Heliophilus*, p. 86, with *S. psittacinus* **n. sp.**, Italy, p. 85, K. DANIEL, Munchen. Kol. Zeitschr. ii.
- Scotophilus* **n. g.** *Menemachinorum*, *S. odiosus* **n. sp.**, Usambara, HARTMANN, Deutsche ent. Zeitschr. 1904, p. 411.
- Scythropus eusomoides*, Tangier, DESBROCHERS, p. 107, Frelon xii, **n. sp.**
- Sibinia fausti*, to *Tychius*, PIC, p. 147, Bull. Soc. Autun xv.
- S. obscuripes*, Turcomania, *albosquamosa*, Dead Sea, PIC, p. 148, t. c. **n. spp.**
- Sitona*; the known food-habits, BARGAGLI, pp. 8-10, Bull. Soc. ent. Ital. xxxvi.
- Solenopus bilineatus*, pl. xvi, fig. 25, p. 313, CHAMPION, Biol. Centr.-Amer. Col. iv, pt. 4.
- Sphenophorus mormon*, p. 128, *distichlidis*, p. 129, *confluens*, p. 133, *vestitus*, *neomexicanus*, p. 134, *phœniciensis*, p. 135, *coactorum*, p. 136, N. America, CHITTENDEN, P. ent. Soc. Washington vi, **n. spp.**

- Sphrigodes variegatus*, p. 383, *vicinus*, p. 385; Africa, HARTMANN, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Stenolandra n. g.* near *Catapygus*, *S. lacteostrigata n. sp.*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii.
- Stenopelmus rufinasus* = (*Degorsia champenoisi*), BEDEL, p. 23, Bull. Soc. ent. France 1904.
- Stephanocleonus persimilis*, Mongolia, *jacobsoni*, no locality, p. 244, *koppeni*, Mongolia, *waldheimi*, Irkutsk, p. 245, *spissus*, *dubius*, no localities, p. 246, *confessus*, Transbaikal, *versutus*, Dauria, p. 247, *hirtipes*, Dauria, p. 250, *comicus*, Mongolia, *brunnipes*, Nan-Shan, *exiguus*, Changai, p. 251, *chinensis*, *sejunctus*, Grenada, p. 253, *colossus*, Chan-gai, p. 256, *acerbus*, West-Victoria, *suspiciosus*, Gan-ssu, *suffusus*, *tardus*, p. 257, *illeus*, p. 258, Mongolia, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Sternechus* = (*Plectromodes* Cas.), CASEY, p. 324, Canad. Ent. xxxvi.
- Stomodes amorei*, Italy, DESBROCHERS, p. 64, Frelon xii, **n. sp.**
- Stramia n. g.* for part of *Hipporhinus* and *Tanyrrhynchus* Boh., MARSHALL, p. 140, P. Z. S. 1904, i.
- Synaptoplus dentipennis*, Africa, HARTMANN, p. 370, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Systates collaris*, p. 378, *denticollis*, *tuberculifer*, p. 379, Usambara, HARTMANN, t. c. **n. spp.**
- Tanymecus crassicornis*, Rome, SOLARI, p. 527, Ann. Mus. Genova xli, **n. sp.**
- Tapinomorphus n. g.* near *Macrostylus*, *T. setosus*, p. 372, *metallicus*, p. 373, **n. spp.**, Africa, HARTMANN, Deutsche ent. Zeitschr. 1904.
- Temnorhinus seductus*, Djibouti, *martini*, Cape Palos, *limbifer*, China, FAUST, p. 218, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Tetragonothorax curvipes*, Abyssinia, *parvulus*, Scioa, FAUST, p. 197, t. c. **n. spp.**
- Thylacites laufferi*, Spain, p. 37, *barrosi*, Portugal, p. 38, *minus*, Bosnia, p. 39, DESBROCHERS, Frelon xiii, **n. spp.**
- Tigones dispar*, New Zealand, BROWN, p. 107, Ann. Nat. Hist. xiv, **n. sp.**
- Timorus maximus*, Brazil, HELLER, p. 294, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tocris n. g.* *Cylindrorhinidae*, p. 115, for *T. latirostris n. sp.*, New Zealand, p. 116, BROWN, Ann. Nat. Hist. xiv.
- Trichobaris mucorea*, natural history, BRIDWELL, pp. 44-46, Bull. U. S. Dep. Agric. Ent. xlv.
- Tychius nigricollis* var. *trilineata*, PIC, p. 50, Echange xx.
- T. leprieuri*, Algeria, PIC, p. 82, t. c.; *T. magnificus*, Buchara, *armeniacus*, Armenia, p. 141, *semiauratus*, Mongolia, *uralensis*, Ural, p. 142, *albonotatus*, p. 143, *bisquamosus*, Araxes Valley, *turkestanicus*, Anan, p. 144, *brevipennis*, *auliensis*, Aulie-Ata, p. 145, *rufofemoratus*, Syria, *starcki*, Caucasus, p. 146, PIC, Bull. Soc. Autun xv : **n. spp.**
- Urometopus subg. n.*, cf. *Omius*, *U. ferrugineus*, Astrabad, FORMÁNEK, p. 299, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Xanum n. g.* near *Ectemnorhinus*, for *X. vanhoeffenianum n. sp.*, Crozet islds., ENDERLEIN, p. 670, Zool. Anz. xxvii.
- Xanthochelus tropicus*, *beatius*, *nepotalis*, Africa, p. 260, *assamensis*, *insubidus*, India, *figuratus*, *insolens*, Africa, p. 261, FAUST, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Xenomacrus n. g.* pp. 186, 201, for S. African spp., FAUST, t. c.
- Xynæa uniformis*, Kings Sound, LEA, p. 123, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Yuccaborus lentiginosus*, Texas, CASEY, p. 323, Canad. Ent. xxxvi, **n. sp.**
- Zantes convexicollis*, *rufinus*, Madagascar, FAIRMAIRE, p. 246, Ann. Soc. ent. Belgique xlviii, **n. spp.**

- Zephryne personata*, N. S. Wales, LEA, p. 115, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
Zurus spilothonax, Brazil, HELLER, p. 291, Ann. Soc. ent. Belgique xlviii, **n. sp.**

SCOLYTIDÆ.

[Cf. BLANDFORD (614), BROUN (184), HAGEDORN (647-651), HOPKINS (704), KNOCKE (823), LEA (864), POWELL (1104).]

Photographs of the work etc. of numerous *Scolytidæ*, HOPKINS, Bull. U. S. Dep. Agric. Ent., No. 48, 22 pls.

The generations in *Scolytidæ*, KNOCKE (823).

Scolytidæ of Moravia, FORMÁNEK (535).

Brachyspartus ebeninus, pl. viii, f. 11, *barbatus*, Panama, BLANDFORD, p. 265, Biol. Centr.-Amer. Col. iv, pt. 6, **n. spp.**

Coccotrypes eggersii, S. America, in fruit of *Phytelephas*, HAGEDORN, p. 449, Allg. Zeitschr. Ent. ix.

Corthylus, the genus with table of species, BLANDFORD, pp. 251-254, Biol. Centr.-Amer. Col. iv, pt. 6.

C. flagellifer, pl. viii, f. 2, p. 255, *luridus*, p. 256, *ptyocerus*, f. 5, p. 257, *comatus*, p. 258, *panamensis*, p. 259, *rubricollis*, p. 260, *collaris*, *parvulus*, p. 261, Central America, *fuscus*, Brazil, *discoideus*, Venezuela, p. 262, id. t. c. **n. spp.**

Cryphalus granulatus, p. 229, var. *n. tredlii*, p. 232, *C. asperatus* Gyll. = (*binodulus* Ratz.) p. 230, HAGEDORN, Munchen. Kol. Zeitschr. ii.

C. grothii, Centr. Eur., id. t. c., p. 232 and 372, cut, **n. sp.**

Dendroctonus valens, note on habits, POWELL, p. 239, J. N. York Ent. Soc. xii.

Dendroterus n. g. near *Dryocates*, *D. mexicanus*, pl. vii, f. 25, *salliei n. spp.* Mexico, BLANDFORD, p. 233, Biol. Centr.-Amer. Col. iv, pt. 6.

Glochincerus n. g. Corthyli, *G. retusipennis*, pl. ix, figg. 1, 2, p. 266, *gemellus*, p. 267, **n. spp.**, Guatemala, BLANDFORD, t. c.

Gnathotrichus consentaneus, pl. vii, f. 26, p. 247, *bituberculatus*, p. 248, Guatemala, BLANDFORD, t. c. **n. spp.**

Hylesinus fici, Sydney, LEA, p. 103, P. Linn. Soc. N. S. Wales xxix, **n. sp.**

Hylocurus spinifex, Mexico, pl. vii, f. 23, p. 225, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, **n. sp.**

Hypothenemus eruditus, synonymy and habitat, BLANDFORD, pp. 229, 230, t. c.

H. validus, Mexico, p. 228, *lævigatus*, Nicaragua, p. 229, id. t. c. **n. spp.**

Ips curvidens and allies, distinctions, BARGMANN, pp. 262-264, Allg. Zeitschr. Ent. ix.

Mesoscolytus n. g. p. 125, for *M. inurbanus n. sp.*, New Zealand, p. 126, BROUN, Ann. Nat. Hist. xiv.

Metacorthylus n. g. M. nigripennis n. sp., Panama, pl. viii, f. 10, p. 263, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6.

Phlæobius vittatus, ♂, UYTENBOOGAART, p. 143, Ent. Ber. Nederland. i.

Pityophthorus nigricans, p. 236, *amœnus*, *confusus*, p. 237, *poricollis*, *cacuminatus*, p. 238, *guatemalensis*, p. 239, *diglyphus*, *obtusipennis*, p. 240, *timidus*, *confinis*, p. 241, *cinnamatus*, *obsoletus*, p. 242, *P. ? incompositus*, p. 243, *carinifrons*, *politus*, p. 244, *deyrollei*, *incommodus*, p. 245, Central America, BLANDFORD, Biol. Centr.-Amer. Col. iv, pt. 6, **n. spp.**

Platypus australis, sexes, LEA, p. 105, P. Linn. Soc. N. S. Wales xxix.

P. omnivorus, Tasmania, id., p. 104, t. c. **n. sp.**

Pterocyclon, characters and synonymy, BLANDFORD, pp. 288-270, Biol. Centr.-Amer. Col. iv, pt. 6.

P. melanura, pl. viii, f. 13, p. 272, *præruptum*, *tomicoides*, f. 15, p. 273,

- hoegeri*, p. 274, *umbrinum*, *consimile*, p. 275, *difficile*, *luctuosum*, p. 276, *bidens*, p. 277, *glabrifrons*, *punctifrons*, p. 278, *cordatum*, p. 279, *terminatum*, *egenum*, p. 280, Centr. America, BLANDFORD, t. c. **n. spp.**
- Scolytoplastypus* and its species discussed, HAGEDORN, pp. 404–413, Stettin Ent. Zeit. lxxv.
- S. fasciatus*, Caffraria, id. p. 405, t. c.; *S. hamatus*, Java, HAGEDORN, p. 260, cuts, Ins. Borse 1904; *S. pubescens*, p. 123, *minimus*, p. 125, Darjiling, *muticus*, p. 124, Japan, HAGEDORN, Bull. Mus. Paris 1904 : **n. spp.**
- Scolytus*, synonymical notes, SEMENOW, pp. 37, 38, Rev. Russe Ent. iv.
- Styphlosoma* **n. g.** near *Cryphalus*, *S. granulatum* **n. sp.**, Panama, BLANDFORD, p. 232, Biol. Centr.-Amer. Col. iv, pt. 6.
- Tomicus truncatus* Er. = (*Amasa thoracica* Lea), LEA, p. 106, P. Linn. Soc. N. S. Wales xxix; *T. plastographus*, natural history, POWELL, p. 238, J. N. York Ent. Soc. xii.
- Xyleborus*, to this belong *Xylopertha compressa*, *hirsuta* and *parva* Lea, LEA, p. 106, P. Linn. Soc. N. S. Wales xxix; *X. perforans*, in *Phyt-elephas* fruit, HAGEDORN, p. 449, Allg. Zeitschr. Ent. ix; *X. dispar*, larval structure, habits, CHAPMAN, pp. 100–102, Tr. ent. Soc. London 1904.
- X. hirtus*, *geminatus*, Darjiling, HAGEDORN, p. 126, Bull. Mus. Paris 1904, **n. spp.**

BRENTHIDÆ.

- Larva of *Brenthus lineicollis*, HELLER, p. 397, Stettin Ent. Zeit. lxxv.
- Notes on N. American *Brenthidæ*, BEYER, p. 168, J. N. York Ent. Soc. xii, and corrections, t. c. p. 257.

ANTHRIBIDÆ.

- [Cf. JORDAN (767–769, 772), PIC (1069), SCHAEFFER (1220), SCHILSKY (1227).]
- Acorynus tonkinianus*, *mosonicus*, Tonkin, JORDAN, p. 232, Nov. Zool. xi, **n. spp.**
- Allandrus indistinctus*, Bolivia, JORDAN, p. 242, t. c. **n. sp.**
- Anthrenosoma* **n. g.** p. 281, *A. tibialis*, *bohlsi*, *gounellei*, p. 282, **n. spp.**, S. America, JORDAN, t. c.
- Anthrribus wallacei philippinensis*, *malaicus* subsp. n., JORDAN, p. 235, t. c.
- A. planatus*, Gold Coast, JORDAN, p. 239, t. c.; *A. macrocerus*, Sikkim, *frontalis*, Sumatra, JORDAN, p. 235, t. c.; *A. farinatus*, *gounellei*, p. 296, *lævipennis*, *picticollis*, p. 297, *frenatus*, *analís*, p. 298, *lineiger*, *collaris*, *inequalis*, p. 299, *plagiatus*, p. 300, S. America, JORDAN, t. c.; *A. bipunctatus*, p. 235, *penicellatus*, p. 236, Texas, SCHAEFFER, J. N. York Ent. Soc. xii : **n. spp.**
- Apatenia poecila*, p. 85, *gularis*, p. 86, New Guinea, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Apolecta tonkiniana*, Manson Mts., p. 236, *diversa*, Borneo, p. 237, JORDAN, Nov. Zool. xi, **n. spp.**
- Asemorhinus sportella*, Sumatra, Borneo, JORDAN, p. 234, t. c. **n. spp.**
- Barra* **n. g.** p. 274, *B. gounellei* **n. sp.**, Bahia, p. 275, JORDAN, t. c.
- Blaberops* **n. g.** near *Blaberus*, p. 238, *B. macrocerus* **n. sp.**, Usambara, p. 239, JORDAN, t. c.
- Caccorhinus obscurus*, Celebes, JORDAN, p. 236, t. c. **n. sp.**
- Callanthribus* **n. g.** near *Sintor*, p. 82, *C. xanthomelas* **n. sp.**, New Guinea, p. 83, JORDAN, Ann. Mus. Genova xli.
- Corrhecerus melaleucus*, *aqualis*, S. America, JORDAN, p. 271, Nov. Zool. xi, **n. spp.**

- Dasyrhopala* **n. g.** near *Discotenes*, *D. tarsalis* **n. sp.**, Brazil, JORDAN, p. 272, t. c.
- Dendrotrogus colligens papuanus* subsp. n., JORDAN, p. 84, Ann. Mus. Genova xli.
- Discotenes consors*, Peru, JORDAN, p. 272, Nov. Zool. xi, **n. sp.**
- Domoptolis* **n. g.** for *Gymnognathus menetriesi* Boh., JORDAN, p. 252, t. c.
- Doticus convexus*, Celebes, p. 90, *planatus*, New Guinea, p. 91, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Epitaphius lunatus*, E. Africa, JORDAN, p. 240, Nov. Zool. xi, **n. sp.**
- Erotylopsis* **n. g.** near *Euparius*, p. 308, *E. pujoli* **n. sp.**, Brazil, p. 309, JORDAN, t. c.
- Eucorynus unicolor*, Ternate, JORDAN, p. 85, Ann. Mus. Genova xli, **n. sp.**
- Euclytropsis* **n. g.** near *Discotenes*, *E. pustulata*, *striata*, Brazil, p. 273, *pylades*, Mexico, p. 274, **n. spp.**, JORDAN, Nov. Zool. xi.
- Eugigas harmandi*, pl. viii, figg. 15, 16, p. 129, LESNE, Mission Pavie iii.
- Eugonodes* **n. g.** near *Eugonus*, *E. marmoreus*, *brevirostris* **n. spp.**, Brazil, JORDAN, Nov. Zool. xi.
- Eugonops* **n. g.** *E. germaini*, Bolivia, *clericus*, Bahia, p. 285, **n. spp.**, JORDAN, t. c.
- Eugonus simplex*, *tenuis*, p. 300, *robustus*, *ornatus*, *particolor*, p. 301, S. America, JORDAN, t. c. **n. spp.**
- Euparius polius*, *obesus*, *calcaratus*, p. 303, *molitor*, *similis*, p. 304, *consors*, *nodosus*, *rufus*, p. 305, *nigritarsis*, p. 306, *albiceps*, *parculus*, *hypsideres*, p. 307, *quagga*, *suturalis*, p. 308, S. America, JORDAN, t. c. **n. spp.**
- Euphlæobius* **n. g.** near *Phlæobius*, *E. asellus* **n. sp.**, E. Africa, JORDAN, p. 239, t. c.
- Eusintor* **n. g.** near *Sintor*, p. 80, *E. lorice* **n. sp.**, New Guinea, p. 81, JORDAN, Ann. Mus. Genova xli.
- Eusphyrus scutellaris*, p. 290, *hamatus*, *lateralis*, *nubilus*, p. 291, S. America, JORDAN, Nov. Zool. xi, **n. spp.**
- Exechontis* **n. g.** near *Gibber*, p. 283, *E. sparsa* **n. sp.**, Brazil, p. 284, JORDAN, t. c.
- Goniclaeus* **n. g.** p. 260, *G. baccatus*, *melas*, p. 261, *minor*, *hirsutus*, *apicalis*, p. 262, S. America, *tarsalis*, Costa Rica, p. 263, *capucinus*, Peru, *umbrinus*, Mexico, p. 264, **n. spp.**, JORDAN, t. c.
- Gymnognathus ophiopsis* Dalm. = (*decorus* Perr.), JORDAN, p. 242, t. c.
- G. extensus*, p. 242, *marianna*, *ada*, *blanca*, p. 243, *hilda*, *emma*, p. 244, *clara*, *bella*, p. 245, *coronatus*, *nubilus*, p. 246, *alma*, *irma*, p. 247, *clélia*, *erna*, *nanus*, p. 248, *soror*, Brazil, *helena*, Colombia, p. 249, *editha*, *martha*, p. 250, *hamatus*, *leucomelas*, p. 251, *comptus*, Brazil, *scolytinus*, Peru, JORDAN, t. c. **n. spp.**
- Habrissus tonkinianus*, Tonkin, JORDAN, p. 234, t. c. **n. sp.**
- Homoclaeus* **n. g.** *H. concolor*, p. 264, *femoralis*, Nicaragua, *vestitus*, p. 265, *dorsalis*, p. 266, S. America, **n. spp.**, JORDAN, t. c.
- Hypseus axillaris major*, p. 87, *H. frenatus morio*, p. 88, subspp. n., JORDAN, Ann. Mus. Genova xli.
- Hypseus vestitus*, Celebes, JORDAN, p. 87, t. c. **n. sp.**
- Lagopezus lugubris*, Rio de Janeiro, JORDAN, p. 275, Nov. Zool. xi, **n. sp.**
- Litocerus histrio fluviatilis* subsp. n., JORDAN, p. 85, Ann. Mus. Genova xli.
- L. sticticus*, Tonkin, JORDAN, p. 233, Nov. Zool. xi, **n. sp.**
- Mecocerus hauseri*, W. Africa, JORDAN, p. 238, t. c.; *M. callosus*, Tonkin, JORDAN, p. 231, Nov. Zool. xi : **n. spp.**
- Mecotropsis cylindricus*, Tonkin, JORDAN, p. 230, t. c. **n. sp.**
- Misthosima crucifera*, New Guinea, JORDAN, p. 90, Ann. Mus. Genova xli, **n. sp.**
- Monoclaeus* **n. g.** *M. elaphrinus*, *spiniger*, p. 255, *annulipes*, *basalis*, p. 256, *rhombifer*, or, p. 257, *sordidus*, S. America, *idacus*, Mexico, p. 258,

- costatus*, Bolivia, *centralis*, Para, p. 259, *niger*, Costa Rica, p. 260, JORDAN, Nov. Zool. xi, **n. spp.**
- Nemotrichus*, tabulated, p. 270, *N. jekeli*, *andicola* and *uniformis*, subsp. n., p. 269, JORDAN, t. c.
- N. vitticollis*, Cayenne, *armatus*, Costa Rica, p. 267, *niger*, *pæcilus*, p. 268, *fuscus*, *obtusus*, p. 269, S. America, JORDAN, t. c. **n. spp.**
- Nessiara armata*, p. 233, *mosonica*, p. 234, Tonkin, JORDAN, t. c. **n. spp.**
- Ormiscus*, and allies, synonymy, classification, JORDAN, p. 286, t. c.
- O. cupreus*, p. 286, *ornatus*, *ancora*, *costifer*, p. 287, *sparsilis*, *vulgaris*, p. 288, *discifer*, *spilotus*, *lineatus*, *costifrons*, p. 289, *brevis*, *angulatus*, p. 290, S. America, JORDAN, t. c. **n. spp.**
- Orthotropis* **n. g.** near *Gymnognathus*, *O. quadrata* **n. sp.**, Brazil, JORDAN, p. 254, t. c.
- Paranthribus* **n. g.** *P. rufescens* **n. sp.**, Bahia, JORDAN, p. 283, t. c.
- Parexillis* **n. g.** *P. lineatus*, p. 284, *variegatus*, p. 285, **n. spp.**, Brazil, JORDAN, t. c.
- Phænithon tibialis*, *longitarsis*, p. 292, *longicornis*, *laevipennis*, p. 293, S. America, *nigritarsis*, Centr. America, *similis*, p. 294, *pictus*, *ruficollis*, p. 295, S. America, JORDAN, t. c.
- Phæochrotus phorcas*, Burma, JORDAN, p. 80, Ann. Mus. Genova xli, **n. sp.**
- Phanosolena* **n. g.** *Tropiderini*, p. 234, *P. nigrotuberculata* **n. sp.**, Texas, p. 235, SCHAEFFER, J. N. York. Ent. Soc. xii.
- Phlæobius lineifer*, p. 240, *striga*, *pachymerus*, p. 241, E. Africa, JORDAN, Nov. Zool. xi; *P. papuanus*, New Guinea, JORDAN, p. 89, Ann. Mus. Genova xl : **n. spp.**
- Physopterus oculatus*, Tonkin, JORDAN, p. 231, Nov. Zool. xi, **n. sp.**
- Piezocorynus brevis*, *plagifer*, *compar*, p. 277, *verrucatus*, *suturalis*, p. 278, *dorsalis*, *homæus*, *alternans*, p. 279, *basalis*, p. 280, S. America, JORDAN, t. c. **n. spp.**
- Piezonemus* **n. g.** near *Piezocorynus*, p. 275, *durus*, *lateralis*, p. 276, **n. spp.**, Brazil, JORDAN, t. c.
- Rawasia gestroi*, Celebes, p. 83, *convexa*, Java, p. 84, JORDAN, Ann. Mus. Genova xli, **n. spp.**
- Scymnopsis* **n. g.** *S. suturalis* **n. sp.**, Bolivia, JORDAN, Nov. Zool. xi.
- Strabops* **n. g.** near *Gymnognathus*, *S. insignis* **n. sp.**, Amazons, JORDAN, p. 253, t. c.
- Sympaector fruhstorferi*, Tonkin, JORDAN, p. 233, t. c. **n. sp.**
- Toxotrypa irroratus*, p. 233, *submetallicus*, p. 234, Texas, SCHAEFFER, J. N. York Ent. Soc. xii, **n. spp.**
- Trachytropis* **n. g.** *T. asper* **n. sp.**, Mexico, JORDAN, p. 266, Nov. Zool. xi.
- Uncifer* **n. g.** near *Gibber*, *U. sticticus* **n. sp.**, Burma, JORDAN, p. 88, Ann. Mus. Genova xli.
- Urodon baudii* = (*granulatus* Schilsky), PIC, p. 218, Bull. Soc. ent. France 1904.
- U. anatolicus*, *rosinæ*, Anatolia, PIC, p. 40, Echange 1904; *U. ciliatus*, Bucharra, *granulatus*, Algeria, *korbi*, Anatolia, SCHILSKY, p. 78, Wien. ent. Zeit. xxiii, **n. spp.**
- Xenocerus lautus*, Tonkin, JORDAN, p. 230, Nov. Zool. xi; *X. suturalis*, Ron isld., JORDAN, p. 89, Ann. Mus. Genova xli, **n. spp.**

CERAMBYCIDÆ.

[Cf. AURIVILLIUS (57, 58), BAECKMANN (74), BROUN (184), CHITTENDEN & WEBSTER (1498), CSIKI (330), DANIEL (345, 347), DAVIS (353), DISTANT (382), FAIRMAIRE (473, 474), FELT & JOUTEL (495b), HAUSER (665), HELLER (673), JORDAN (770), LAMEERE (854, 855), NICOLAS (981), PIC (1063, 1072, 1073), SCHAEFFER (1220).]

- LAMEERE continues his revision of *Prionides*, Ann. Soc. ent. Belgique 1904, 9th part, *Callipogonines*; 10th memoir, *Titanines*, t. c. pp. 310–352.
- A monograph of the S. African *Cerambycidae*, in which all the species are figured has been published by DISTANT (382). The new species and genera are described by GAHAN, who also remarks, in various places, on the classification of *Cerambycidae*, and the wing-nervures of *Prionides* and allies. No attempt has been made by the Recorder to deal with the synonymy of this memoir.
- CSIKI continues his papers on the *Cerambycidae* of Hungary, Rov. Lapok xi, pp. 35 etc.
- In Echange xx PIC advertises Part v of his Matériaux pour servir à l'étude des *Longicornes*. I have not seen this work and do not know whether it is a genuine publication. This was denied in the case of previous parts.
- Agaleptus* **n. g.** for *Closteromerus quadrinotatus* Pér., GAHAN, p. 122, Distant, Ins. Transvaal i.
- Aliturus fuscus*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Anauvesis simplex*, Brit. E. Africa, JORDAN, p. 365, Nov. Zool. xi, **n. sp.**
- Anisogaster brunneus*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Anoplistes jacobsoni*, Syr-Darja, BAECKMANN, p. 312, Rev. Russe Ent. 1904, **n. sp.**
- Artelida caligata*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ataxia spinicauda*, Florida, SCHAEFFER, p. 224, J. N. York Ent. Soc. xii, **n. sp.**
- Bisaltus bimaculatus*, Bolivia, AURIVILLIUS, p. 207, Ent. Tidskr. xxv, **n. sp.**
- Cædomæa bluchævi*, *nebulosa*, p. 259, *griseotincta*, p. 260, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Calanthemis hauseri*, Brit. E. Africa, JORDAN, p. 364, Nov. Zool. xi, **n. sp.**
- Callergates* **subg. n.** of *Ergates* for *E. gaillardoti*, of which *akbesianus* Pic is synonym, LAMEERE, p. 47, Ann. Soc. ent. Belgique xlviii.
- Callipogon (Eoxenus)*, natural history and systematic notes, SEMENOV, pp. 220–224, Rev. Russe Ent. iv.
- C. beckeri*, Mexico, p. 56, *C. (Orthomegas) pehlkei*, Peru, p. 60, *C. (Callomegas) proletarius*, Porto Rico, p. 66, LAMEERE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Callomegas* **subg. n.** of *Callipogon*, p. 64, for *C. sericeus* Ol., and *C.*, sp. n., LAMEERE, t. c.
- Caloclytus krantzi*, Transvaal, GAHAN, pl. xi, fig. 19, p. 123, Distant, Ins. Transvaal. i, **n. sp.**
- Cartallum ebulinum*, natural history, XAMBEU, pp. 45–58, Soc. Pyrenees-or. xlv.
- Ceroplesis millingeni*, Arabia, PIC, Mat. Long. 4 [not seen by Recorder] ? **n. sp.**
- Closteromerus regalis*, Transvaal, DISTANT, pl. xi, fig. 7, p. 121, Ins. Transvaal. i, **n. sp.**
- Clytus rhamnii* var. *n. longicollis*, REITTER, p. 82, Wien. ent. Zeit. xxiii.
- C. fulvohirsutus*, *raddensis*, Siberia, PIC, p. 18, Echange 1904; *C. gulekanus*, Taurus, PIC, p. 65, t. c. : **n. spp.**
- Cochliopselaphus catherina* var. *n. maricovensensis*, DISTANT, p. 141, Ins. Transvaal. i.
- Coptoea* **n. g.** near *Temnopsis*, p. 313, *C. oculata*, *triguttata* **n. spp.**, Africa, p. 314, AURIVILLIUS, Arkiv Zool. i.
- Coptops nivisparsa*, Tonkin, FAIRMAIRE, p. 145, Mission Pavie iii, **n. sp.**
- Cordylomera elegans*, Transvaal, DISTANT, pl. x, fig. 6, p. 115, Ins. Transvaal. i, **n. sp.**

- Crossotus bimaculatus*, E. Africa, AURIVILLIUS, p. 323, Arkiv Zool. i; *C. penicillatus*, Transvaal, GAHAN, p. 146, pl. xiv, fig. 10, Distant, Ins. Transvaal. i; *C. hovanus*, Madagascar, FAIRMAIRE, p. 257, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Ctenoscelis, atra*, larva, HELLER, p. 388, Stettin Ent. Zeit. lxx.
- Cymatura spumans*=(*mashuna* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Cyrtocris n. g. Theocrides*, p. 321, *C. fulvicornis n. sp.*, E. Africa, p. 322, AURIVILLIUS, Arkiv Zool. i.
- Dere nigrita*, Transvaal, GAHAN, pl. xi, fig. 22, p. 124, Distant, Ins. Transvaal. i, **n. sp.**
- Derolus brunneipennis*, Transvaal, GAHAN, pl. x, fig. 5, p. 113, t. c. **n. sp.**
- Desmiphora grisea*, Bolivia, AURIVILLIUS, p. 208, Ent. Tidskr. xxv, **n. sp.**
- Diadelia atomosparsa*, Madagascar, FAIRMAIRE, p. 260, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Diaxenes dendrobii* in N. America, SCHWARZ, p. 21, P. ent. Soc. Washington vi.
- Dityloderus ? balteatus*, E. Africa, AURIVILLIUS, p. 316, Arkiv Zool. i, **n. sp.**
- Dorcadion*; PIC, in Mat. Long. 4, ii, 4, [not seen by Recorder] discusses some synonymies and varr. and describes some new species; *D. neilense* Esc. and allies, characters and variation, NICOLAS, pp. 35-40, Bol. Sol. Aragon. Ci. nat. iii; *D.* varr. from Spain, NICOLAS, pp. 82, 83, Echange xx; *D. cervæ*, a good species, CSIKI, pp. 189, 199, Rov. Lapok xi.
- D. granulorum*, Spain, PIC, p. 17, Echange 1904; *D. elvire*, Spain, PIC, p. 58, t. c.: **n. spp.**
- Drymochares truquii*, habits, GUERRY, pp. 157-159, Bull. Soc. ent. France 1904.
- Dysphaga tenuipes*, metamorphosis and parasites, GIRAULT, pp. 299, 300, Ent. News Philad. xv.
- Elaphidion* and *Psyrassa*, characters and components, SCHAEFFER, p. 61, J. N. York Ent. Soc. xii.
- E. subdepressum*, Lower California, SCHAEFFER, p. 222, t. c. **n. sp.**
- Enaretta exigua*, Transvaal, GAHAN, p. 152, pl. xv, fig. 7, Distant, Ins. Transvaal. i, **n. sp.**
- Erlandia n. g.* near *Dynamostes*, p. 205, *E. inopinata n. sp.*, Bolivia, p. 206, AURIVILLIUS, Ent. Tidskr. xxv.
- Eugoides n. g.* near *Eugoa*, p. 314, *E. cæruleipennis n. sp.*, E. Africa, p. 315, AURIVILLIUS, Arkiv Zool. i.
- Eunidia plagiata*, pl. xiv, fig. 24, p. 149, *aspersa*, fig. 25, *spilota*, fig. 21, *modesta*, fig. 22, p. 150, *euzonata*, fig. 19, *fasciata*, fig. 20, p. 151, Transvaal, GAHAN, Distant Ins. Transvaal. i, **n. spp.**
- Exocentrus lateralis*, pl. xv, fig. 11, p. 155, *echinulus*, fig. 12, *exiguus*, fig. 14, *inermis*, fig. 13, p. 156, Transvaal, GAHAN, t. c. **n. spp.**
- Frea reticulata*, S. Africa, DISTANT, p. 144, pl. xiv, fig. 4, Ins. Transvaal. i, **n. sp.**
- Glenea pygidialis*, E. Africa, *sangirica*, Sanghir, p. 324, *palavensis*, p. 325, *bivittata*, Palawan, *didyma*, Java, p. 326, *glaucescens*, Celebes, *ruficauda*, Sumbava, *bisbivittata*, Java, p. 327, *nigriceps*, Malacca, p. 328, AURIVILLIUS, Arkiv Zool. i, **n. spp.**
- Hecyrida plagicollis*, Transvaal, GAHAN, p. 147, pl. xv, fig. 5, Distant, Ins. Transvaal. i, **n. sp.**
- Hercodera pulchella*, Transvaal, GAHAN, pl. x, fig. 24, p. 115, t. c. **n. sp.**
- Hesperophanes griseus*, longevity, larval habits, KÜNCKEL, p. 68, Bull. Soc. ent. France 1904.
- Hoplorama perrieri*, Madagascar, FAIRMAIRE, p. 258, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Hypocrites aureovittatus*, E. Africa, AURIVILLIUS, p. 316, Arkiv Zool. i, **n. sp.**

- Icariotis alboscultata*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Idactus fasciculosus*, E. Africa, AURIVILLIUS, p. 318, Arkiv Zool. i, **n. sp.**
- Lentalius* **n. g.** near *Lasiocercis*, p. 256, *L. obliquepictus* **n. sp.**, Madagascar, p. 257, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii.
- Leptura verticalis* and allies to **n. subg. Sphenalia**, p. 355, synonymy and varr., K. DANIEL, pp. 355–371, Munchen. Kol. Zeitschr. ii; *L. distigma* var. *n. lopezbayoi*, LAUFFER, p. 374, Bol. Soc. espan. iv; *L. rubra*, hermaphrodite, BICKHARDT, p. 303, Deutsche ent. Zeitschr. 1904.
- L. (Sphenalia) ariadne*, Crete, p. 355, *erinnys*, Asia Minor, p. 356, K. DANIEL, Munchen. Kol. Zeitschr. ii, **n. spp.**
- Lygrus testaceus*, Transvaal, GAHAN, p. 109, pl. x, fig. 9, Distant, Ins. Transvaal. i, **n. sp.**
- Lyranela* **n. g.** near *Lygrus*, p. 109, *L. sulcipennis* **n. sp.**, Transvaal, pl. x, fig. 22, p. 110, GAHAN, t. c.
- Mallodon spinibarbis*, larva, HELLER, p. 391, Stettin Ent. Zeit. lxxv.
- Mallosia*; revision with varr. **n.** and subg. **n.** (cf. *Semnosia*), K. DANIEL, pp. 301–314, Munchen. Kol. Zeitschr. ii.
- Marocaulus granicollis*, Madagascar, FAIRMAIRE, p. 254, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Mimococtopus bipenicillatus*, Madagascar, FAIRMAIRE, p. 256, t. c. **n. sp.**
- Myrsinus* **n. g.** *Aphanasiides*, *M. modestus* **n. sp.**, Transvaal, pl. x, fig. 21, p. 116, GAHAN, Distant, Ins. Transvaal. i.
- Nemophas helleri*, Key islds., HAUSER, p. 42, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Neoclytus jouteli*, New Jersey, DAVIS, p. 34, pl. vi, Ent. News Philad. xv; *N. magnus*, Lower California, SCHAEFFER, p. 224, J. N. York Ent. Soc. xii : **n. sp.**
- Neopolyarthron* is subg. of *Prionus*; *P. angustatus* Jak. = (*ahngeri* Brancs.), SEMENOW, p. 39, Rev. Russe Ent. iv.
- Nicarete albolineatus*, p. 257, *vitticollis*, *submaculosus*, p. 258, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Niphoparmena* **n. g.** near *Mycerinos*, p. 317, *N. bispinosa* **n. sp.**, E. Africa, p. 318, AURIVILLIUS, Arkiv Zool. i.
- Oberea rosine*, Amurland, PIC, p. 17, Echange 1904 : *O. ulmicola*, Illinois, CHITTENDEN, p. 4, habits and metamorphosis, WEBSTER, pp. 5–13, pls. i, ii, Bull. Illinois Lab. vii : **n. spp.**
- Obrium obscuripenne*, Amurland, PIC, p. 17, Echange 1904 : *O. brunneum*, Lower California, SCHAEFFER, p. 223, J. N. York Ent. Soc. xii : **n. spp.**
- Oemida* **n. g.** for *Paræme gahani* Dist., GAHAN, p. 106, Distant, Ins. Transvaal. i.
- Oemodana* **n. g.** *O. quadrinotata* **n. sp.**, Lydenburg, GAHAN, p. 107, pl. xiii, fig. 5, t. c.
- Olenecamptus nubilus*, Brit. E. Africa, JORDAN, p. 365, Nov. Zool. xi; *O. olenus*, Transvaal, GAHAN, p. 143, pl. xiv, fig. 1, Distant, Ins. Transvaal. i : **n. spp.**
- Omphalacra* merged in *Nicarete*, FAIRMAIRE, p. 258, Ann. Soc. ent. Belgique xlviii.
- Oncideres stillata*, Bolivia, AURIVILLIUS, p. 208, Ent. Tidskr. xxv, **n. sp.**
- Oncideres dejeani*, larva, HELLER, p. 395, Stettin Ent. Zeit. lxxv.
- Pachydissus pauper*, Transvaal, GAHAN, pl. x, fig. 8, p. 113, Distant, Ins. Transvaal. i, **n. sp.**
- Parandra glabra*, larva, HELLER, p. 383, Stettin Ent. Zeit. lxxv.
- Parmena balteus*, variation, MÜLLER, p. 176, Wien. ent. Zeit. xxiii.
- Pentanodes* **n. g.** near *Tetranodes*, *P. dietzii* **n. sp.**, Texas, SCHAEFFER, p. 222, J. N. York Ent. Soc. xii.
- Peritragus* **n. g.** near *Tragiscoschema*, p. 320, *P. nigroapicalis* **n. sp.**, E. Africa, p. 321, AURIVILLIUS, Arkiv Zool. i.

- Phantasis mystica*, Transvaal, DISTANT, p. 127, pl. xi, fig. 13, Ins. Transvaal. i, **n. sp.**
- Philematium hottentotum* = (*capense* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Phytoecia infernalis*, Amurland, PIC, p. 17, Echange 1904, **n. sp.**
- Pogonocherus taygetanus*, Greece, PIC, Mat. Long. iv [not seen by Recorder], **? n. sp.**
- Polyzoa lucordairei*, larva, HELLER, p. 392, Stettin Ent. Zeit. lxx.
- Praonetha fuscopunctata*, p. 260, *bispina*, p. 261, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Prosopocera ertli*, E. Africa, AURIVILLIUS, p. 319, Arkiv Zool. i, **n. sp.**
- Protocallidium* subg. n. for *Callidium angustum*, CSIKI, p. 99, Rov. Lapok xi.
- Psathyrus suturalis*, Transvaal, GAHAN, p. 107, pl. xiii, fig. 1, Distant, Ins. Transvaal. i, **n. sp.**
- Purpuricenus miniatus*, Tonkin, FAIRMAIRE, p. 145, Mission Pavie iii, **n. sp.**
- Saperda*; monograph of N. American, with illustr. of larval work and of the insects, *S. populnea tulari* subsp. n. p. 70, pl. vii, fig. 6, FELT & JOUTEL, Bull. N. York Mus. lxxiv.
- S. imitans*, Montreal and Massachusetts; FELT & JOUTEL, p. 58, pl. iii, fig. 4, t. c. **n. sp.**
- Semnosia* subg. n. of *Mallosia* for *M. scoritzi*, K. DANIEL, p. 301, Munchen. Kol. Zeitschr. ii.
- Somatidia testudo*, New Zealand, BROUN, p. 127, Ann. Nat. Hist. xiv, **n. sp.**
- Sophronica fulvicollis*, Transvaal, GAHAN, p. 154, pl. xv, fig. 15, Distant, Ins. Transvaal. i, **n. sp.**
- Sphenalia* subg. n., cf. *Leptura*.
- Stenocorus heterocerus* var. n. *homocerus*, DANIEL, p. 206, Munchen. Kol. Zeitschr. ii.
- Sternotomis carbonaria*, Africa, AURIVILLIUS, p. 320, Arkiv Zool. i: *S. euchroma*, Madagascar, FAIRMAIRE, p. 255, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Tapinolachnus aurivillianus*, Transvaal, DISTANT, pl. ix, fig. 15, p. 112, Ins. Transvaal. i, **n. sp.**
- Timoreticus imbellis*, Transvaal, GAHAN, pl. xii, fig. i, p. 132, t. c. **n. sp.**
- Toxotes pascoei*, Queensland, p. 21, LAMEERE, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tragocephala gemina*, Transvaal, DISTANT, pl. xii, fig. 13, p. 136, Ins. Transvaal. i, **n. sp.**
- Xixuthrus lineicollis*, larva, and pupa, HELLER, p. 401, Stettin Ent. Zeit. lxx.
- Xylotrechus quadrupes*, habits, ravages in Tonkin, BOUTAN, C.R. Soc. Biol. cxxxix, pp. 932-934; *X. adpersus* and *pantherinus*, distinguished, SEMENOW, p. 315, Rev. Russe Ent. 1904.
- Zamium incultum* = (*rusticum* Pér.), PÉRINGUEY, p. 297, Ann. S. African Mus. iii.
- Z. lævicolle*, Brit. E. Africa, JORDAN, p. 364, Nov. Zool. xi, **n. sp.**

BRUCHIDÆ.

[Cf. DANIEL & DANIEL (349), PIC (1069), SCHAEFFER (1220).]

- Bruchus*; synonymical notes, European, SCHILSKY, p. 455, *B. bipustulatus* F. redescribed, Deutsche ent. Zeitschr. 1904.
- B. soarezius*, Madagascar, PIC, p. 35, Echange 1904; *B. arizonensis*, p. 229, *gibbithorax*, p. 230, Arizona, *texasus*, Brownsville, p. 231, SCHAEFFER, J. N. York Ent. Soc. xii: **n. spp.**
- Caryoborus pallidus*, food, BARGAGLI, p. 3, Bull. Soc. ent. Ital. xxxvi.
- Laria stylophora*, Constantinople, K. DANIEL, p. 87, Munchen. Kol.

Zeitschr. ii; *L. mellyi*, Egypt, *monstrosicornis*, Anatolia, PIC, p. 40, Echange 1904; *L. tonkinea*, Tonkin, PIC, p. 42, Echange xx: **n. spp.**
Spermophagus eustrophoides, Florida, SCHAEFFER, p. 228, J. N. York Ent. Soc. xii, **n. sp.**

CHRYSOMELIDÆ [except *Hispides* and *Cassidides*].

[Cf. ABAILLE (5), DANIEL (343, 349), FAIRMAIRE (473), JACOBY (742-749), JACOBY & CLAVAREAU (750), LEA (863, 864), PIC (1064, 1072, 1077), REITTER (1147), SCHAEFFER (1220), SEMENOW (1281), WEISE (1502, 1503, 1505).]

The genera and species of *Donaciidae*, JACOBY & CLAVAREAU, in Wytsman Gen. Ins. fasc. xxi.

The genera of *Crioceride*, with lists of species, JACOBY & CLAVAREAU, *Crioceride*, Wytsman Gen. Ins. fasc. xxiii, 40 pp., 5 pls.

Revision of Australian *Cryptocephalides*, and tabulation of the species. We have not dealt in any way with the synonymy in this memoir. LEA, Tr. ent. Soc. London 1904, pp. 329-461, pls. xxii-xxvi.

Acanthonycha peruana, *geniculata*, *dimidiata*, Peru, p. 403, *stali*, Costa Rica, *costatipennis*, p. 404, *antennata*, p. 405, Brazil, JACOBY, P. Z. S. 1904, ii, **n. spp.**

Achænops oneili, Cape Colony, JACOBY, p. 249, op. cit. i, **n. sp.**

Ænidea hauseri = (*Platyvantha clavareavi* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.

Æ. nasuta, p. 401, *latifrons*, p. 402, *nilgiriensis*, p. 403, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Agasicles **n. g.** *Halticineæ*, p. 400, *A. vittata* **n. sp.**, Peru, p. 401, JACOBY, P. Z. S. 1904, ii.

Agetocera flava, Khasia hills, JACOBY, p. 394, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Algoala **n. g.** near *Melasoma*, *A. fulvicollis* **n. sp.**, S. Africa, JACOBY, p. 268, P. Z. S. 1904, i.

Antipha bifasciata, p. 399, *orientalis*, p. 400, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**

Aphthona nigroscutellata, Galicia, REITTER, p. 82, Wien. ent. Zeit. xxiii; *A. bicolorata*, New Guinea, JACOBY, p. 487, Ann. Mus. Genova xli: **n. sp.**

Apolepis indica, Nilgiri hills, JACOBY, p. 385, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Apophyllia (*Malaxia*) *metallica*, India, JACOBY, p. 397, t. c. **n. sp.**

Argopistes limbaticornis, New Guinea, JACOBY, p. 491, Ann. Mus. Genova xli, **n. sp.**

Atropidius robustus, India, JACOBY, p. 383, Ann. Soc. ent. Belgique xlviii, **n. sp.**

Aulacophora loriana, p. 494, *pallidifasciata*, *riegoensis*, p. 495, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**

Blepharida flavocostata, p. 406, *multimaculata*, p. 407, Mexico, JACOBY, P. Z. S. 1904, ii, **n. spp.**

Brachycybalus posticalis, p. 446, *mamillatus*, *aterrimus*, p. 447, Australia, LEA, Tr. ent. Soc. London 1904, **n. spp.**

Bradamina **n. g.** *Monoleptides*, *B. plicicollis* **n. sp.**, Madagascar, FAIRMAIRE, p. 268, Ann. Soc. ent. Belgique xlviii.

Bradylema transvaalensis, ♂, WEISE, p. 157, Arch. Naturg. lxx, i.

Buphonella murina Gerst. (as *Apophyllia*) = (*elongata* Jac.), WEISE, p. 166, t. c.

Cadmus *T-niger*, p. 449, *calomeloides*, p. 450, *quadrifasciatus*, p. 451, *fasciaticollis*, p. 452, *apicirufus*, p. 453, *perlatus*, *nothus*, p. 454, Australia or Tasmania, LEA, Tr. ent. Soc. London 1904, **n. spp.**

- Calomela dilaticornis*, New Guinea, JACOBY, p. 480, Ann. Mus. Genova xli, **n. sp.**
- Candezea lorice*, p. 508, *sulcatipennis*, p. 509, New Guinea, JACOBY, t. c. **n. spp.**
- Casmeneella* **n. g.** *Heteraspineæ*, *C. natalense* **n. sp.**, Natal, JACOBY, p. 266, P. Z. S. 1904, i.
- Cerophysa andrewesi*, p. 396, *mundarensis*, p. 397, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Chaetocnema belli*, India, JACOBY, p. 392, t. c.; *C. lorice*, p. 489, *transversicollis*, p. 490, New Guinea, JACOBY, Ann. Mus. Genova xli : **n. spp.**
- Chalcolampra rufinoda*, Tasmania, LEA, p. 106, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Cheiridella* **n. g.** *Eumolpidæ*, p. 265, *C. zambesiana* **n. sp.**, Natal, p. 266, JACOBY, P. Z. S. 1904, i.
- Chlamys semicristata*, Venezuela, *balyi*, Mexico, JACOBY, p. 293, Entomologist 1904; *C. trimaculata*, p. 197, *donckieri*, *seminigra*, p. 198, *semibrunnea*, p. 199, Brazil, *fulvinana*, Costa Rica, *surinamensis*, Surinam, p. 200, *centromaculata*, Brazil, p. 201, *constrictipennis*, Peru, p. 202, JACOBY, t. c. : **n. spp.**
- Chrysochloa tristis*, *rugulosa*, *collucens*, *fenestrellana*, relations, WEISE & DANIEL, pp. 234-237, Munchen. Kol. Zeitschr. ii.
- Cleoporus variegatus*, p. 387, *maculicollis*, p. 388, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Cleorina semipurpurea*, p. 473, *viridissima*, p. 474, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Cænobius melanocephalus*, Mashonaland, JACOBY, p. 248, P. Z. S. 1904, i, **n. sp.**
- Colasposoma cyaneocupreum* = (*junodi* Pér.), JACOBY, p. 262, t. c.
- C. sheppardi*, p. 258, *pusillum*, p. 259, *piceitarse*, p. 260, *balyi*, *beiraense*, pl. xvii, fig. 10, p. 261, *mirabile*, p. 262, Africa, JACOBY, t. c. **n. spp.**
- Coptocephala rubicunda* var. *n. fuentei*, FIGUEROA, p. 374, Bol. Soc. espan. iv.
- Corynodes plagiatas*, Nyassa, WEISE, p. 162, Arch. Naturg. lxx, i, **n. sp.**
- C. clypeatus*, India, JACOBY, p. 389, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Crepidodera*, revision of Palæarctic, with synonymy and varr. n., remarks on Japanese, J. DANIEL, pp. 237-297, Munchen. Kol. Zeitschr. ii; *C. femorata* var. *n. kossmanni*, GERHARDT, p. 78, Zeitschr. Ent. Breslau xxix.
- C. sabauda*, Savoy, PIC, p. 57, Echange xx; *C. brevicollis*, Italy, p. 249, *nobilis*, Alps, p. 281, J. DANIEL, Munchen. Kol. Zeitschr. ii; *C. longicornis*, Peru, JACOBY, p. 412, P. Z. S. 1904, ii : **n. spp.**
- Crioceris fasciata*, E. Africa, WEISE, p. 158, Arch. Naturg. lxx, i, **n. sp.**
- C. discoidalis*, *dilutipes*, *fusco-picta*, p. 262, *semirufa*, p. 263, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *C. fasciatipennis*, *mala-barica*, India, JACOBY, p. 381, t. c. : **n. spp.**
- Cryptocephalus vittula* var. *n. lugubris*, DEMAISON, p. 286, Bull. Soc. ent. France 1904; *C. raddei rosinae* subsp. n., PIC, p. 27, Echange 1904; *C. smaragdulus* F. = (*aggregatus* Jac.), *C. oblongosignatus* var. = (*severini* Jac.), WEISE, p. 16, Deutsche ent. Zeitschr. 1904; *C. polyhistor* = (*mandibularis* Suffr. and *Achænopis mandibularis* Jac.), JACOBY, p. 247, P. Z. S. 1904, i.
- C. championi*, Spain, J. DANIEL, p. 92, Munchen. Kol. Zeitschr. ii; *C. centralis*, p. 159, *reinecki*, Natal, *moseri*, Usambara, p. 160, WEISE, Arch. Naturg. lxx, i; *C. sheppardi*, pl. xvii, fig. 6, p. 242, *oneili*, fig. 7, *subconnectens*, fig. 3, p. 243, *sobrinus*, *beiraensis*, fig. 5, p. 244, *capensis*, p. 245, *semiregularis*, *sexplagiatus*, fig. 4, p. 246, *flavofrontalis*, p. 247, Africa, JACOBY, P. Z. S. 1904, i; *C. nigrosparus*, *nigrotibialis*, p. 264, *impressidorsis*, *multinotatus*, *anticus*, p. 265, *piceorufus*, *scripticollis*,

- anthrax*, *laesicollis*, p. 266, *diversipes*, *cyaneocostatus*, *nedator*, p. 267, *eucharis*, p. 268, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii : *C. subcostatus*, India, JACOBY, p. 382, Ann. Soc. ent. Belgique xlviii ; *C. confinis*, *mediocris*, p. 392, *appendiculatus*, p. 393, *vicarius*, p. 394, *blandus*, p. 395, *quadratipennis*, p. 396, *compositus*, p. 397, *aurifer*, *purpureotinctus*, p. 398, *clarus*, p. 399, *melanopus*, p. 400, *variipennis*, p. 401, *clypealis*, p. 402, *rubicundus*, *rutilans*, p. 403, *larinus*, p. 404, *cariniventris*, p. 405, *stenocerus*, p. 406, *sobrinus*, p. 407, *pallens*, p. 408, *liliputanus* (Tasmania), p. 409, *tenebricosus*, *distortus*, p. 410, *rufoterminalis*, p. 412, *conspiciendus*, p. 413, *metallicus*, *basizonus*, p. 414, *comptus*, p. 415, *minusculus*, p. 416, *T-viridis*, p. 417, *serenus*, p. 418, *scabiosus*, p. 419, *incoctus*, p. 420, *comosus*, *convexicollis*, p. 421, *ornatipennis*, p. 422, *cælestis*, p. 423, *costipennis*, p. 424, Australia, LEA, Tr. ent. Soc. London 1904 ; *C. arizonensis*, Pinal Mts., p. 225, *brunneovittatus*, p. 226, Texas, SCHAEFFER, J. N. York Ent. Soc. xii : **n. spp.**
- Cynorta nigrobasis*, India, JACOBY, p. 400, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Damia tibialis*, E. Africa, WEISE, p. 158, Arch. Naturg. lxx, i ; *D. strigatipes*, p. 239, *trifasciata*, pl. xvii, fig. 9, p. 240, Africa, JACOBY, P. Z. S. 1904, i : **n. spp.**
- Demotina andrewesi*, p. 383, *fulvohirsuta*, p. 384, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Desmogramma nigripes*, S. America, JACOBY, p. 517, Arkiv Zool. i, **n. sp.**
- Diabrotica nordenskioldi*, Argentina, JACOBY, p. 521, t. c. **n. sp.**
- Diacantha kolbei*=(*conradti* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i ; *D. bimaculata* to *Agelastica*, WEISE, p. 166, t. c.
- Diandichus foveiventris*, W. Australia, LEA, p. 425, Tr. ent. Soc. London 1904, **n. sp.**
- Dioryctus latus*, China, WEISE, p. 161, Arch. Naturg. lxx, p. 161, **n. sp.**
- Disonychia amazonica*, Amazons, p. 401, *peruana*, *albicincta*, p. 402, Peru, JACOBY, P. Z. S. 1904, ii, **n. spp.**
- Donacia microcephala*, Asia Minor, J. DANIEL, p. 89, Munchen. Kol. Zeitschr. ii, **n. sp.**
- Echtrusia cupensis*, Cape Colony, JACOBY, p. 264, P. Z. S. 1904, i, **n. sp.**
- Epitrix æneicollis*, Argentina, JACOBY, p. 519, Arkiv Zool. i, **n. sp.**
- Eubrachys oneili*, S. Africa, JACOBY, p. 263, P. Z. S. 1904, i, **n. sp.**
- Eumæa interrupta*, New Guinea, JACOBY, p. 510, Ann. Mus. Genova xli, **n. sp.**
- Euphitrea indica*, Nilgiri hills, JACOBY, p. 391, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Eurydemus marginatus* Jac. 1903, cf. id. 1900, WEISE, p. 167, Arch. Naturg. lxx, i.
- Eurydemus nigriceps*, p. 249, *quadrifasciatus*, *geniculatus*, pl. xvii, fig. 12, p. 250, Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Euryope barkeri*, Natal, JACOBY, p. 258, t. c. **n. sp.**
- Exosoma flavomarginatum* Jac. = (*Hallirhotius marginatus* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Fidia clematis*, Texas, SCHAEFFER, p. 227, J. N. York Ent. Soc. xii, **n. sp.**
- Galeruca dorsata* Say, DURY, p. 53, Ent. News Philad. xv.
- G. sexcostata*, Kashmir, JACOBY, p. 405, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Galerucella luteola*, metamorphosis, REVON, p. 261, Naturaliste 1904.
- G. interrupta*, Mendoza, JACOBY, p. 523, Arkiv Zool. i, **n. sp.**
- Gronovius* **n. g.** *G. imperialis*, p. 499, *andaiensis*, p. 500, **n. spp.**, New Guinea, JACOBY, Ann. Mus. Genova xli.
- Gynandrophthalma ochropus* Har. = (*Ætheomorpha cærulea* Jac.), WEISE, p. 159, Arch. Naturg. lxx, i.

- G. salisburyensis*, p. 240, *varicolor*, p. 241, *hirtifrons*, p. 242, S. Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Haltica bicolora*, New Guinea, JACOBY, p. 482, Ann. Mus. Genova xli ; *H. boliviana*, S. America, JACOBY, p. 517, Arkiv Zool. i : **n. spp.**
- Haplosoma nilgiriensis*, India, JACOBY, p. 396, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Haptoscelis melanocephala* var. *n. baltica*, GERHARDT, p. 368, Deutsche ent. Zeitschr. 1904.
- Hermesia varicolor*, Argentina, JACOBY, p. 514, Arkiv Zool. i, **n. sp.**
- Hippuriphila catharinæ*, Brazil, JACOBY, p. 412, P. Z. S. 1904, ii, **n. sp.**
- Horatopyga reinecki*, Natal, WEISE, p. 163, Arch. Naturg. lxx, i, **n. sp.**
- Hyperaxis variegata*, India, JACOBY, p. 385, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Isnus suturalis*, Natal, JACOBY, p. 248, P. Z. S. 1904, i, **n. sp.**
- Itylus n. g.* for *Yulenia bicolor*, JACOBY, p. 497, Ann. Mus. Genova xli.
- Jacobyia viridis*, Niger, WEISE, p. 167, Arch. Naturg. lxx, i, **n. sp.**
- Khasia andrewezi*, India, JACOBY, p. 398, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Labidostomis (Chlorostola) nevadensis*, Spain, J. DANIEL, p. 91, Munchen. Kol. Zeitschr. ii ; *L. testaceipes*, p. 93, *delagrangei*, p. 94, Syria, PIC, Echange xx : **n. spp.**
- Lactica nicotinæ*, Mexico, p. 396, *decorata*, p. 397, *maculicollis*, *posticata*, p. 398, *discicollis*, *rufobrunnea*, *baeri*, p. 399, *argentinensis*, Tucuman, p. 400, JACOBY, P. Z. S. 1904, ii, **n. spp.**
- Lefevrea fulvicollis*, Natal, JACOBY, p. 263, P. Z. S. 1904, i, **n. sp.**
- Lema weisei*, p. 230, *malvernensis*, *gerstaeckeri*, p. 231, *graminis*, *nigro-frontalis*, p. 232, *æthiopica*, p. 233, pl. xvii, fig. 1, *humeronotata*, fig. 2, p. 234, *hirtipennis*, p. 235, Africa, JACOBY, t. c. ; *L. crispatifrons*, Madagascar, FAIRMAIRE p. 262, Ann. Soc. ent. Belgique xlviii ; *L. paradoxa*, Pondicherry, JACOBY, p. 380, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Liniscus interstitialis*, Beira, JACOBY, p. 254, P. Z. S. 1904, i, **n. sp.**
- Lochmæa tropica* redescribed, JACOBY, p. 522, Arkiv Zool. i.
- Longitarsus kanaraensis*, p. 389, *fulvobrunneus*, p. 390, India, JACOBY, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Loxopleurus lateriflavus*, p. 430, *pallidipes*, *lugubris*, p. 431, *mixtus*, p. 433, *acentetus*, p. 434, *castor*, *pollux*, p. 435, *mitificus*, *dolens*, p. 436, *microscopicus*, p. 437, *marginipennis*, p. 438, *castigatus*, p. 439, *inconstans*, p. 440, *virgatus*, *fuscitarsis*, p. 441, *contiguus*, p. 442, *absonus*, p. 443, *immaturus*, 444, *disconiger*, p. 445, Australia or Tasmania, LEA, Tr. ent. Soc. London 1904, **n. spp.**
- Luperodes obesa*, India, JACOBY, p. 398, Ann. Soc. ent. Belgique xlviii ; *L. lateralis*, Solomon Islands, JACOBY, p. 296, Entomologist 1904 : **n. spp.**
- Luperus loræ*, *papuanus*, New Guinea, JACOBY, p. 505, Ann. Mus. Genova xli, **n. spp.**
- Macetes rugicollis*, *pusilla*, Natal, JACOBY, p. 257, P. Z. S. 1904, i, **n. spp.**
- Macrolopha* ; constituents, JACOBY, p. 235, t. c.
- Malacodora n. n.* for *Malacosoma* Chevr., BEDEL, p. 236, Abeille xxx.
- Malegia caffer*, Caffraria, PIC, p. 20, Echange 1904 ; *M. pallidipes*, Madagascar, p. 35, *donckieri*, Arabia, p. 36, PIC, t. c. : **n. spp.**
- Mastostethus nigrovarians*, *funereus*, p. 63, *femoratus*, *erichsoni*, p. 64, *lacordairei*, *argentinensis*, p. 65, *nigricollis*, *balyi*, p. 66, *bolivianus*, *quadriplagiatus*, p. 67, S. America, JACOBY, Entomologist 1904, **n. spp.**
- Megalognatha usambarica*, *simplex*, p. 168, *apicalis*, p. 169, Africa, WIESE, Arch. Naturg. lxx, i, **n. spp.**
- Melasoma salicivora* varr. *n. completa*, *decolorata*, JACOBSON, p. xv, Annuaire

- Mus. St. Petersb.* viii; *M. spinata, discoidalis, unicolor*, validity queried, WEISE, p. 164, *Arch. Naturg.* lxx, i.
- Menius brevicornis*, pl. xvii, fig. 11, Beira, JACOBY, p. 251, *P. Z. S.* 1904, i, **n. sp.**
- Mimastra suturalis, scutellata*, India, JACOBY, p. 395, *Ann. Soc. ent. Belgique* xlviii, **n. spp.**
- Miopristis braunsi*, p. 235, *oneili*, pl. xvii, fig. 8, *zambesiana*, p. 236, *brevitarsis*, p. 237, Africa, JACOBY, *P. Z. S.* 1904, i, **n. spp.**
- Monolepta nilgiriensis*, p. 403, *duvivieri, nigrimana*, p. 404, *bimaculicollis*, p. 405, India, JACOBY, *Ann. Soc. ent. Belgique* xlviii; *M. bicoloripes*, p. 506, *hieroglyphica*, p. 507, *boisduvali*, New Guinea, p. 508, JACOBY, *Ann. Mus. Genova* xli : **n. spp.**
- Morokasia n. g. M. nigromaculata n. sp.*, New Guinea, JACOBY, p. 498, *Ann. Mus. Genova* xli.
- Mouhotina salomonensis*, Solomon Islands, JACOBY, p. 295, *Entomologist* 1904, **n. sp.**
- Myochrous magnus*, Texas, SCHAEFFER, p. 228, *J. N. York Ent. Soc.* xii, **n. sp.**
- Nerissella n. g. Pseudocolaspinae, N. curculionoides n. sp.*, Zambesi, JACOBY, p. 267, *P. Z. S.* 1904, i.
- Nodonota argentinensis*, Quinta, JACOBY, p. 515, *Arkiv Zool.* i, **n. sp.**
- Nodostoma camerunense*, Africa, JACOBY, p. 253, *P. Z. S.* 1904, i; *N. fulvicorne*, India, JACOBY, p. 387, *Ann. Soc. ent. Belgique* xlviii; *N. minutum*, New Guinea, JACOBY, p. 473, *Ann. Mus. Genova* xli : **n. spp.**
- Nyctiphantus bergi*, Lake Balkash, SEMENOW, p. 194, *Horæ Soc. ent. Ross.* xxxvii, **n. sp.**
- Oides straminea*, Cameroons, WEISE, p. 166, *Arch. Naturg.* lxx, i; *O. kanaraensis*, India, JACOBY, p. 393, *Ann. Soc. ent. Belgique* xlviii; *O. apicipennis*, p. 492, *loriæ*, p. 493, New Guinea, JACOBY, *Ann. Mus. Genova* xli : **n. spp.**
- Oxygona amazonica*, Amazons, *capitata*, Peru, JACOBY, p. 411, *P. Z. S.* 1904, ii, **n. spp.**
- Pachybrachis rugifer*, France, ABEILLE, p. 281, *Bull. Soc. ent. France* 1904, **n. sp.**
- Panilurus n. g. near Arsipoda*, p. 392, *P. nilgiriensis n. sp.*, India, p. 393, JACOBY, *Ann. Soc. ent. Belgique* xlviii.
- Paumomua n. g. Atysites, P. sulcicollis n. sp.*, New Guinea, p. 513, JACOBY, *Ann. Mus. Genova* xli.
- Pausiris oneili, longicollis, femoralis*, p. 255, *semirugosus*, p. 256, S. Africa, JACOBY, *P. Z. S.* 1904, i, **n. spp.**
- Phaulosis n. g. near Timarcha*, p. 162, *P. æneipennis n. sp.*, Cape Good Hope, p. 163, WEISE, *Arch. Naturg.* lxxi.
- Phygasia nigripennis*, India, JACOBY, p. 391, *Ann. Soc. ent. Belgique* xlviii, **n. sp.**
- Phyllobroticella straminea* = (*simplicipennis* Jac.), WEISE, p. 167, *Arch. Naturg.* lxx, i.
- Phyllotreta ruficeps, costulata*, Africa, WEISE, p. 170, t. c. **n. spp.**
- Plagioderia subparallela*, Cameroons, WEISE, p. 164, t. c. **n. sp.**
- Platymela fulvoplagiata*, New Guinea, JACOBY, p. 479, *Ann. Mus. Genova* xli, **n. sp.**
- Prasona peruviana*, Marcapata, JACOBY, p. 407, *P. Z. S.* 1904, ii, **n. sp.**
- Prosmidia amæna*, Rhodesia, *magna*, E. Africa, WEISE, p. 165, *Arch. Naturg.* lxx, i, **n. spp.**
- Pseudivongius apicicornis*, Natal, JACOBY, p. 253, *P. Z. S.* 1904, i, **n. sp.**
- Pseudocolaspis substriata*, Mesopotamia, WEISE, p. 100, *Deutsche ent. Zeitschr.* 1904, **n. sp.**
- Pseudogona argentinensis*, Argentina, JACOBY, p. 520, *Arkiv Zool.* i; *P.*

- discoidalis*, Argentina, p. 409, *militaris*, Panama, *pallida*, Costa Rica, p. 410, JACOBY, P. Z. S. 1904, ii : **n. spp.**
- Pseudosastra* **n. g.** for *Sastra sulcicollis* Jac., JACOBY, p. 504, Ann. Mus. Genova xli.
- Psylliodes loræ*, New Guinea, JACOBY, p. 488, t. c. **n. sp.**
- Rhembastus insignitus* to *Syagrus*, JACOBY, p. 253, P. Z. S. 1904, i.
- Rhyparida obscuripennis*, p. 469, *papuana*, p. 470, *humeronotata*, p. 471, *rivularis*, p. 472, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Sagra humeralis*, Tonkin, JACOBY, p. 294, Entomologist 1905, **n. sp.**
- Sastra quadripustulata*, p. 501, *rugicollis*, p. 502, Trobriand Islands, *olivacea*, Fergusson Island, *abdominalis*, N. Guinea, p. 503, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Scelodonta rugipennis*, p. 264, *lefevrei*, p. 266, S. Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Schizosternus delicatulus*, p. 426, *trilineatus*, *marmoratus*, p. 427, Australia, LEA, Tr. ent. Soc. London 1904, **n. spp.**
- Sclerophædon orbicularis* Suffr., larva, WEISE, pp. 47, 48, Deutsche ent. Zeitschr. 1904.
- Sebaethe pullidicincta*, India, JACOBY, p. 391, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Solenia femorata*, *papuana*, p. 511, *intermedia*, p. 512, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Sophrænella* **n. g.** p. 405, *S. fulva* **n. sp.**, Amazons, p. 406, JACOBY, P. Z. S. 1904, ii.
- Sphæroderma subimpressa*, New Guinea, JACOBY, p. 491, Ann. Mus. Genova xli, **n. sp.**
- Stethotes loræ*, p. 475, *integra*, *minuta*, p. 476, New Guinea, JACOBY, t. c. **n. spp.**
- Stigmomela* **n. n.** for *Stictomela* Weise, CSIKI, p. 85, Wien. ent. Zeit. xxiii.
- Sutrea triplagiata*, p. 484, *semirugosa*, p. 485, *marginipennis*, p. 486, *levipennis*, p. 487, New Guinea, JACOBY, Ann. Mus. Genova xli, **n. spp.**
- Syagrus fulvimanus*, p. 251, *tristis*, p. 252, Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Sybraicus picipes*, Madagascar, FAIRMAIRE, p. 263, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Systema melanocephala*, Peru, *argentinensis*, Tucuman, p. 408, *antennata*, Amazons, p. 409, JACOBY, P. Z. S. 1904, ii, **n. spp.**
- Terpnochlorus* **n. g.** near *Antsianaka*, *T. perrieri* **n. sp.**, Madagascar, FAIRMAIRE, p. 269, Ann. Soc. ent. Belgique xlviii.
- Therpis smaragdina*=(*Mesotoma viridipennis* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Timarchella* **n. g.** p. 268, near *Timarcha*, *T. braunsi* **n. sp.**, Cape Colony, p. 269, JACOBY, P. Z. S. 1904, i, **n. sp.**
- Titubæa ciliciensis*, Taurus, PIC, p. 57, Echange xx ; *T. umtaliensis*, p. 238, *parvula*, p. 239, Africa, JACOBY, P. Z. S. 1904, i, **n. spp.**
- Trichotheca duvivieri*, India, JACOBY, p. 386, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tricliona sulcipennis*, India, JACOBY, p. 388, t. c. **n. sp.**
- Tricliophora* **n. g.** *Typophorinæ*, p. 478, *T. nigra* **n. sp.**, New Guinea, p. 479, JACOBY, Ann. Mus. Genova xli.
- Vitruvia unicolor* Jac. (as *Encorane*)=(*Glabripennis* Jac.), WEISE, p. 167, Arch. Naturg. lxx, i.
- Xenidea loræ*, *dimidiaticornis*, New Guinea, JACOBY, p. 483, Ann. Mus. Genova xli, **n. spp.**
- Xenolina* **n. g.** near *Lina*, *X. marginata* **n. sp.**, New Guinea, JACOBY, p. 481, t. c.
- Yulenia divisa*, New Guinea, JACOBY, p. 496, t. c. **n. sp.**

HISPIDÆ and CASSIDIDÆ.

[Cf. FAIRMAIRE (473), GESTRO (595, 596), LESNE (878), MUIR & SHARP (969), SHARP (1285), SPAETH (1327), WEISE (1503, 1504, 1507).]

List of synonyms, *Hispidæ*, WEISE, p. 457, Deutsche ent. Zeitschr. 1904. MUIR & SHARP (969) describe larvæ, larval clothing, oothecas of S. African *Cassididæ*.

Acanthodes donckieri, p. 444, *limbata*, p. 445, *viridipennis*, p. 446, S. America, WEISE, Deutsche ent. Zeitschr. 1904, **n. spp.**

Agathispa **n. g.** type *Hispa dimidiata* Ol., WEISE, p. 64, Arch. Naturg. lxxi, i.

Agonia femoralis, p. 99, *nigripennis*, p. 100, Sumatra, WEISE, t. c. **n. spp.**

Amplipalpa, table of species, WEISE, pp. 50–52, t. c.

A. fulviceps, Bolivia, WEISE, p. 49, t. c. **n. sp.**

Anoplitis vinculata, p. 70, *discrepans*, p. 71, *regularis*, p. 72, *tesseraria*, *marginella*, p. 73, *lepidula*, *signifera*, p. 74, S. America, WEISE, t. c. **n. spp.**

Asphalesia tuta, Usambara, WEISE, p. 172, t. c. **n. sp.**

Aspidomorpha assimilis var. *n. elegantula*, SPAETH, p. 75, Ann. Mus. Genova xli; *A. rotunda*, characters and larva, FAIRMAIRE, p. 270, Ann. Soc. ent. Belgique xlviii; *A. puncticosta*, larva, pl. iii, fig. 20, p. 9, ootheca, pl. i, figg. 1–6, 9, p. 2, *A. testa*, larva, pl. iv, fig. 21, p. 10, ootheca, p. 6, *A. confinis*, larva, pl. iv, fig. 22, p. 11, ootheca, pl. ii, figg. 10, 11, p. 6, *A. tigrina*, larva, pl. iv, fig. 23, p. 11, ootheca, pl. ii, figg. 12, 13, p. 7, MUIR & SHARP, Tr. ent. Soc. London 1904.

A. saravacensis, Borneo, p. 73, *sumatrana*, p. 74, SPAETH, Ann. Mus. Genova xli, **n. spp.**

Baliosus **n. g.** near *Chalepus*, p. 64, *B. opifer*, p. 74, *hospes*, p. 75, **n. spp.**, S. America, WEISE, Arch. Naturg. lxxi.

Balyana, validity and synonymy, GESTRO, p. 459, Ann. Mus. Genova xli.

Basipta stolidi, larva, pl. v, fig. 24, p. 12, ootheca, pl. ii, figg. 14–16, p. 7, MUIR & SHARP, Tr. ent. Soc. London 1904.

Brontispa **n. g.** near *Oxycephala*, *B. froggatti* **n. sp.**, New Britain, SHARP, p. 924, P. Linn. Soc. N. S. Wales xxviii.

Brontispa and *Oxycephala*, characters and taxonomy, GESTRO, pp. 455–459, Ann. Mus. Genova xli.

Callispa unicolor, Rhodesia, WEISE, p. 171, Arch. Naturg. lxx, i, **n. sp.**

Cassida unimacula, larva, pl. v, fig. 26, p. 14, MUIR & SHARP, Tr. ent. Soc. London 1904.

C. corpulenta, Cameroons, WEISE, p. 173, Arch. Naturg. lxx, i; *C. muirana*, Natal, SHARP, p. 13, pl. v, fig. 25, ootheca, pl. ii, figg. 18, 19, Tr. ent. Soc. London 1904; *C. exsanguis*, p. 270, *ovoidea*, *plicatula*, *rufomicans*, p. 271, *latecincta*, *latericia*, p. 272, *lyrica*, *dorsomicans*, *nigroscutata*, p. 273, *breviuscula*, *fallaciosa*, *nigrotecta*, p. 274, *funebri*, *nigroguttata*, p. 275, Madagascar, FAIRMAIRE, Ann. Soc. ent. Belgique xlviii; *C. feæ*, Burma, SPAETH, p. 71, Ann. Mus. Genova xli : **n. spp.**

Cephalodonta soluta, *cincta*, Brazil, p. 58, *vitticollis*, p. 59, *melanospila*, *munda*, p. 60, *matronalis*, p. 61, *mitis*, p. 62, Brazil, WEISE, Arch. Naturg. lxxi, i; *C. calopteroides*, p. 439, *humerosa*, p. 441, *clara*, p. 442, *bruchii*, *donckieri*, p. 443, Brazil, WEISE, Deutsche ent. Zeitschr. 1904 : **n. spp.**

Cephalotia rosenbergi, *nubila*, p. 55, *bifasciata*, p. 56, Ecuador, WEISE, Arch. Naturg. lxxi, i; *C. interstitialis*, *parenthesis*, p. 437, *fasciata*, p. 438, *tucumana*, p. 439, S. America, WEISE, Deutsche ent. Zeitschr. 1904 : **n. spp.**

Chalepus cincticollis, p. 64, *forticornis*, p. 65, *consimilis*, *viduus*, p. 66,

- sedulus*, *pullus*, p. 67, *erichsoni*, *peruvianus*, *nigripes*, p. 68, S. America, *metallescens*, Mexico, p. 69, *faustus*, Brazil, p. 70, WEISE, Arch. Naturg. lxxi, i, **n. spp.**
- Charidotis divisa*, Peru, p. 176, *drakei*, Paraguay, *redimita*, Bolivia, WEISE, p. 177, t. c. **n. spp.**
- Cælænomenodera speciosa*, p. 461, *signifera*, p. 462, Congo, GESTRO, Ann. Mus. Genova xli; *C. sculptipennis*, Madagascar, FAIRMAIRE, p. 269, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Coptocycla evanescens* Champ. to *Charidotella*, WEISE, p. 175, Arch. Naturg. lxx, i.
- C. piceidorsis*, *trizonata*, Madagascar, FAIRMAIRE, p. 276, Ann. Soc. ent. Belgique xlviii; *C. championi*, Costa Rica, p. 174, *suturalis*, Brazil, p. 175, WEISE, Arch. Naturg. lxx, i : **n. spp.**
- Ctenochira aberrata*, Costa Rica, WEISE, p. 176, t. c. **n. sp.**
- Cyanaspis* **n. g.** near *Himatidium*, p. 433, *C. testaceicornis* **n. sp.**, Bolivia, p. 434, WEISE, Deutsche ent. Zeitschr. 1904.
- Dactylispa lateralis*, S. Africa, p. 450, *assamensis*, Assam, p. 452, WEISE, t. c.; *D. chinensis*, p. 102, China, *donckieri*, Congo, *pusilla*, India, p. 103, WEISE, Arch. Naturg. lxxi, i : **n. spp.**
- Decatelia* **n. g.** p. 435, near *Charistena*, *D. lema* **n. sp.**, Bolivia, p. 436, WEISE, Deutsche ent. Zeitschr. 1904.
- Demothispa tricolor*, *germaini*, Bolivia, WEISE, p. 54, Arch. Naturg. lxxi, i, **n. spp.**
- Dichirispa funebris*, Fernando Po, GESTRO, p. 518, Ann. Mus. Genova xli, **n. sp.**
- Gonophora hæmorrhoidalis* var. *n. undulata*, WEISE, p. 98, Arch. Naturg. lxxi, i.
- G. funebris*, Borneo, WEISE, p. 99, t. c. **n. sp.**
- Hispa testacea*, larval habits, trophi, LESNE, pp. 68-70, Bull. Soc. ent. France 1904.
- H. aurichalcea*, E. Africa, WEISE, p. 171, Arch. Naturg. lxx, i; *H. opaca*, S. Africa, WEISE, p. 448, Deutsche ent. Zeitschr. 1904; *H. linnei*, N. Guinea, *boutani*, Tonkin, p. 101, *gracilicornis*, Cameroons, p. 102, WEISE, Arch. Naturg. lxxi : **n. spp.**
- Javeta gestroi*, Borneo, WEISE, p. 97, t. c. **n. sp.**
- Laccoptera excavata*, larva, p. 15, *ootheca*, p. 8, MUIR & SHARP, Tr. ent. Soc. London 1904.
- Leptispa latifrons*, Ceylon, *nigra*, Pondichery, WEISE, p. 436, Deutsche ent. Zeitschr. 1904, **n. spp.**
- Megapyga brevis*, Mentawai, SPAETH, p. 69, Ann. Mus. Genova xli, **n. sp.**
- Metriona ferrarii*, Java, SPAETH, p. 77, t. c. **n. sp.**
- Millinaspis* **n. g.** for *Calliaspis cassidioides*, Boh., WEISE, p. 433, Deutsche ent. Zeitschr. 1904.
- Octhispa 4-notata*, p. 81, *proba*, p. 82, *peruana*, p. 83, S. America, WEISE, Arch. Naturg. lxxi, i, **n. spp.**
- Odontionycha sublesta*, Usambara, WEISE, p. 173, t. c. **n. sp.**
- Oxycephala fasciata*, *dilutipes*, New Guinea, WEISE, p. 95, t. c. **n. spp.**
- Pistosia* **n. g.** p. 93, *P. maculata* **n. sp.**, Celebes, p. 95, WEISE, t. c.
- Platypria natalensis* (Pér.), S. Africa, pp. 516, 517, *paucispinosa*, S. Thomé isld., p. 520, *fea*, Principe isld., p. 522, GESTRO, Ann. Mus. Genova xli, **n. spp.**
- Probania* **n. g.** *Uroplatinorum*, p. 447, for species of *Odontota* and *Uroplata*, WEISE, Deutsche ent. Zeitschr. 1904; *P. variolaris*, p. 76, *tessellata*, p. 77, *vittulosa*, p. 78, *nigritarsis*, *tibiella*, p. 79, *clara*, p. 80, S. America, WEISE, Arch. Naturg. lxxi, i : **n. spp.**
- Promecotheca antiqua*, New Pomerania, WEISE, p. 97, t. c. **n. sp.**
- Prosopodonta balyi* (= *costata* B.), WEISE, p. 58, t. c. **n. sp.**
- Psilurnus donckieri*, Brazil, WEISE, p. 57, t. c. **n. sp.**

- Rhacocassis* **n. g.** p. 76, for *Coptocycla flavoplagiata*, with var. *n. modiglianii*, p. 77, SPAETH, Ann. Mus. Genova xli.
- Solenispa* **n. g.** for *Cophalolia angusticollis* Wat. and *S. impressicollis* **n. sp.**, Bolivia, WEISE, p. 53, Arch. Naturg. lxxi, i.
- Stenispa luridipennis*, Brazil, WEISE, p. 52, t. c. **n. sp.**
- Thoracispa*, characters, *T. dregei*, figure, GESTRO, pp. 463-465, Ann. Mus. Genova xli.
- T. brunni*, S. Africa, WEISE, p. 449, Deutsche ent. Zeitschr. 1904, **n. sp.**
- Uroplata krautzi*, p. 83, *gracilis*, p. 84, *postica*, p. 85, *apicicornis*, p. 86, *maculata*, *maculicollis*, p. 87, *ferruginea*, p. 88, *orphanula*, p. 89, *pusilla*, p. 90, *illustris*, *clinta*, p. 91, *soror*, *nupta*, p. 92, S. America, WEISE, Arch. Naturg. lxxi, i, **n. spp.**

EROTYLIDÆ.

- Dasydactylus cnici*, Texas, SCHAEFFER, p. 201, J. N. York Ent. Soc. xii, **n. sp.**
- Languria*, N. American, table, SCHAEFFER, pp. 198-200, t. c.; food-habits of larvæ, N. American, CHITTENDEN, pp. 27-30, J. N. York Ent. Soc. xii.
- L. apicalis*, Texas, SCHAEFFER, p. 198, t. c. **n. sp.**
- Pharaxonotha kirschi*=(*Thalisella conradti* Gorh.), ARROW, p. 36, Ent. Mag. xl.
- Triplax marseuli* var. *n. discicollis*, REITTER, p. 156, Wien. ent. Zeit. xxiii.
- Tritoma sibirica*, *consobrina* and *sobrina*, note, SEMENOW, p. 303, Rev. Russe Ent. 1904.

ENDOMYCHIDÆ.

[Cf. PIC (1077), REITTER (1145, 1146, 1152), SEMENOW (1278).]

- Aclenmyssa* **n. g.** near *Clemmys*, p. 41, *A. solarii* **n. sp.**, Valle Lucano, p. 42, REITTER, Wien. ent. Zeit. xxiii.
- Alexia maritima*, Alpes maritimes, REITTER, p. 45, t. c. **n. sp.**
- Dapsa roddiana*, W. Siberia, SEMENOW, p. 289, Rev. Russe. Ent. 1904, **n. sp.**
- Lycoperdina* (*Gorgia*) *jakolevi*, W. Siberia, SEMENOW, p. 290, t. c. **n. sp.**
- Mycetina inapicalis*, Syria, PIC, p. 90, Echange xx, **n. sp.**
- Spherosoma* (*Alexia*) *solarii*, Valle Lucano, REITTER, p. 155, Wien. ent. Zeit. xxiii, **n. sp.**

COCCINELLIDÆ.

[Cf. SCHWARZ (1262), STEBBING (1336), WEISE (1506).]

- WEISE, Deutsche ent. Zeitschr. 1904, pp. 357-364, makes a series of synonymical observations, too numerous to be here reproduced, on the *Coccinellidæ* of the Biologia Centrali-Americana Vol. vii.
- Alexia*, see *Eudomychidæ*.
- Chilocorus similis*, life history, SMITH, pp. 589-595, Rep. New Jersey exp. Stat. 1903.
- Coccinella lyncea*, *quatuordecimprotulata*, varr. and sexes, MÜLLER, p. 177, Wien. ent. Zeit. xxiii; *C. bipunctata* ab. *n. impunctata*, EVERTS, p. 174, Tijdschr. Ent. xlvii.
- Hyperaspis reppensis*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.
- Novius cardinalis* in Italy, natural history, RIBAGA, pp. 299-323, Riv. Patol. Veg. x.
- Pseudoweisea suturalis*, California, SCHWARZ, p. 118, P. ent. Soc. Washington vi, **n. sp.**
- Vedalia guerini*, natural history, STEBBING, pp. 155-162, pl. xvii, J. Linn. Soc. London xxix.

PROTERRHINIDÆ.

Correction, FAUVEL, p. 208, Rev. Ent. franc. 1904.

(B.) HYMENOPTERA.

The names *Apocrita* and *Symphyla* should be used, not Konow's *Chalastogastra* etc., ENDERLEIN, p. 146, Zool. Anz. xxviii.

The hypopharynx of *Hymenoptera*, HILZHEIMER, Jena. Zeitschr. xxxix, pp. 119-150, pl. ii.

Hymenoptera of Alaska, ASHMEAD (55), KINCAID (800), PERGANDE (1026). Oogenesis in Bees etc., BRUNELLI (193).

ACULEATA.

APIDÆ.

[Cf. ADLERZ (15), ALFKEN (23, 24), ASHMEAD (44, 47, 48, 49), BENTON (101), BRÈTHES (179), CAMERON (230, 232, 233, 234), CAUDELL (252), COCKERELL (280-286, 289, 291-293), CRAWFORD (326, 327), DITTRICH (394), DREYLING (403, 404), DUCKE (415), FRIESE (541-552), FRIESE & WAGNER (553), GRAENICHER (619), GRÜNBERG (642), HOLMBERG (697), HOOPER (703), HÖPPNER (705), JACOBS (738), KOPP (840), MORICE (957, 959), NURSE (985), PIERCE (1086), ROBERTSON (1181, 1182), SAUNDERS (1214, 1215), SAUSSURE (1218), SCHROTTKY (1245), SCHULZ (1253, 1255), SEMICHON (1282, 1283), SWENK (1357, 1358), TITUS (1389, 1390), VACHAL (1424-1427), VIERECK (1448, 1450, 1451, 1454).]

Synopsis, or analysis, of classification of bees, families, ROBERTSON, pp. 37-43, Canad. Ent. xxxvi.

Conspectus of bees of Argentina, 91 species, HOLMBERG, An. Mus. Buenos Aires (3) ii, pp. 377-468.

COCKERELL gives various notes on bees described by Smith, Canad. Ent. xxxvi, pp. 301-304.

The branched hairs, CAUDELL, pp. 5, 6, P. ent. Soc. Washington vi.

Wax-organs, *Melipona* group, DREYLING, Zool. Anz. xxviii, pp. 204-210, cuts.

Wax secretion *A. mellifica*, DREYLING, p. 216, Zool. Anz. xxvii.

Bees as carriers of triungulins, PIERCE, pp. 172-180, Stud. Univ. Nebraska iv.

Bees and flowers, WERY, Bull. Ac. Belgique 1904, pp. 1211-1261.

Bee's poison, PHISALIX (1048-1050).

Some bees-nest insects, Brazil, WASMANN, pp. 482-487, Rev. Mus. Paulista vi.

Acanthopus jheringi=(*excellens* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.

Acanthosmiades ashmeadii, Oregon, TITUS, p. 101, P. ent. Soc. Washington vi, n. sp.

Agapostemon azarae, p. 465, *argentinus*, *coryliventris*, p. 466, *multicolor*, p. 467, *experiendus*, p. 468, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii, n. spp.

Ammobates solitarius, Quetta, NURSE, p. 570, J. Bombay Soc. xv, n. sp.

Ancyloscelis ecuadorius, Guyaquil, p. 22, *duckei*, p. 23, *gigas*, p. 24, Para, FRIESE, Zeitschr. Hym. Dipt. iv; *A. baeri*, p. 16, *flitarsis*, p. 17, *tormalis*, *girardi*, p. 18, *humulis*, *analis*, p. 19, S. America, VACHAL, Rev. Ent. franc. xxiii : n. spp.

- Andrena*, remarks on 10 spp. from Greece described by Brullé, ALFKEN, pp. 289–295, Zeitschr. Hym. Dipt. iv; *A. curvungula* and *pandellei*, ALFKEN, p. 320, Zeitschr. Hym. Dipt. iv; *A. parviceps* ♂, FREY-GESSNER, p. 57, Soc. ent. xix; *A. polemonii* to *Ptilundrena*, ROBERTSON, p. 278, Canad. Ent. xxvi.
- A. frey-gessneri*, Switzerland, ALFKEN, p. 81, Soc. ent. xix; *A. inoa*-Himalaya, CAMERON, p. 210, Entomologist 1904; *A. unita*, *balucha*, p. 558, *peskinica*, p. 559, *niveobarbata*, *cara*, p. 560, *hera*, *flavofacies*, p. 561, *marmora*, p. 562, *dolorosa*, *collata*, p. 563, *legata*, *biemarginata*, p. 564, *flagella*, p. 565, *halictoides*, *satellita*, p. 566, India, NURSE, J. Bombay Soc. xv; *A. chlorogaster*, *piperi*, *chlorinella*, *angustitarsata*, *mustelicolor*, Oregon etc., VIERECK, p. 196, Canad. Ent. xxxvi; *A. trachandrenoides*, *pulverulenta*, *seminigra*, p. 221, *indotata*, *solidula*, *junonia*, *compactiscopea*, *neurona*, p. 222, *transnigra*, *seattlensis*, *chapmanæ*, *pullmani*, *longihirtiscopea*, *vicinoides*, p. 223, *saccata*, *hemileuca*, *clypeoporaria*, *advarians*, *harveyi*, p. 224, *asmi*, *sempolitula*, *xanthostigma*, *subcandida*, *deccussata*, *deccussatula*, p. 225, *subdistans*, *plana*, *scurra*, *nubilipennis*, *w-scripta*, p. 226, Oregon etc., VIERECK, Canad. Ent. xxxvi; *A. fragariana*, p. 64, *wheeleri*, p. 65, *persimilis*, p. 66, Wisconsin, GRAENICHER, Ent. News Philad. xv; *A. vierecki*, p. 26, *leptanthi*, p. 27, Colorado, COCKERELL, Ann. Nat. Hist. xiv: **n. spp.**
- Anthidium flavomarginatum* var. *n. ecuadorium*, FRIESE, p. 184, Zeitschr. Hym. Dipt. iv; *A. porterae* var. *n. amabile*, COCKERELL, p. 7, Entomologist 1904; *A. bicoloratum* var. *tucumanum*, VACHAL, p. 14, Rev. Ent. franc. xxiii; *A. paulinieri* ♂, *bicolor*, sexes, p. 101, *niveocinctum*, ♀, *cordatum* ♂, p. 105, FRIESE, Zeitschr. Hym. Dipt. iv; *A. sticticum* to *Dianthidium*, COCKERELL, p. 234, Entomologist 1904; *A. jugatorium* to *Dianthidium*, COCKERELL, p. 84, Ent. News Philad. xv.
- A. opacum*, *cucullatum*, p. 102, *zebra*, *braunsi*, p. 103, *abdominale*, *nigritarse*, p. 104, *nigripes*, *fulleborni*, p. 105, Africa, FRIESE, Zeitschr. Hym. Dipt. iv; *A. junodi*, Transvaal, FRIESE, p. 299, t. c.; *A. aricensis*, Chile, 22-punctatum, p. 182, *buchwaldi*, p. 183, *dentiventris*, p. 184, Ecuador, FRIESE, t. c.; *A. melanotrichum*, Chile, FRIESE, p. 303, t. c.; *A. caroli-ameghinoi*, *Patagonia*, p. 351, with structure of nest, pp. 354–356, BRETHERS, An. Mus. Buenos Aires (3) ii: **n. spp.**
- Anthodioctes* **n. g.** *Dasygastrina*, *A. megachiloides*, p. 435, *psænythioides*, p. 436, **n. spp.**, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Anthoglossa cygni*, Swan River, COCKERELL, p. 203, Ann. Nat. Hist. xiv, **n. sp.**
- Anthophora chilensis* to *Ancyla*, ALFKEN, p. 141, and p. 180, Revist. Chilena viii.
- A. stanfordiana*, California, COCKERELL, p. 32, Ent. News Philad. xv; *A. paranensis*, p. 398, *saltensis*, p. 399, La Plata, HOLMBERG, An. Mus. Buenos Aires (3) ii; *A. hirpex*, S. America, VACHAL, p. 16, Rev. Ent. franc. xxiii: **n. spp.**
- Apis*, genus divided, cf. *Megapis*, *Micrapis*, species list, ASHMEAD, pp. 120–123, P. ent. Soc. Washington, vi; *A. mellifera* L. 1758=(*mellifica* L. 1761), BENTON, P. ent. Soc. Washington vi; *A. mellifica*, nesting at large, BOUVIER, p. 187, Bull. Soc. ent. France 1904; *A. dorsata*, *indica* etc., nesting-habits, wax, HOOPER, Agric. Ledger 1904, No. 7.
- Apista* Sm., characters, COCKERELL, p. 330, Canad. Ent. xxxvi.
- Ashmeadiella schwarzi*, p. 98, *coquilletti*, *rufipes*, p. 99, *curriei*, *gillettei*, p. 100, N. America, TITUS, P. ent. Soc. Washington vi, **n. spp.**
- Augochlora pomona*, p. 456, *egeria*, *terpsichore*, p. 458, *euphrosyne*, p. 459, *polyhymnia*, p. 460, *diana*, p. 461, *epipyrgitis*, p. 462, *aglaia*, p. 463, S. America, HOLMBERG, An. Mus. Buenos Aires (3) ii, **n. spp.**
- Bombus* of Moravia, SLAVIČEK (in Moravian), Vestnik. Klub. Prostějove iv, pp. 83–106; *B.*, habits of Arctic, FRIESE, Allg. Zeitschr. Ent. ix,

- pp. 409-414; *B. terrestris*, early excavation by ♀, L. SCHUSTER, p. 98, Zool. Garten xlv; *B.*, varieties, varr. n., FRIESE & WAGNER, Zool. Jahrb. Suppl. vii, pp. 551-570, pls. xxix, xxx; *B. robustus* varr. n., *B. thoracicus* var. n. *fuliginosus*, FRIESE, p. 188, Zeitschr. Hym. Dipt. iv.
- B. baeri*, *tucumanus*, Tucuman, VACHAL, p. 10, Rev. Ent. franc. xi, **n. spp.**
- Camptopæum rufiventre*, ♀ = (*schewyrewi* Mer.), NURSE, p. 575, J. Bombay Soc. xv.
- Caupolicana lugubris* = (*mystica* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *C. pubescens* = (*herbsti* Fr.), ALFKEN, p. 141, Revist. chilena viii; *C. mystica* var. *baeriana*, VACHAL, p. 23, Rev. Ent. franc. xxiii.
- C. herbsti*, Chile, FRIESE, p. 180, Zeitschr. Hym. Dipt. iv; *C. rufipes*, *albi-ventris*, p. 17, *nigri-ventris*, p. 18, Chile, FRIESE, t. c. : **n. spp.**
- Centris*, nesting habits, SCHROTTKY, pp. 347, 348, Allg. Zeitschr. Ent.; *C. chilensis* = (*smithi* Friese), ALFKEN, p. 141, Revist. chilena viii; *C. dorsata* = (*ehrdardi* Schr. = *pocograndensis* Schr.), *C. obsoleta* = (*furcata* var. *friesei* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *C. furcata* and allies, table, DUCKE, pp. 209-210, Zeitschr. Hym. Dipt. iv; *C. bicolorella* n. n. for *smithi* Friese nec Cress., COCKERELL, p. 235, Entomologist 1904; *C. metatarsalis* ♀, p. 90, *cælebs* ♀, p. 92, FRIESE, Ann. Mus. Hungar. ii.
- C. autrani*, S. America, VACHAL, p. 16, Rev. Ent. franc. xxiii; *C. (Epi-charis) minima*, p. 90, Brazil, *labiata*, Costa Rica, *mixta*, Chile, p. 91, FRIESE, Ann. Mus. Hungar. ii; *C. superba*, p. 212, *singularis*, p. 213, Obidos, DUCKE, Zeitschr. Hym. Dipt. iv; *C. mixta*, Chile, FRIESE, p. 187, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Ceratina ino*, p. 575, *egeria*, *coriuna*, p. 576, Quetta, NURSE, J. Bombay Soc. xv; *C. philippinensis*, Manilla, ASHMEAD, p. 2, J. N. York Ent. Soc. xii : **n. spp.**
- Chacoana* **n. g.** *Xylocoparia*, p. 432, *C. melanoxantha*, **n. sp.**, Argentina, p. 433, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Chalepogenus* **n. g.** p. 416, *C. incertus* **n. sp.**, Argentina, p. 417, HOLMBERG, t. c.
- Chalicodoma combusta* ♂ = (*Megachile cælocera*), COCKERELL, p. 205, Ann. Nat. Hist. xiv.
- Chelostoma neomexicanum*, New Mexico, COCKERELL, p. 13, Canad. Ent. xxxvi, **n. sp.**
- Chilicola? orientalis*, Tucuman, VACHAL, p. 24, Rev. Ent. franc. xxiii, **n. sp.**
- Cladocerapis* **n. g.** type *Lamprocolletes cladocerus* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
- Cælixys* of Africa, characters, pp. 1-7, FRIESE, Arkiv Zool. ii, No. 6; *C. ribis* var. n. *kincaidi*, COCKERELL, p. 33, Ann. Nat. Hist. xiii.
- C. erythropus*, p. 7, *junodi*, p. 8, *difformis*, *caffra*, p. 9, *convergens*, *simplex*, p. 10, *cæruleipennis*, *luteipes*, *incarinata*, p. 11, *planidens*, *nasuta*, p. 12, *setosa*, *furcata*, p. 13, *glabra*, *auriceps*, p. 14, *africana*, *sexspinoso*, p. 15, Africa, FRIESE, Ark. Zool. ii, No. 6; *C. perseus*, India, NURSE, p. 577, J. Bombay Soc. xv; *C. cariniscutis*, *khassiana*, Khasia hills, CAMERON, p. 213, Ann. Nat. Hist. xiii; *C. manila*, Philippines, ASHMEAD, p. 281, Canad. Ent. xxxvi; *C. weinlandi*, New Guinea, SCHULZ, p. 235, Berlin. ent. Zeitschr. xlix; *C. strigata*, *miranda*, S. America, VACHAL, p. 15, Rev. Ent. franc. xxiii; *C. cerasiopleura*, p. 442, *lynchii*, p. 445, *lativalva*, p. 446, *C. ameghinoi*, p. 448, *tucumana*, p. 449, *mendoza*, *insolita*, p. 450, *chacoensis*, p. 451, *vituperabilis*, p. 453, *querens*, p. 454, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Colletes*, notes on some little-known, COCKERELL, p. 276, Ent. News Philad. xv; MORICE figures and describes the male genitalia of thirty-five species of *Colletes*, and tabulates the species, Tr. ent. Soc. London 1904,

- pp. 25–63, pls. vi–ix; *C. occidentalis* Hal. = *chilensis* Spin., *cyaniventris* Hal. = *cyaniventris* Spin., ALFKEN, p. 141, *Revist. chilena* viii.
- C. suecica*, Sweden, AURIVILLIUS, p. 214, *Ent. Tidskr.* xxiv (omitted last year); *C. moricei*, Tenerife, SAUNDERS, p. 229, *Ent. Mag.* xl; *C. eous*, Transcaucasus, p. 43, *cecrops*, Attica, p. 44, *perezi*, Cairo, p. 45, *eatonii*, Algeria, p. 49, *phalericus*, S. Europe, p. 53, *pumilus*, Algeria, p. 55, MORICE, *Tr. ent. Soc. London* 1904; *C. similis*, N. America, ROBERTSON, p. 276, *Canad. Ent.* xxxvi; *C. robustus*, Nebraska, SWENK, p. 251, *Ent. News Philad.* xv; *C. fulgidus*, Oregon etc., SWENK, p. 95, *Canad. Ent.* xxxvi; *C. wilmatti*, New Mexico, COCKERELL, p. 14, *Canad. Ent.* xxxvi; *C. niger*, p. 76, *bruneri*, p. 77, Costa Rica, SWENK, *Canad. Ent.* xxxvi; *C. catulus*, *virgatus*, S. America, VACHAL, p. 26, *Rev. Ent. franc.* xxiii; *C. cyaneus*, Argentina, HOLMBERG, p. 468, *An. Mus. Buenos Aires* (3) ii : **n. spp.**
- Conohalictoides* **n. g.** *C. lovelli* **n. sp.**, Delaware, VIERECK, p. 245, *Ent. News Philad.* xv.
- Crocisa jaegerskoeldi*, Khartoum, MORICE, p. 9, *Jägerskiöld exp. No.* 14, **n. sp.** (but see *Zool. Rec.* 1903).
- Cryptohalictoides* **n. g.** *C. spiniferus* **n. sp.**, Nebraska, VIERECK, p. 261, *Ent. News Philad.* xv.
- Ctenoapis lutea*, sexes, NURSE, p. 570, *J. Bombay Soc.* xv.
- Ctenoplectra vagans*, Philippines, COCKERELL, p. 204, *Ann. Nat. Hist.* xiv, **n. sp.**
- Dialictus*, composition, COCKERELL, p. 235, *Entomologist* 1904.
- Dianthidium*, fresh components, COCKERELL, pp. 206, 207, *Ann. Nat. Hist.* xiv.
- Dioxys atlantica*, Tenerife, SAUNDERS, p. 232, *Ent. Mag.* xl, **n. sp.**
- Diphaglossa spinolæ*, Bolivia, CRAWFORD, p. 50, *Canad. Ent.* xxxvi; *D. ? gaullei*, Tucuman, VACHAL, p. 23, *Rev. Ent. franc.* xxiii : **n. spp.**
- Egipista* **n. n.** for *Apista* Sm., COCKERELL, p. 357, *Canad. Ent.* xxxvi.
- Energoponus* **n. g.** *Anthophorita*, p. 406, *E. ameghoini*, p. 407, *strenuus*, p. 408, **n. spp.**, Argentina, HOLMBERG, *An. Mus. Buenos Aires* (3) ii.
- Epeolus remigatus martini* a distinct species, COCKERELL, p. 24, t. c.
- E. crucis*, p. 39, *beulahensis*, p. 40, New Mexico, *olympiellus*, Washington State, p. 41, COCKERELL, *Ann. Nat. Hist.* xiii; *E. ? baeri*, Tucuman, VACHAL, p. 23, *Rev. Ent. franc.* xxiii : **n. spp.**
- Epiclopus gayi* = (*Melecta chilensis*), COCKERELL, p. 207, *Ann. Nat. Hist.* xiv.
- Epimonispractor* **n. g.** p. 426, *E. gratiosus*, p. 427, *bomanii*, p. 428, **n. spp.** Argentina, HOLMBERG, *An. Mus. Buenos Aires* (3) ii.
- Epinomia triangulifera*, natural history, relations with other insects, PIERCE, pp. 181–189, *Stud. Univ. Nebraska* iv.
- Eriades clypeatus*, p. 297, *bicornutus*, *eximius*, p. 298, S. E. Africa, FRIESE, *Zeitschr. Hym. Dipt.* iv; *E. tenuis*, India, NURSE, p. 577, *J. Bombay Soc.* xv : **n. spp.**
- Euspis* and *Parevaspis*, *E. smithi* **n. n.** for *abdominalis* Sm., FRIESE, pp. 137, 138, *Allg. Zeitschr. Ent.* ix.
- Eucera flavitarsis* = (*Tetralonia placens* Schlett.), ALFKEN, p. 141, *Revist. chilena* viii.
- E. medusa*, p. 578, *diana*, *E. (Macrocera) phryne*, p. 579, *pomona*, p. 580, *cassandra*, p. 581, India, NURSE, *J. Bombay Soc.* xv, **n. spp.**
- Euglossa cordata* var. **n.** *townsendi*, COCKERELL, p. 24, *Ann. Nat. Hist.* xiv; *E. superba* Hoffm. (as *Plusia*) = (*smaragdina* Perty); FRIESE, p. 99, *Zeitschr. Hym. Dipt.* iv.
- Evomalopsis verbesinæ*, New Mexico, COCKERELL, p. 21, *Ann. Nat. Hist.* xiv, **n. sp.**
- Greeleyella* **n. g.** *Panurginæ*, p. 235, *G. beardsleyi* **n. sp.**, Colorado, p. 236, COCKERELL, *Entomologist* 1904.

Habropoda fulvipes, Khasia hills, CAMERON, p. 211, Ann. Nat. Hist. xiii, **n. sp.**

Halictus, synonymical notes on european, ALFKEN, p. 1, Zeitschr. Hym. Dipt. iv; *H. frey-gessneri* n. n. for *subfasciatus* Nyl., id. p. 3; *H. orpheus* n. n. for *testaceus* Nurse, NURSE, p. 26, J. Bombay Soc. xvi; *H.*, Australian and New Zealand species, COCKERELL, p. 211, Ann. Nat. Hist. xiv; *H. gayi*, *posticus* and *gayatinus* Spin. to *Ceratina*, ALFKEN, p. 141, Revist. chilena viii.

H., VACHAL (1426) describes by tables numerous species that are probably new, though this is not stated, many of the names occur twice, there are upwards of 100, all from South and Central America, ? **n. spp.**

H. dubitabilis, p. 613, *hollandi*, p. 614, *hammi*, p. 615, Majorca, SAUNDERS, Tr. ent. Soc. London 1904; *H. dubius*, Tenerife, SAUNDERS, p. 231, Ent. Mag. xl; *H. carinifrons*, N. India, CAMERON, p. 303, Ann. Nat. Hist. xiii; *H. himalayensis*, India, CAMERON, p. 210, Entomologist 1904; *H. philippinensis*, Manila, ASHMEAD, p. 128, P. U. S. Mus. xxviii; *H. manila*, Philippines, ASHMEAD, p. 281, Canad. Ent. xxxv; *H. peraustralis*, S. Australia, COCKERELL, p. 211, Ann. Nat. Hist. xiv; *H. vierecki*, p. 97, *marinus*, p. 99, New Jersey, CRAWFORD, Ent. News Philad. xv; *H. denticulus*, *procerus*, p. 469, *nearcticus*, p. 470, N. America, *ochromerus*, Brazil, *citricornis*, Chili, *trichecus*, p. 471, *transvorsus*, *capitulatus*, p. 472, Mexico, *citerior*, hab. ?, *æquatus*, *linctus*, *crocoturus*, p. 473, *tricorniens*, *jubatus*, *circinatus*, p. 474, *pharus*, *costalis*, *spinalis*, Mexico, *egregius*, Brit. Colombia, *colatus*, Colorado, p. 476, *pallicornis*, Mexico, *crassus*, *granosus*, p. 477, *occultus*, N. America, *respersus*, *laneus*, Mexico, p. 478, *adelipus*, *pullilabris*, p. 479, *arctous*, *nigridens*, *nigricollis*, p. 480, *gelidus*, *gularis*, N. America, *aratus*, Mexico, *diatretus*, Colorado, p. 481, *bivarus*, *curtulus*, p. 482, Mexico, *fartus*, Washington, *sertus*, p. 483, *coactilis*, *ectypus*, *biseptus*, p. 484, *terginus*, *sudus*, Mexico, *beskei*, *centranellus*, S. America, p. 485, *cubitalis*, Mexico, *lanifer*, hab. ?, *pisinnus*, Chili, p. 486, VACHAL, Bull. Soc. Correze xxvi; *H. clematisellus*, New Mexico, COCKERELL, p. 13, Canad. Ent. xxxvi; *H. riveti*, *antarius*, p. 313, *H. (Augochl.) notares*, p. 314, Ecuador, VACHAL, Bull. Mus. Paris 1904; *H. baeri*, *alticola*, Tucuman, VACHAL, p. 25, Rev. Ent. franc. xxiii : **n. spp.**

Heriadini to be used instead of *Trypetini*, TITUS, p. 23, J. N. York Ent. Soc. xii.

Heriades bruneri, Costa Rica, TITUS, p. 24, t. c. **n. sp.**

Heteranthidium **n. g.** type *Anthidium dorsale* Lep., COCKERELL, p. 292, Ent. News Philad. xv.

Hopliphora velutina=(*Oxyntedis beroni* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.

Hoplitis sambuci, Washington, TITUS, p. 101, P. ent. Soc. Washington vi, **n. sp.**

Hoplonomia **n. g.** *Andrenide*, *H. quadrifasciata* **n. sp.**, Philippines, ASHMEAD, p. 4, J. N. York Ent. Soc. xii.

Hypanthidium **n. g.** type *Anthidium flavomarginatum* Sm., COCKERELL, p. 292, Ent. News Philad. xv.

Lanthanomelissa **n. g.** p. 418, *L. discrepans* **n. sp.**, Argentina, p. 418, HOLMBERG, An. Mus. Buenos Aires (3) ii.

Leioproctus boltoni, p. 203, *confusus*, p. 204, New Zealand, COCKERELL, Ann. Nat. Hist. xiv, **n. spp.**

Leptergatis **n. g.** p. 422, *L. halictoides*, *mesopotamica*, p. 424, *romeroi*, p. 425, Argentina, **n. spp.**, HOLMBERG, An. Mus. Buenos Aires (3) ii.

Leptometria **n. g.** p. 409, *L. pereyre*, p. 410, *baraderensis*, p. 411, *andina*, p. 412, **n. spp.**, Argentina, HOLMBERG, t. c.

Macrocera baeri, p. 19, *linearis*, *brethesi*, *buccosa*, p. 20, *curtata*, *discobola*, p. 21, *arrhenica*, *dama*, p. 22, S. America, VACHAL, Rev. Ent. franc. xxiii, **n. spp.**

- Macrotera secunda*, Mexico, COCKERELL, p. 205, Ann. Nat. Hist. xiv, **n. sp.**
- Megachile latimanus grindeliarum* subsp. n., COCKERELL, p. 33, Ent. News Philad. xv; *M. lachesis* ♂, SCHULZ, p. 234, Berlin. ent. Zeitschr. xlix; *M. sauleyi* Guér.=*chilensis* Spin., ALFKEN, p. 141, Revist. chilena viii; *M. sparganotes* to *Lithurgus*, FRIESE, p. 99, Zeitschr. Hym. Dipt. iv; *M. dubia* Sich. to *Lithurgus*, FRIESE, p. 304, t. c.; *M.*, analysis of a nest, LUDWIG, p. 225, Allg. Zeitschr. Ent. ix.
- M. damaraensis*, p. 330, *atripes*, p. 331, *flavescens*, *malangensis*, p. 332, *marshalli*, *triangulifera*, p. 333, *quadrispinosa*, *M. (Chalicodoma) cariniventris*, p. 334, *fulvohirta*, *M. latitarsis*, p. 335, *cornigera*, *niveofasciata*, p. 336, Africa, FRIESE, Zeitschr. Hym. Dipt. iv; *M. volkmanni*, p. 299, *kerensis*, *cyanescens*, p. 301, *junodi*, *impunctata*, p. 302, Africa, FRIESE, t. c.; *M. khasiana*, India, CAMERON, p. 216, Ann. Nat. Hist. xiii; *M. tuprobanae*, Ceylon, CAMERON, p. 15, Zeitschr. Hym. Dipt. iv; *M. aberrans*, Nicobars, Java etc., FRIESE, p. 329, Zeitschr. Hym. Dipt. iv; *M. robbii*, Manila, ASHMEAD, p. 128, P. U. S. Mus. xxviii; *M. strophostylis*, N. America, ROBERTSON, p. 277, Canad. Ent. xxxvi; *M. emoryi*, New Mexico, COCKERELL, p. 7, Entomologist 1904; *M. rufohirta*, Chile, p. 185, *garleppi*, p. 186, *ecuadoria*, p. 187, Ecuador, *aricensis*, Chile, p. 188, FRIESE, Zeitschr. Hym. Dipt. iv; *M. arctos*, Tucuman, *patagonica*, Santa Cruz, p. 11, *vetula*, *rufiplantis*, *baeri*, p. 12, *laevinasis*, *eburnipes*, *schrottkyi*, p. 13, *nubila*, p. 14, Tucuman, VACHAL, Rev. Ent. franc. xxiii : **n. spp.**
- Megacilissa tarsata*=(*metatarsalis* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv; *M. eximia* to *Ptiloglossa*, FRIESE, p. 19, t. c.
- M. matutina*, Paraguay, SCHROTKY, p. 346, Allg. Zeitschr. Ent. ix, **n. sp.**
- Megapis* **n. g.** for *Apis dorsata*, ASHMEAD, p. 120, P. ent. Soc. Washington vi.
- Melanapis rufifrons*, Quetta, NURSE, p. 567, J. Bombay Soc. xv, **n. sp.**
- Melecta interrupta* varr. n. *fallugia*, *rociadensis*, COCKERELL, p. 23, Ann. Nat. Hist. xiv; *M. armata*, habits relations with *Anthophora*, SEMICHON, Bull. Soc. ent. France 1905, p. 188.
- Melipona baeri*, Tucuman, VACHAL, p. 9, Rev. Ent. franc. xxiii, **n. sp.**
- Melissa diabolica*=(*Cyphomelissa pernigra* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Melissodes californica* to *Synhalonia*, COCKERELL, p. 235, Entomologist 1904.
- M. machaerantherae*, New Mexico, COCKERELL, p. 21, Ann. Nat. Hist. xiv, **n. sp.**
- Melissoptila bonaërensis*, Buenos Ayres, HOLMBERG, p. 384, An. Mus. Buenos Aires (3) ii, **n. sp.**
- Micrapis* **n. g.** for *Apis florea*, ASHMEAD, p. 122, P. ent. Soc. Washington vi.
- Monumetha argentifrons*, ♂ characters, TITUS, p. 26, J. N. York Ent. Soc. xii.
- Morgania*; cf. *Pasites* and *Omachthes*.
- Nectarodieta* **n. g.** p. 420, *N. oliveiræ* **n. sp.**, Argentina, p. 421, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Neohalictoides* **n. g.** type *H. maurus* Cr., VIERECK, p. 261, Ent. News Philad. xv.
- Nomada fulvipes* Br.=(*imperialis* Schm.), *N. conjungens*=(*dallatorreana* Schm.), ALFKEN, p. 1, Zeitschr. Hym. Dipt. iv; *N. vegana*, a valid species, var. n. *nitescens*, p. 76, *coloradensis* ♂, *vicinalis* var. n. *infrarubens*, p. 84, COCKERELL, Bull. Colorado exp. Stat. 94; *N. mutica*=(*olympica* Schm.), *N. sexfasciata* var.=(*fulvipes* Br.=*imperialis* Schm.), FRIESE, p. 99, Zeitschr. Hym. Dipt. iv.
- N. detecta*, p. 571, *annexa*, p. 572, India, NURSE, J. Bombay Soc. xv; *N. frieseana*, p. 28, *semiscita*, p. 29, Colorado, COCKERELL, Ann. Nat. Hist. xiv; *N. (Gnathias) rubrella*, p. 75, *N. (Micronomada) lamarensis*, p. 76, *uhleri*, p. 77, *N. (Xanthidium) rhodoxantha*, p. 78, *crawfordi*,

- collinsiana*, p. 79, *parvicincta*, p. 80, with var. *rufula*, *N. gillettei*, *agynia*, p. 81, *pallidella*, p. 82, *coloradella*, *luteopicta*, p. 83, *alpha*, p. 84, Colorado, COCKERELL, Bull. Colorado exp. Stat. 94 : **n. spp.**
- Nomia rubella* ♀, *scutellaris*, *maculata* and *nigripes*, subspp. n., FRIESE, p. 296, Zeitschr. Hym. Dipt. iv; *N. tegulata* ♂, MORICE, p. 6, Jägerskiöld exp. No. 14.
- N. rubra*, Transvaal, FRIESE, 297, Zeitschr. Hym. Dipt. iv; *N. bahadur*, p. 568, *kangrae*, p. 569, India, NURSE, J. Bombay Soc. xv; *N. pilosella*, p. 211, *rothneyi*, p. 214, *interrupta*, *tuberculata*, p. 215, N. India, CAMERON, Ann. Nat. Hist. xiii : **n. spp.**
- Omachthes carnifex* and *histrion*, to *Morgania*, COCKERELL, p. 208, Ann. Nat. Hist. xiv.
- Osiris fasciata* = (*Euthyglossa fasciata* Rad.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Osmia*, N. American components, TITUS, p. 26, J. N. York Ent. Soc. xii; *O. parvula*, *leucomelæna*, and their parasite *Stelis ornatula*, HÖPPNER, pp. 129–134, Allg. Zeitschr. Ent. ix; *O. bicornis*, nests, KOPP, pp. 346–348, Jahresh. Ver. Württemb. lx.
- O. sponsa*, *balucha*, p. 573, *sita*, p. 574, Quetta, NURSE, J. Bombay Soc. xv, **n. spp.**
- Oxæa festiva*, ♂, FRIESE, p. 18, Zeitschr. Hym. Dipt. iv.
- Oxystoglossa decorata*, characters, COCKERELL, p. 208, Ann. Nat. Hist. xiv.
- Parandrena chalybioides*, Oregon, VIERECK, p. 229, Canad. Ent. xxxvi, **n. sp.**
- Paranomia stantoni*, Philippines, ASHMEAD, p. 4, J. N. York Ent. Soc. xii, **n. sp.**
- Parasphcodes*, table, COCKERELL, p. 209, Ann. Nat. Hist. xiv.
- P. melbournensis*, *frenchi*, Australia, COCKERELL, p. 210, t. c. **n. spp.**
- Parevaspis basalis* and *abdominalis*, COCKERELL, p. 207, t. c.
- Pasites dichrous* to *Morgania*, COCKERELL, p. 207, t. c.
- Perdita gerhardi*, p. 21, *monardæ*, p. 22, New Jersey, VIERECK, Ent. News Philad. xv, **n. spp.**
- Podalirius orotavae*, Tenerife, SAUNDERS, p. 234, Ent. Mag. xl; *P. vedettus*, p. 582, *connexus*, p. 583, *sergius*, p. 584, India, NURSE, J. Bombay Soc. xv : **n. spp.**
- Prochelostoma philadelphii*, characters, TITUS, p. 24, J. N. York Ent. Soc. xii.
- Prosopis*, synonymy of European, ALFKEN, pp. 1, 2, Zeitschr. Hym. Dipt. iv; *P. variegata* varr. *n. integra*, *obtusa*, *maculata*, ALFKEN, pp. 322, 323, t. c.; *P.* and its parasite *Gasteruption*, HÖPPNER, pp. 97–103, Allg. Zeitschr. Ent. ix.
- P. dubitata*, S. Europe, p. 323, *persica*, Araxes, p. 324, *friesei*, Fiume, p. 325, ALFKEN, Zeitschr. Hym. Dipt. iv; *P. basimacula*, Darjiling, CAMERON, p. 209, Entomologist 1904; *P. philippinensis*, Manila, ASHMEAD, p. 5, J. N. York Ent. Soc. xii; *P. sayi*, N. America, ROBERTSON, p. 273, Canad. Ent. xxxvi : **n. spp.**
- Proteraner leptanthi*, p. 232, *rhois*, p. 233, Colorado, COCKERELL, Entomologist 1904, **n. spp.**
- Proteriades n. g.* for *Heriades semirubra* Ckll., TITUS, p. 25, J. N. York Ent. Soc. xii.
- Psænythia unizonata*, Argentina, HOLMBERG, p. 455, An. Mus. Buenos Aires (3) ii, **n. sp.**
- Pseudopanergus* = (*Protandrenopsis* Crawl.), COCKERELL, p. 26, Ann. Nat. Hist. xiv.
- P. pectidellus*, New Mexico, id., l. c. **n. sp.**
- Pterandrena oniscicolor*, *albuginosa*, *pallidiscopa*, *nudiscopa*, *pallidifovea*, *complexa*, *erigenoides*, *crypta*, p. 228, *acrypta*, *nudimediocornis*, p. 229, Oregon etc., VIERECK, Canad. Ent. xxxvi, **n. spp.**
- Ptiloglossa aculeata*, Brazil, p. 19, *eburnea*, Peru, p. 20, FRIESE, Zeitschr. Hym. Dipt. iv, **n. spp.**

- Ptilothrix nudipes* Burm. (as *Meliphila*)=(*similis* Fr.), FRIESE, p. 100, t. c.
Rhathymus and *Eurytis*, characters, COCKERELL, p. 208, Ann. Nat. Hist. xiv; *R. armatus*=(*Odyneropsis holosericea* Schr.), FRIESE, p. 100, Zeitschr. Hym. Dipt. iv.
- Robertsonellu* n. g. *Osmiinae*, p. 22, *R. gleasoni* n. sp., Illinois, p. 23, TITUS, J. N. York Ent. Soc. xii.
- Saropoda alpha*, Australia, COCKERELL, p. 204, Ann. Nat. Hist. xiv, n. sp.
Scirtetica n. g. *Euceritæ*, p. 389, *S. antarctica* n. sp., Patagonia, p. 391, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Serapis rufipes*, Cape Colony, FRIESE, p. 106, Zeitschr. Hym. Dipt. iv, n. sp.
Serapista n. n. for *Serapis* Sm., COCKERELL, p. 357, Canad. Ent. xxxvi.
- Speccodes* (*Drepanium*) *olympicus*, p. 230, *S. (Machaeris) washingtoni*, p. 231, *S. (S.) hesperellus, arvensiformis*, p. 232, Oregon etc., COCKERELL, Canad. Ent. xxxvi; *S. veganus, pecosensis*, New Mexico, COCKERELL, p. 5, Entomologist 1905; *S. arroyanus*, New Mexico, COCKERELL, p. 231, t. c.; *S. equator*, Ecuador, VACHAL, p. 314, Bull. Mus. Paris 1904; *S. lunaris*, Tucuman, VACHAL, p. 26, Rev. Ent. franc. xxiii : n. spp.
- Stelis ornatula*, cf. *Osmia*.
- Svastra fulgurans*, Argentina, HOLMBERG, p. 388, An. Mus. Buenos Aires (3) ii, n. sp.
- Synhalonia frater aragalli* subsp. n., *S. crenulaticollis* var. n. *lippiæ*, COCKERELL, p. 25, Ann. Nat. Hist. xiv.
- Tapinotaspis* n. g. p. 413, *T. chacabucensis, sabularum*, p. 415, n. spp., Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii.
- Teleutemnesta* n. g. p. 400, *T. fructifera*, p. 402, *scalaris, relata*, p. 403, *distincta*, p. 404, *separata*, p. 405, La Plata, n. spp., HOLMBERG, t. c.
- Tetralonia melanura*=(*Anthoph. grisea* Schl. and *Megach. gasperini* Schl., also *T. atrifrons* Sm.), FRIESE, p. 99, Zeitschr. Hym. Dipt. iv; *T. analis*=(*Macroglossa oribazi* Rad.), FRIESE, p. 100, t. c.
- Tetrapedia mexicana* Rad. as (*Epeicharis*)=(*florentinia* D. T.=*saussurei* Fr.), FRIESE, p. 100, t. c.
- T. tucumana, gaullei*, Tucuman, VACHAL, p. 22, Rev. Ent. franc. xxiii, n. spp.
- Thygater chrysophora*, Argentina, HOLMBERG, p. 386, An. Mus. Buenos Aires (3) ii, n. sp.
- Thyreothremma* n. g. *Euceritæ*, p. 391, *T. rhopalocera*, p. 393, *desiderata*, p. 395, *abscondita*, p. 396, La Plata, HOLMBERG, t. c. n. spp.
- Trachandrena amphibola*, p. 159, *indotata, ochropleura, crassihirta, perdensa, hadra, limarea*, p. 160, *cleodora, fuscicauda, auricauda, pernuda*, p. 161, Oregon etc., VIERECK, Canad. Ent. xxxvi, n. spp.
- Trachusa serratulæ*, habits, ADLERZ, pp. 121–129, Ent. Tidskr. xxv.
- Trichocerapis* n. g. type *Tetralonia mirabilis* Sm., COCKERELL, p. 292, Ent. News Philad. xv.
- Triepeolus helianthi* var. n. *arizonensis, cressoni* var. n. *frasere*, COCKERELL, p. 39, Ann. Nat. Hist. xiii.
- T. nautlana*, Mexico, *pimarum, mesillæ*, p. 36, *isocoma*, p. 38, New Mexico, COCKERELL, t. c. n. spp.
- Trigona heideri, occidentalis*, SCHULZ, p. 823, SB. Ak. Munchen 1904.
- T. catamarcensis*, p. 378, *remota*, p. 379, HOLMBERG, An. Mus. Buenos Aires (3) ii, n. spp.
- Xylocopa collaris* var. n. *binghami*, COCKERELL, p. 30, Ann. Nat. Hist. xiv; *X. violacea*, piercing flowers for nectar, COBELL, p. 11, Allg. Zeitschr. Ent. ix; *X.* and flowers in Paraguay, SCHROTTKY, p. 346, Allg. Zeitschr. Ent. ix.
- X. nautlana*, Mexico, COCKERELL, p. 30, Ann. Nat. Hist. xiv, n. sp.
- Zucesta*, referred to *Panurgidae*, characters, TITUS, p. 26, J. N. York Ent. Soc. xii.

VESPIDÆ, EUMENIDÆ, RHOPALOSOMIDÆ, MASARIDÆ.

[Cf. ADLERZ (14), BRÈTHES (176, 178, 180, 181), DU BUYSSON (218, 219), CAMERON (222, 223, 228–231, 234, 235), DALLA TORRE (342), DUCKE (411, 414), DUSMET (417), ENDERLEIN (457), FRIESE (541), VON IHERING (731), MORICE (959), NURSE (986), PECHLAUER (1014), PORTER (1099), SAUNDERS (1215), SAUSSURE (1218), SCHULTHESS-RECHBERG (1246), SCHULZ (1253, 1255), TULLGREN (1404).]

The genera and classification revised and the species listed, DALLA TORRE, Gen. Ins. *Vespidæ*, 108 pp., 6 plates.

Moravian wasps, table in Moravian, SLAVIČEK, pp. 18–22, Vestnik. Klub. Prostejove i.

Supplement to Spanish *Eumenidæ*, with notes on critical species, DUSMET, pp. 126–137, Bol. Soc. espan. iv.

Vespidæ of S. America and Argentina, with 1 n. sp., BRÈTHES (176).

Social wasps of S. America, monograph, plate of nests, DUCKE, Bol. Mus. Gældi iv, pp. 317–374.

Eumenidæ of La Plata monographed, BRÈTHES, An. Mus. Buenos Aires (3) ii, pp. 231–320.

Annotated list of Chilian *Vespidæ*, PORTER, Revist. chilena viii, pp. 193–197.

Habits of *Polistes biglumis* in Sweden, ADLERZ, pp. 97–106, Ent. Tidskr. xxv.

Alastor merceti, Alicante, DUSMET, p. 126, Bol. Soc. espan. iv; *A. anomalus*, p. 303, *schrottkyi*, p. 305, *argentinus*, p. 306, *persimilis*, p. 308, *elongatus*, p. 309, *arcuatus*, p. 310, S. America, BRÈTHES, An. Mus. Buenos Aires (3) ii : n. spp.

Alpha n. gr. of *Paragia*, DALLA TORRE, p. 4, *Vespidæ*.

Belenogaster petiolatus = (*brachycerus* Kohl), p. 461, *junceus*, nests, p. 453, TULLGREN, Arkiv Zool. i.

B. occidentalis, Cameroons, TULLGREN, p. 455, pl. xxv, fig. 14, t. c. n. sp.

Beta n. gr. of *Paragia*, DALLA TORRE, p. 4, *Vespidæ*.

Chartergus laticinctus, p. 330, *rufiventris*, p. 335, *pusillus*, p. 336, *nitidus*, p. 338, S. America, DUCKE, Bol. Mus. Gældi iv, n. spp.

Ctenochilus argentinus, La Plata, BRÈTHES, p. 232, An. Mus. Buenos Aires (3) ii.

Deuteroapoica n. n. for *Apoica* pt., DALLA TORRE, p. 79, *Vespidæ*.

Deuterodiscalius n. gr. of *Discalius*, DALLA TORRE, p. 18, *Vespidæ*.

Discalius cuyanus, p. 234, *paranensis*, p. 236, *assimilis*, p. 238, *ater*, p. 239, *auritulus*, p. 241, *fluminensis*, p. 242, *nitidus*, p. 245, *prixii*, p. 246, *andinus*, p. 248, La Plata, BRÈTHES, An. Mus. Buenos Aires (3) ii, n. spp.

Eualastor n. gr. for part of *Alastor*, DALLA TORRE, p. 60, *Vespidæ*.

Euancistrocerus n. n. for *Ancistrocerus* s. str. Sauss., DALLA TORRE, p. 36, *Vespidæ*.

Euceramius n. gr. of *Cerannius*, DALLA TORRE, p. 5, *Vespidæ*.

Eudiscalius n. g. *E. metallicus* n. sp., Tenimber-Larat, FRIESE, Zeitschr. Hym. Dipt. iv.

Euepipona n. n. for *Epiponus* s. str. Sauss., DALLA TORRE, p. 39, *Vespidæ*.

Eumenes latreillei, *petiolaris* and *butonensis* subspp. n., SCHULZ, pp. 217, 218, Berlin. ent. Zeitschr. xlix; *E. coarctatus* and *pomiformis*, ZAVATTARI, p. 8, Boll. Mus. Torino xix, No. 482.

E. gracillima, Cameroons, TULLGREN, p. 445, pl. xxiii, fig. 8, Arkiv Zool. i; *E. parvilineata*, Sikkim, CAMERON, p. 12, Zeitschr. Hym. Dipt. iv; *E. montana*, Quetta, NURSE, p. 26, J. Bombay Soc. xvi; *E. micado*, Japan, CAMERON, p. 35, Entomologist 1904; *E. alfkeni*, Obidos,

- DUCKE, p. 138, Zeitschr. Hym. Dipt. iv ; *E. autrani*, p. 252, *arechavaletæ*, p. 256, La Plata, *magna*, p. 258, Brazil, BRÈTHES, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Eumontezumia* **n. n.** for a division of *Montezumia*, DALLA TORRE, p. 27, Vespidae.
- Euodynerus* **n. n.** for *Odynerus* pt. Sauss., DALLA TORRE, p. 38, Vespidae.
- Eupolistes* **n. gr.** for pt. of *Polistes*, DALLA TORRE, p. 68, Vespidae.
- Eupolybia* **n. subg.** for *Polybia* pt., DALLA TORRE, p. 76, Vespidae.
- Eurhynchium* **n. n.** for *Rygychium* div. I Sauss., DALLA TORRE, p. 33, Vespidae.
- Eusynagris* **n. n.** for *Synagris*, div. I Sauss., DALLA TORRE, p. 30, Vespidae.
- Euzethus* **n. gr.** for *Zethus* div. I Sauss., DALLA TORRE, p. 14, Vespidae.
- Hymenosmithia* **n. n.** for *Smithia* Sauss., DALLA TORRE, p. 61, Vespidae.
- Icaria singapurensis*, p. 120, *rufinoda*, p. 121, Singapore, CAMERON, J. Straits Asiat. Soc. xli, **n. spp.**
- Icariastrum* **n. n.** for *Icaria* Sect. I Sauss., DALLA TORRE, p. 72, Vespidae.
- Icariella* **n. n.** for *Icaria* Sect. II Sauss., DALLA TORRE, p. 72, Vespidae.
- Icariola* **n. n.** for *Icaria* Sect. III Sauss., DALLA TORRE, p. 72, Vespidae.
- Juartinia indica*, Deesa, CAMERON, p. 89, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Leontiniella* **n. g.** near *Monobia*, *L. argentina* **n. sp.**, Argentina, BRÈTHES, p. 265, An. Mus. Buenos Aires (3) ii.
- Macropespa* **n. n.** for part of *Vespa*, DALLA TORRE, p. 64, Vespidae.
- Masaris alfkeni*, Damara land, DU BUYSSON, p. 144, Bull. Soc. ent. France 1904, **n. sp.**
- Megacanthopus* **n. g.** near *Polybia*, p. 358, with *M. collaris*, *lecointei*, p. 361, *alfkenii*, *imitator*, p. 362, *punctatus*, p. 363, **n. spp.**, S. America, DUCKE, Bol. Mus. Gældi iv.
- Monobia angulosa* var. *n. cingulata*, BRÈTHES, p. 264, An. Mus. Buenos Aires (3) ii.
- M. atrorubra*, Pará, DUCKE, p. 142, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Montezumia saussurei* to *Nortonia*, SCHULTHESS-RECHBERG, p. 270, Zeitschr. Hym. Dipt. iv.
- M. bruchii*, Argentina, id. p. 263, t. c. ; *M. difficilis*, Pará, DUCKE, p. 141, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Nortonia*, table of species, SCHULTHESS-RECHBERG, p. 270, Zeitschr. Hym. Dipt. iv.
- N. polybioides*, p. 272, *lugens*, p. 274, Peru, *bifasciata*, p. 275, *steinbachi*, p. 277, Tucuman, SCHULTHESS-RECHBERG, t. c. ; *N. sulcata*, Pará, DUCKE, p. 140, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Odynerus argentinus*, nesting habits, BRÈTHES, p. 204, pl. i, Revist. Mus. La Plata x.
- O. eatoni*, Tenerife, SAUNDERS, p. 203, Ent. Mag. xl ; *O. (? Ancistrocerus) aberraticus*, White Nile, MORICE, p. 4, Jägerskiöld exp. No. 14 (but see Zool. Rec. 1903) ; *O. flucatus*, Cameroons, TULLGREN, p. 452, pl. xxv, fig. 13, Arkiv Zool. i ; *O. camicrus*, Darjiling, CAMERON, p. 259, Entomologist 1904 ; *O. rhipheus*, p. 308, *tytides*, p. 309, Darjiling, CAMERON, Entomologist 1904 ; *O. declivus*, p. 273, *acuminatus*, p. 274, *montevidensis*, p. 276, *subtropicalis*, p. 278, *lynchii*, p. 279, *catamarcensis*, p. 283, *arechavaletæ*, p. 285, *cuyanus*, p. 287, *heptagonalis*, p. 289, *punctatus*, p. 290, *bruchii*, p. 292, *ameghinoi*, p. 300, *schrötkyi*, p. 302, *patagonus*, p. 312, S. Amer., Bolivia, Patagonia, BRÈTHES, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Parachartergus* and *P. bentobuenoi*, IHERING, Bull. Soc. ent. France 1904, p. 84.
- P. wagneri*, Tijuca, DU BUYSSON, p. 145, Bull. Soc. ent. France 1904, **n. sp.**
- Polistella* **n. g.** for *Polistes manillensis*, ASHMEAD, p. 133, P. U. S. Mus. xxviii.

- Polistes tepidus novæ-pomeraniæ* subsp. n., p. 227, *P. marginalis papuanus* subsp. n., p. 231, SCHULZ, Berlin. ent. Zeitschr. xlix; *P. crinitus* = (*annularis* and *pallipes* Schrottky), BRÈTHES, p. 24, An. Mus. Buenos Aires (3) ii.
- P. inornatus*, Cameroons, TULLGREN, p. 456, pl. xxv, fig. 15, Arkiv Zool. i; *P. niger*, Brazil, BRÈTHES, p. 20, An. Mus. Buenos Aires (3) ii; *P. gældii*, p. 368, *biglumoides*, p. 369, *claripennis*, p. 370, *rufiventris*, *occipitalis*, p. 371, S. America, DUCKE, Bol. Mus. Gældi iv : n. spp.
- Polistoides* n. gr. for pt. of *Polistes*, DALLA TORRE, p. 68, Vespidae.
- Polybia furnaria*, p. 85, *ypiranguensis*, p. 86, IHERING, Bull. Soc. ent. France 1904; *P. jurinei* var. n. *bonaërense*, BRÈTHES, p. 28, An. Mus. Buenos Aires (3) ii.
- P. pseudomimetia*, Amazons, SCHULZ, p. 803, SB. Ak. Munchen 1903; *P. huberi*, *holoxantha*, p. 349, *micans*, *rufitarsis*, p. 351, *vulgaris*, p. 352, *lutea*, p. 353, *obidensis*, p. 354, *lignicola*, *cementaria*, p. 355, *sculpturata*, p. 356, S. America, DUCKE, Bol. Mus. Gældi iv : n. spp.
- Protapoica* n. n. for *Apoica* pt., DALLA TORRE, p. 79, Vespidae.
- Protodiscalius* n. gr. of *Discalius*, DALLA TORRE, p. 18, Vespidae.
- Rhynchium hemorrhoidale dohertyi* subsp. n., SCHULZ, p. 223, Berlin. ent. Zeitschr. xlix; *R. sirdari*, Khartoum, MORICE, p. 4, Jägerskiöld exp. No. 14, n. sp. (but see Zool. Rec. 1903).
- Synagris trispinosa*, p. 447, pl. xxiv, fig. 9, *rufopicta*, fig. 10, p. 448, *uncata*, fig. 11, p. 449, *4-punctata*, fig. 12, p. 450, Cameroons, TULLGREN, Arkiv Zool. i, n. spp.
- Tetrarthra* n. gr. of *Monobia*, DALLA TORRE, p. 28, Vespidae.
- Triarthra* n. gr. of *Monobia*, DALLA TORRE, p. 28, Vespidae.
- Trimeria buyssoni*, Argentina, BRÈTHES, p. 371, An. Mus. Buenos Aires (3) ii, n. sp.
- Tritodiscalius* n. gr. of *Discalius*, DALLA TORRE, p. 18, Vespidae.
- Vespa* : R. DU BUYSSON completes his monograph of *Vespa*, describing several varr. n. in addition to the new species mentioned below, Ann. Soc. ent. France 1904, pp. 485–556, plates v–x; *V. orbata* var. n. *aurulenta*, *V. rufa intermedia* var. n. p. 591, var. n. *americana*, p. 592, *V. norvegica* var. n. *adulterina*, p. 600, *V. silvestris* var. n. *sumptuosa*, p. 603, *V. germanica* var. n. *stizoides*, p. 615, DU BUYSSON, t. c.; *V. germanica*, nest, census, PECHLANER, Verh. Ges. Wien liv, p. 77; *V. rufa*, nest with *V. austriaca*, BERESFORD, p. 242, Irish Natural. 1904.
- V. barthelemyi*, Cambodia, DU BUYSSON, p. 618, Ann. Soc. ent. France 1904; *V. variabilis*, China, p. 522, *binghami*, Yunnan, p. 523, *eulemoides*, Andaman Islands, p. 530, *mocsaryana*, Malacca, p. 537, *walkeri*, China, p. 539, DU BUYSSON, Ann. Soc. ent. France 1904 : n. spp.
- Wettsteinia* n. g. for *Labus* Sect. II Sauss., DALLA TORRE, p. 13, Vespidae.
- Zethoides* n. g. *Masaridae*, p. 93, *Z. flavolineatus* n. sp., Panama, p. 94, CAMERON, Tr. Amer. ent. Soc. xxx.
- Zethus broomi*, S. Africa, CAMERON, p. 110, Rec. Albany Mus. i; *Z. himalayensis*, p. 13, *3-maculatus*, p. 14, Sikkim, CAMERON, Zeitschr. Hym. Dipt. iv; *Z. corallinus*, p. 135, *dimidiatus*, p. 136, Pará, DUCKE, Zeitschr. Hym. Dipt. iv : n. spp.

HYMENOPTERA FOSSORIA (or SPHEGOIDEA).

[Cf. ADLERZ (13, 16), ANDRÉ (28–30), ASHMEAD (44, 46, 47, 48), AURIVILLIUS (59), BRÈTHES (181), DU BUYSSON (219), CAMERON (222, 224, 225, 227–230, 232–234, 238), DUCKE (413), ENDERLEIN (458), GARCIA (587, 588), KOPP (840), MANTERO (904), NURSE (986), PICARD (1080), SAUNDERS (1214, 1215), SAUSSURE (1218), SCHULZ (1253, 1254), TULLGREN (1404, 1405), VIERECK (1445, 1446, 1449, 1453), VIERECK & COCKERELL (1455).]

- Synopsis of the *Fossoria* of Argentina, 57 spp., HOLMBERG, pp. 469–504, An. Mus. Buenos Aires (3) ii.
- Classification of *Mutillidae* completed, ASHMEAD, pp. 5–9, Canad. Ent. xxxvi; *Mutillidae*, Ashmead's genera detailed and criticised, ANDRÉ, pp. 27–41, Rev. Ent. franc. xxiii.
- Philanthidae*, N. American, revision and tables, VIERECK & COCKERELL, J. N. York Ent. Soc. xii, pp. 84, 129 etc.
- The *Sphegidae* of Sweden, AURIVILLIUS, Ent. Tidskr. xxv, pp. 241–300.
- Localities for Palearctic *Sphegidae*, SCHULZ (1254).
- Æluroides* n. g. *Thynnidae*, p. 428, *Æ. sjostedti* n. sp., Cameroons, p. 429, TULLGREN, Arkiv Zool. i.
- Agencia cingulata*, Manila, ASHMEAD, p. 133, P. U. S. Mus. xxviii; *A. lynchii*, Buenos Ayres, HOLMBERG, p. 494, An. Mus. Buenos Aires (3) ii : n. spp.
- Ammophila bolanica* ♂, NURSE, p. 25, J. Bombay Soc. xvi; *A. sabulosa*, habits, KOPP, pp. 344–346, Jahresh. Ver. Wurtemb. lx.
- Ammoplanus ceanothæ*, Pennsylvania, VIERECK, p. 72, Psyche xi, n. sp.
- Ampulex hellmayri*, Amazons, SCHULZ, p. 760, SB. Ak. Munchen 1903, n. sp.
- Anodontyna tricolor* ♀, p. 317, *albofasciata* ♂, p. 318, ANDRÉ, Zeitschr. Hym. Dipt. iv.
- Anoplius johannis*, p. 126, *oneili*, p. 127, *A. (Ferrolea?) gradatus*, *A. (Schizosalius?) melanostomus*, p. 128, *A. argenteodecoratus*, p. 129, *dunbrodyensis*, p. 130, *labialis*, *spilopus*, p. 131, *kirtiscapus*, p. 132, *trichiocephalus*, p. 133, *A. (Homonotus) spilonotus*, p. 134, *A.? cænoceras*, p. 135, Cape Colony, CAMERON, Rec. Albany Mus. i, n. spp.
- Anothyreus panurgoides*, Pennsylvania, VIERECK, p. 239, Tr. Amer. ent. Soc. xxx, n. sp.
- Apteropompilus dentatus*, Uitenhage, CAMERON, p. 176, Zeitschr. Hym. Dipt. iv, n. sp.
- Astata lucinda*, Quetta, NURSE, p. 25, J. Bombay Soc. xvi, n. sp.
- Aulacophilus eumenoides*, Pará, DUCKE, p. 97, Zeitschr. Hym. Dipt. iv, n. sp.
- Barymutilla alticola*, W. Africa, ANDRÉ, p. 226, Ann. Mus. Genova xli, n. sp.
- Bembex*, characters of Spanish, GARCÍA, pp. 341–356, Bol. Soc. espan. iv.
- B. handlirschi*, p. 343, *miscella*, p. 345, *hispanica*, p. 347, Spain, GARCÍA, t. c.; *B. megadonta*, Darjiling, CAMERON, p. 261, Entomologist 1904; *B. khasiana*, Assam, CAMERON, p. 123, Tr. ent. Soc. London 1904 : n. spp.
- Bembidula simillima* Sm. redescribed, DUCKE, p. 91, Zeitschr. Hym. Dipt. iv.
- Bothynostethus collaris*, Pará, p. 95, *clypealis*, Alemquer, p. 189, DUCKE, t. c. n. spp.
- Cerceris rhybensis dittrichi* subsp. n., SCHULZ, p. 93, Zeitschr. Ent. Breslau xxix.
- C. violaceipennis*, p. 292, *latibalteata*, p. 293, N. India, CAMERON, Ann. Nat. Hist. xiii; *C. japonica, quinquecincta*, Japan, ASHMEAD, p. 66, J. N. York Ent. Soc. xii; *C. nasica, fidelis*, p. 132, *platyrhina, macrosticta*, p. 133, *ferruginior*, p. 134, *garciana, populorum, femur-rubrum*, p. 135, *convergens, chilopsidis*, p. 136, *rinconis, novomexicana*, p. 137, *crotonella, eriogoni*, p. 139, *townsendi, vicinoides*, p. 140, New Mexico, VIERECK & COCKERELL, J. N. York Ent. Soc. xii; *C. perspicua*, p. 475, *paupercula, levigata*, p. 476, *moyanoi*, p. 477, *caridei*, p. 478, *probo-scidea*, p. 479, *diademata*, p. 480, *melanogaster, gaudebunda*, p. 481, *polychroma*, p. 483, *campestris*, p. 484, *elephantinops* with var. *dissita*, p. 485, *bonaërensis*, p. 486, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : n. spp.
- Ceropales maculata*, parasitic habits, ADLERZ, Bih. Svenska Ak. xxviii, Afd. iv, No. 14, 20 pp.
- C. punctulata*, Cape Colony, CAMERON, p. 138, Rec. Albany Mus. i, n. sp.

- Chlorion cyaneum*, synonymy, FERNALD, p. 120, Ent. News Philad. xv;
C. lobatus, food-habits, MAXWELL-LEFROY, p. 531, J. Bombay Soc. xv.
Clytochrysis dubiosus, Japan, ASHMEAD, p. 65, J. N. York Ent. Soc. xii,
n. sp.
Crabro alatus japonicus subsp. n., SCHULZ, p. 99, Zeitschr. Ent. Breslau
 xxix.
C. trichiosomus, p. 260, *agycus*, p. 261, Himalaya, CAMERON, Entomologist
 1904, **n. spp.**
Dasyproctus philippinensis, Manila, ASHMEAD, p. 129, P. U. S. Mus. xxviii,
n. sp.
Dielis testaceipes, Japan, CAMERON, p. 34, Entomologist 1904, **n. sp.**
Diodontus gracilipes, Tenerife, SAUNDERS, p. 202, Ent. Mag. xl; *D. crassi-*
cornis, Oregon, VIERECK, p. 243, Tr. Amer. ent. Soc. xxx : **n. spp.**
Dolichomutilla bolamana, W. Africa, ANDRÉ, p. 223, Ann. Mus. Genova xli,
n. sp.
Dolichurus obidensis var. n. *maranhensis*, DUCKE, p. 91, Zeitschr. Hym.
 Dipt. iv.
Elaphroptera herbsti, Chile, ANDRÉ, p. 308, Zeitschr. Hym. Dipt. iv, **n. sp.**
Entomognathus lenapeorum, Pennsylvania, VIERECK, p. 239, Tr. Amer. ent.
 Soc. xxx, **n. sp.**
Ephuta (Photopsis) chilicola, Chile, ANDRÉ, p. 306, Zeitschr. Hym. Dipt. iv,
n. sp.
Ephutopsis **n. g.** *Ephutinae*, type *trinidadensis* Ashm., ASHMEAD, p. 6,
 Canad. Ent. xxxvi.
Eucerceris, tables of species, VIERECK & COCKERELL, pp. 84-88, J. N. York
 Ent. Soc. xii.
E. striareata, p. 85, *chapmanæ*, p. 86, *simulatrix*, p. 87, New Mexico, iid.
 t. c. **n. spp.**
Euspinolia, characters and components, ANDRÉ, p. 286, Zeitschr. Hym.
 Dipt. iv.
Gorytes levis ægyptiacus subsp. n., SCHULZ, p. 96, Zeitschr. Ent. Breslau
 xxix; *G. scutellaris*=(*Harpactes sanguinans* Dom.), *G. triangularis*
 Sm., taxonomical characters, DUCKE, p. 92, Zeitschr. Hym. Dipt. iv.
Homalothynnus **n. g.** *Thynnida*, p. 466, *H. eburneus* **n. sp.**, Adelaide,
 p. 468, ENDERLEIN, Zool. Anz. xxvii.
Ischnolynchus **n. g.** near *Crabro*, *I. foveolatus* **n. sp.** Argentina, HOLMBERG,
 p. 472, An. Mus. Buenos Aires (3) ii.
Larra bicolorata, p. 294, *pygidialis*, p. 295, N. India, CAMERON, Ann. Nat.
 Hist. xiii; *L. apicepennis*, N. India, CAMERON, p. 302, t. c. : **n. spp.**
Liris violaceipennis, N. India, CAMERON, p. 300, Ann. Nat. Hist. xiii, **n. sp.**
Macromeris honestus, Sm. (as *Pompilus*)=(*aureopilosa* Cam.), CAMERON,
 p. 90, Zeitschr. Hym. Dipt. iv.
Megalomma quadricinctum, Manila, ASHMEAD, p. 132, P. U. S. Mus. xxviii,
n. sp.
Meria quadrimaculata to *Myzine*, CAMERON, p. 90, Zeitschr. Hym. Dipt. iv.
Methoca ichneumonoides, habits, ADLERZ, pp. 255-258, Arkiv Zool. i.
Mimesa palliditarsis, Majorca, SAUNDERS, p. 605, Tr. ent. Soc. London
 1904, **n. sp.**
Monedula surinamensis, nesting habits, BRÈTHES, pp. 200-204, Revist. Mus.
 La Plata x.
Mutilla alecto, *M. æstuans* Gerst. is ♀, p. 227, *M. atricolor* ♂, p. 233,
 var. n. *ochraceomaculata*, p. 234, *M. cyparissa* ♀, p. 236, ANDRÉ,
 Ann. Mus. Genova xli.
M. sordidata, Cameroons, TULLGREN, p. 427, Arkiv Zool. i; *M. auro-*
decorata, p. 229, *omissa*, p. 231, *ignota*, p. 240, *principis*, p. 242,
polyacantha, p. 245 & var. *dichromatica*, p. 246, *sessiliventris*, p. 246,
varians, p. 247, *spinicollis*, p. 250, W. Africa, ANDRÉ, Ann. Mus.
 Genova xli; *M. vesta*, India, NURSE, p. 24, J. Bombay Soc. xvi; *M. inoa*,

- p. 279, *artaxa*, *trebia*, p. 280, N. India, CAMERON, Ann. Nat. Hist. xiii; *M. sceva*, p. 6, *gnatia*, p. 7, *tiza*, p. 8, Khasia hills, CAMERON, Zeitschr. Hym. Dipt. iv; *M. semperi*, Manila, ASHMEAD, p. 135, P. U. S. Mus. xxviii : **n. spp.**
- Myrmilla subspinoso*, W. Africa, ANDRÉ, p. 222, Ann. Mus. Genova xli, **n. sp.**
- Myzine*, *Apis fusiformis* De Geer, to this, TULLGREN, p. 462, Arkiv Zool. i. *Nectanebus fischeri fischeri*, and *fischeri algeriensis*, SCHULZ, pp. 9–11, Allg. Zeitschr. Ent. ix.
- Notogonia manila*, Philippines, ASHMEAD, p. 130, P. U. S. Mus. xxviii, **n. sp.**
- Nysson laufferi*, Madrid, GARCÍA, p. 392, Bol. Soc. espan. iv; *N. violaceipennis*, Sikkim, CAMERON, p. 10, Zeitschr. Hym. Dipt. iv; *N. submellipes*, *tramosericus*, p. 237, *daeckei*, p. 238, N. America, VIERECK, Tr. Amer. ent. Soc. xxx; *N. cressoni*, N. Mexico, CAMERON, p. 95, Tr. Amer. ent. Soc. xxx; *N. alfkeni*, Amazons, DUCKE, p. 190, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Ochleroptera* **n. g.** *O. oblita* **n. sp.**, Argentina, HOLMBERG, p. 487, An. Mus. Buenos Aires (3) ii.
- Odontolarra nigra*, Sikkim, CAMERON, p. 12, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Odontophotopsis acmæus*, p. 84, *subtenuis*, *trunculus*, p. 85, *crucis*, p. 86, *sercus*, *alamonis*, p. 87, *avellanus*, p. 88, *fallax*, *indotatus*, p. 89, *augustus*, p. 90, *delodontus*, p. 91, VIERECK, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Odontothynnus* **n. g.** *Thynnides*, p. 161, *O. bidentata*, *lacteipennis*, p. 162, **n. spp.**, S. Africa, CAMERON, Rec. Albany Mus. i.
- Ornepetes albonotata*, Chile, ANDRÉ, p. 314, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Oxybelus platensis*, Buenos Aires, **n. sp.**, p. 195, with notes on habits and instincts, pp. 196–200, pl. i, BRÈTHES, Revist. Mus. La Plata x.
- Paniscomima* **n. g.** *Rhopalosomida*, p. 465, for *P. erlangeriana* **n. sp.**, Somaliland, p. 466, ENDERLEIN, Zool. Anz. xxvii.
- Paranothyreus rugicollis*, New Jersey, VIERECK, p. 241, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Paratiphia 12-maculata*, Panama, CAMERON, p. 94, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Passalacus* (sic) *river-tonensis*, New Jersey, VIERECK, p. 243, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Philanthus camerunensis*, Africa, TULLGREN, p. 444, pl. xxiii, fig. 7, Arkiv Zool. i; *P. punctinudus*, p. 144, *crotoniphilus*, p. 145, New Mexico, VIERECK & COCKERELL, J. N. York Ent. Soc. xii : **n. spp.**
- Piagetia varicornis*, Sikkim, CAMERON, p. 11, Zeitschr. Hym. Dipt. iv; *P. ruficollis*, Singapore, CAMERON, p. 119, J. Straits Asiat. Soc. xli : **n. sp.**
- Pison pallidipalpe*, description, SCHULZ, p. 214, Berlin. ent. Zeitschr. xlix.
- P. laguna*, Philippines, ASHMEAD, p. 131, P. U. S. Mus. xxviii, **n. sp.**
- Pisonitus argenteus*, Philippines, ASHMEAD, p. 131, t. c. **n. sp.**
- Podium* (*Parapodium*) *batesianum*, Amazons, SCHULZ, p. 772, SB. Ak. Munchen 1903, **n. sp.**
- Pompilus viaticus*, habits, PICARD, pp. 142–145, Feuille Natural. xxxiv.
- P. dorie*, Tuscany, MANTERO, p. 453, Ann. Mus. Genova xli; *P. poultoni*, Majorca, SAUNDERS, p. 600, Tr. ent. Soc. London 1904; *P. guimarensis*, Tenerife, SAUNDERS, p. 200, Ent. Mag. xl; *P. bifusciatus*, Cameroons, TULLGREN, p. 441, pl. xxiii, fig. 6, Arkiv Zool. i; *P. suspectus*, Cambodia, pl. xii, fig. 4, p. 200, SAUSSURE, Mission Pavie iii; *P. spilopterus*, p. 496, *phœnicogaster*, p. 497, *tobarum*, p. 498, *autrani*, p. 499, *hermannii*, p. 501, *yanketruz*, p. 502, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**

- Prionocnemis parcedentatus*, Tonkin, pl. xii, fig. 3, p. 200, SAUSSURE, Mission Pavie iii ; *P. australis*, p. 490, *pampicola*, *fratellus*, *atelerythrus*, p. 491, *tenuis*, *ignitus*, *fidanza*, p. 492, *nigrorufus*, *carbonarius*, *silvicola*, p. 493, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Psen rufobalteata*, Khasia hills, CAMERON, p. 219, Ann. Nat. Hist. xiii, **n. sp.**
- Pseudagenia longitarsis*, p. 135, *robusta*, p. 136, *iridipennis*, *æthiopica*, p. 137, Cape Colony, CAMERON, Rec. Albany Mus. i ; *P. lepcha*, N. India, CAMERON, p. 291, Ann. Nat. Hist. xiii ; *P. unifasciata*, Philippines, ASHMEAD, p. 7, J. N. York Ent. Soc. xii : **n. spp.**
- Pseudelaphroptera flavomaculata*, Chile, ANDRÉ, p. 311, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Pseudomethoca herbsti*, Chile, ANDRÉ, p. 284, t. c. **n. sp.**
- Pseudosalius n. g.* for *Salius bipartitus* Lep., ASHMEAD, p. 132, P. U. S. Mus. xxviii.
- Pycnomutilla n. g.* type *M. waco* Bl., ASHMEAD, p. 8, Canad. Ent. xxxvi.
- Reedia n. g.* type *Mutilla atripennis* Spin., ASHMEAD, p. 9, t. c. ; *Reedia*, characters, p. 288, *R. gayi* ♂, p. 305, ANDRÉ, Zeitschr. Hym. Dipt. iv.
- Rhopalum albocollare*, Manila, ASHMEAD, p. 130, P. U. S. Mus. xxviii ; *R. patagonicum*, p. 470, *lynchii*, p. 471, Argentina, HOLMBERG, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Salius ochropus* Stål., description, p. 435, pl. xxii, fig. 1, TULLGREN, Arkiv Zool. i ; *S. fulgidipennis* to *Pallosoma*, ASHMEAD, p. 132, P. U. S. Mus. xxviii.
- S. trichiosoma*, p. 289, *frederici*, p. 290, *lugubrinus*, p. 291, N. India, CAMERON, Ann. Nat. Hist. xiii ; *S. æneus*, Sikkim, CAMERON, p. 10, Zeitschr. Hym. Dipt. iv ; *S. pavianus*, Cambodia, pl. xii, figg. 1, 2, p. 199, SAUSSURE, Mission Pavie iii : **n. spp.**
- Sapyga wagneriella*, Minas Geraes, DU BUYSSON, p. 146, Bull. Soc. ent. France 1904, **n. sp.**
- Schizanoptilus n. g.* *Ceropalina*, p. 125, *S. violaceipennis n. sp.*, Cape Colony, p. 126, CAMERON, Rec. Albany Mus. i.
- Scolia*, notes on species from Java etc., TULLGREN, pp. 465–472, Arkiv Zool. i ; *S. erythrogaster*, p. 459, *leonina*, p. 461, identified and redescribed, TULLGREN, t. c.
- S. (Eliis) propinqua*, p. 432, *deserta*, *æthiopica*, p. 433, Cameroons, TULLGREN, Arkiv Zool. i ; *S. magnificus*, p. 437, pl. xxii, fig. 2, *nigricans*, fig. 3, p. 438, *S. (Cyphonyx) camerunensis*, pl. xxiii, fig. 4, p. 439, *nigricornis*, fig. 5, p. 440, Cameroons, TULLGREN, Arkiv Zool. i ; *S. (Discolia) erythrotrichia*, N. India, CAMERON, p. 9, Zeitschr. Hym. Dipt. iv ; *S. (Triscolia) triangulifer*, p. 466, *S. (Discolia) billitonensis*, p. 467, *S. (Dielis) simillima*, p. 470, *fumata*, p. 471, Java, TULLGREN, Arkiv Zool. i ; *S. manila*, Philippines, ASHMEAD, p. 8, J. N. York Ent. Soc. xii : **n. spp.**
- Solenius*, note on habits, KOPP, pp. 348–350, Jahresh. Ver. Wurttemb. lx.
- Soleriella canariensis*, Tenerife, SAUNDERS, p. 201, Ent. Mag. xl ; *S. amazonica*, Alemquer, DUCKE, p. 96, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Stenocrabro nelli*, p. 241, *flavitrochantericus*, p. 242, N. America, VIERECK, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Stizus pæcilopterus* ♂, MORICE, p. 2, Jägerskiöld exp. No. 14 ; *S. tridens* and *cyanescens*, SCHULZ, p. 95, Zeitschr. Ent. Breslau xxix.
- Tachysphex tinctipennis*, N. India, CAMERON, p. 301, Ann. Nat. Hist. xiii ; *T. propinquus*, Arizona, VIERECK, p. 87, Ent. News Philad. xv : **n. spp.**
- Tachytes rufipalpis*, p. 296, *assamensis*, *fulvopilosa*, p. 297, *fulvovestita*, p. 298, *maculipennis*, p. 299, N. India, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
- Thyreosphex n. g.* near *Tachysphex*, *T. stantoni n. sp.*, Philippines, ASHMEAD, Canad. Ent. xxxvi.

- Tiphia clarinerva*, p. 281, *himalayensis*, p. 282, *robusta*, p. 283, *denticula*, p. 284, *tuberculata*, p. 285, *fulvinerva*, p. 286, *simlaensis*, p. 287, *quinquecarinata*, p. 288, N. India, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
- Trachypus martialis*, Argentina, HOLMBERG, p. 489, An. Mus. Buenos Aires (3) ii, **n. sp.**
- Trypoxylon foveatum*, Cape Colony, CAMERON, p. 139, Rec. Albany Mus. i; *T. plucidum*, p. 216, *fulvocollare*, p. 217, *hasia*, *orientale*, p. 218, N. India, CAMERON, Ann. Nat. Hist. xiii; *T. philippinensis*, Manila, ASHMEAD, p. 283, Canad. Ent. xxxvi : **n. spp.**

FORMICIDÆ (or HETEROGYNA).

- [Cf. COOK (309-311), EMERY (452, 453), FIELDE (501-507), FIELDE & PARKER (508), FOREL (523-532), HOLMGREN (701), MAYR (927, 928), MUCKERMANN (968), RUZSKY (1202), WASMANN (1481, 1483, 1484, 1484A), WELLENUS (1508), WHEELER (1517-1523).]
- Comparison of forms of *Dorylinae* and limits of the family, EMERY, Arch. zool. ital. ii, pp. 107-116, cuts.
- New inquiline and ♂ ergatoid ants, WHEELER, Bull. Amer. Mus. xx, pp. 1-17.
- Polymorphism discussed, EMERY (452), FOREL (525).
- Mental capacities of Ants, WASMANN (1483).
- For various papers on habits of ants see p. 87, Ethology.
- Mounds in swamps due to *Formica exsecta*, HOLMGREN, pp. 353-370, cuts, Zool. Jahrb. Syst. xx.
- Portable nests, instructions for making, FIELDE (505).
- Acanthostichus texanus*, Brownsville, FOREL, p. 168, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Anochetus traogaordhi*, Khartoum, MAYR, p. 2, Jägerskiöld exp. No. 9, **n. sp.**
- Anomina emeryi* var. n. *pulsi*, FOREL, p. 170, Ann. Soc. ent. Belgique xlviii.
- Atta cephalotes* varr. n. *opaca*, *integrrior*, p. 31, *A. rugosa* var. n. *rochai*, p. 34, FOREL, Rev. Suisse Zool. xii; *A. coronata*, worker, FOREL, p. 176, Ann. Soc. ent. Belgique xlviii.
- A. (Acromyrmex) emilii*, Para, FOREL, p. 32, Rev. Suisse Zool. xii, **n. sp.**
- Azteca schumanni* var. n. *tédiosa*, p. 42, *festai subdentata* and *mediops* subspp. n. p. 43, *chartifex* var. n. *decipiens*, *alfaroi* var. n. *oraticeps*, p. 44, *velox paraensis* subsp. n. p. 45, FOREL, t. c.; *A. alfari æquilata* var. n. p. 691, *traili filicis* var. n. p. 692, *traili tococæ* var. n. p. 693, *longiceps juruensis* var. n. p. 699, FOREL, Zool. Jahrb. Syst. xx.
- A. olitrix*, p. 693, *ulei*, p. 694, with varr. n. *cordiæ* and *nigricornis*, p. 695, *minor*, p. 696, *duroicæ*, p. 697, *emeryi*, p. 698, *coussapoæ*, p. 700, *tachigalia*, p. 701, Amazons, *emmae*, Costa Rica, p. 702, FOREL, t. c. **n. spp.**
- Camponotus maculatus* var. n. *atramentarius*, p. 379, *herculeanus* var. n. *sachalinensis*, p. 381, FOREL, Annuaire Mus. St. Petersb. viii; *C. maculatus* var. n. *cachmiriensis*, FOREL, p. 29, Rev. Suisse Zool. xii; *C. hyatti* var. n. *bakeri*, WHEELER, p. 271, Bull. Amer. Mus. xx; *C. maculatus sanctus* n. st., FOREL, p. 18, Rev. Suisse Zool. xii; *C. maculatus ballioni* n. st., FOREL, p. 176, Ann. Soc. ent. Belgique xlviii, *C. maculatus xerxes* n. st., FOREL, p. 424, t. c., *C. herculeanus* var. *whymperi*, characters, FOREL, p. 152, t. c.; *C. senex*, using larva, p. 45, *C. urichii* var. n. *sculna* and subsp. n. *folicola*, p. 46, *melanoticus* a valid species, p. 49, *C. integellus*=(*rudigenis* Em.), *femoratus* redescribed, p. 49, *novogranadensis* var. n. *modestior*, *rectangularis* var. n. *setipes*, p. 51, FOREL, Rev. Suisse Zool. xii.
- C. socrates*, N. India, FOREL, p. 27, t. c.; *C. ulei*, Peru, FOREL, p. 706, Zool.

- Jahrb. Syst. xx; *C. amoris*, Amazons, FOREL, p. 51, Rev. Suisse Zool. xii : **n. spp.**
- Cardiocondyla nuda*, ergatomorph ♂, ♀, FOREL, p. 7, t. c.
- Carebara sicheli* redescribed, MAYR, p. 596, Verh. Ges. Wien liv.
- C. junodi*, Africa, FOREL, p. 154, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Colobopsis*, or stopper-headed ants, account of, FOREL, pp. 139–158, cuts, *C. abditus* var. *n. etiolatus*, p. 150, WHEELER, Bull. Amer. Mus. xx.
- C. pylartes*, Texas, WHEELER, p. 147, t. c. **n. sp.**
- Cremastogaster stollii amazonensis* var. *n.* p. 682, *C. limata parabiatica* subsp. *n.* p. 683, FOREL, Zool. Jahrb. Syst. xx; *C. dalyi* var. *n. sikkimensis*, FOREL, p. 24, Rev. Suisse Zool. xii, *C. inermis lucida* ♂, FOREL, p. 6, t. c., *C. longispina tenuicola* subsp. *n.* p. 36, *distans paraensis* *n. st.* p. 37, FOREL, t. c.
- C. binghamii*, Sikkim, FOREL, p. 24, t. c., *C. pygmæa*, Ceara, FOREL, p. 37, t. c. : **n. spp.**
- Cryptocerus complanatus ramiphilus* subsp. *n.*, FOREL, p. 678, Zool. Jahrb. Syst. xx.
- Dolichoderus plagiatus* var. *n. beutenmulleri*, WHEELER, p. 304, Bull. Amer. Mus. xx.
- Dorylus nigricans* varr. p. 671, *fulvus dentifrons* subsp. *n.* p. 673, WASMANN, Zool. Jahrb. Suppl. vii.
- D. (Anomma) kohli*, Congo, WASMANN, p. 669, t. c. **n. sp.**
- Dorymyrmex goldii*, Para, FOREL, p. 41, Rev. Suisse Zool. xii; *D. antarcticus*, Patagonia, FOREL, p. 6, Hamburg. Magalhaen. Reise vii : **n. spp.**
- Eciton selysi*, Brazil, FOREL, p. 169, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ectatomma ferrugineum*, pupation, COOK, p. 310, and WHEELER, pp. 437–440, Science xx.
- Epipheidole n. g.* near *Pheidole*, p. 14, *E. inquilina* **n. sp.**, Colorado, p. 15, WHEELER, Bull. Amer. Mus. xx.
- Euponera (Mesoponera) sulcigera*, Cape colony, MAYR, p. 593, Verh. Ges. Wien liv, **n. sp.**
- Formica fusca* var. *n. rubescens*, FOREL, p. 423, Ann. Soc. ent. Belgique xlviii; *F. rufa* var. *n. whymperi*, p. 152, *dacotensis* var. *n. wasmanni*, p. 153, FOREL, t. c.; *F. pallidefulva* varr. *n. succinea*, p. 369, *meridionalis*, p. 370, *F. difficilis* var. *n. consocians*, p. 371, *F. microgyna* var. *n. nevadensis*, p. 373, WHEELER, Bull. Amer. Mus. xx; *F. rubicunda*, pseudogynes and *Xenodusa*, MUCKERMANN, Ent. News Philad. xv, pp. 339–341, pl. xx; *F. sanguinea*, habits, WASMANN (1484).
- F. adelungi*, Gobi desert, FOREL, p. 385, Annuaire Mus. St. Petersb. viii; *F. montigena*, Colorado, WHEELER, p. 374, Bull. Amer. Mus. xx : **n. spp.**
- Iridomyrmex anceps* var. *n. sikkimensis*, FOREL, p. 27, Rev. Suisse Zool. xii.
- Lasius niger* var. *n. flavescens*, FOREL, p. 386, Annuaire Mus. St. Petersb. viii.
- Leptanilla*, affinities, EMERY, pp. 107–116, Arch. Zool. ital. ii.
- Leptogenys elongata*, characters and habits, WHEELER, Biol. Bull. vi, pp. 251–259.
- Leptothorax bulgaricus* var. *n. melleus*, FOREL, p. 375, Annuaire Mus. St. Petersb. viii; *L. unifasciatus* var. *n. tauricus*, RUZSKY, p. 22, Protok. Kazan Univ. 1902, 1903, No. 206; *L. rothneyi* var. *n. simlensis*, FOREL, p. 22, Rev. Suisse Zool. xii; *L. tuberum* var. *n. dichroa*, EMERY, p. 452, Ann. Mus. Genova xli.
- L. alpinus*, Caucasus. RUZSKY, p. 22, Protok. Kazan Univ. 1902, 1903, No. 6; *L. wroughtonii*, N. India, FOREL, p. 22, Rev. Suisse Zool. iii : **n. spp.**
- Megalomyrmex emeryi*, Surinam, FOREL, p. 174, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Melophorus sauberi*, Patagonia, p. 4, *valdiviensis*, Chile, p. 6, FOREL, Hamburg. Magalhaen. Reise vii, **n. spp.**

- Monomorium minutum ergatogyna* subsp. n., WHEELER, p. 269, Bull. Amer. Mus. xx; *M. denticulatum* var. n. *navarinensis*, FOREL, p. 7, Hamburg. Magalhaen. Reise vii.
- M. luisæ*, Kashmir, FOREL, p. 25, Rev. Suisse Zool. xii, **n. sp.**
- Myrmecocystus viaticus* varr. n. *abyssinicus* and *adenensis*, FOREL, p. 382, Annuaire Mus. St. Petersb. viii.
- Myrmelachista ruzskyi* for *ruszkii*, FOREL, p. 1, Rev. Suisse Zool. xii.
- M. ulei*, Peru, *chilensis*, p. 704, *rectinota*, p. 705, Chile, FOREL, Zool. Jahrb. Syst. xx, **n. spp.**
- Myrmica rubra* varr. n. *whymperi*, *glacialis*, FOREL, p. 154, Ann. Soc. ent. Belgique xlviii; *M. rubra* var. n. *tenuispina*, FOREL, p. 374, Annuaire Mus. St. Petersb. viii; *M. smythiesii* varr. n. *fortior*, p. 22, *lutescens*, p. 23, FOREL, Rev. Suisse Zool. xii.
- Oxyopomyrmex santschii*, Kairouan, FOREL, p. 8, nest and habits, p. 10, t. c. **n. sp.**
- Paltothyreus tarsatus*, offensive odour, POULTON, p. xl, P. ent. Soc. London 1904.
- Pheidole sinaitica laticeps* subsp. n., MAYR, p. 6, Jägerskiöld exp. No. 9; *P. minutula folicola* subsp. n., FOREL, p. 681, Zool. Jahrb. Syst. xx; *P. ursus* var. n. *gracilinoda*, FOREL, p. 172, Ann. Soc. ent. Belgique xlviii; *P. megacephala* subsp. n. *impressifrons* (*impressiceps*, p. 72, altered p. 110), WASMANN, Notes Leyden Mus. xxv.
- P. termitophila*, Soudan, FOREL, p. 13, Jägerskiöld exp. No. 13; *P. ceres*, Colorado, WHEELER, p. 10, Bull. Amer. Mus. xx; *P. severini*, Cayenne, FOREL, p. 171, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Plagiolepis brunni* var. n. *nilotica*, MAYR, p. 7, Jägerskiöld exp. No. 9.
- P. deweti*, Natal, FOREL, p. 423, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Podomyrma silvicola* var. n. *dimidiata*, FOREL, p. 170, t. c.
- Pogonomyrmex occidentalis*, œcological note, POPENOE, p. 360, Canad. Ent. xxxvi.
- Polyrhachis gracilis alata*, worker, FOREL, p. 177, Ann. Soc. ent. Belgique xlviii.
- P. menelas*, Simla, FOREL, p. 30, Rev. Suisse Zool. iii, **n. sp.**
- Ponera eduardi*, apterous male, FOREL, p. 421, Ann. Soc. ent. Belgique xlviii.
- Prenolepis jägerskiöldi*, Cairo, MAYR, p. 8, Jägerskiöld exp. No. 9; *P. tragaordhi*, Soudan, FOREL, p. 14, Jägerskiöld exp. No. 13 : **n. spp.**
- Procryptocerus hirsutus convexus* subsp. n., FOREL, p. 34, Rev. Suisse Zool. xii.
- Pseudomyrma*, Smith's species irrecognisable, p. 683, *P. dendroica emarginata* var. n. p. 684, *latinoda tachigaliae* subsp. n. p. 686, *caroli sapii* var. n. p. 688, *sericea* varr. n. *cordiae* and *longior*, p. 690, FOREL, Zool. Jahrb. Syst. xx; *P. latinoda* var. n. *nigrescens*, *P. arborissanctæ symbiotica*, p. 38, *P. kunckeli* var. n. *dichroa*, p. 41, FOREL, Rev. Suisse Zool. xii; *P. latinoda* var. n. *opacior*, FOREL, p. 170, Ann. Soc. ent. Belgique xlviii.
- P. triplaridis*, p. 684, *ulei*, p. 689, Amazons, FOREL, Zool. Jahrb. Syst. xx; *P. dendroica*, Amazons, FOREL, p. 40, Rev. Suisse Zool. xii : **n. spp.**
- Rhopalothrix procera* var. n. *ballioni*, FOREL, p. 175, Ann. Soc. ent. Belgique xlviii.
- Sima sahlbergi* var. n. *deplanata*, FOREL, p. 375, Annuaire Mus. St. Petersb. viii.
- Solenopsis texana catalinae*, subsp. n., WHEELER, p. 269, Bull. Amer. Mus. xx; *S. corticalis amazonensis* subsp. n., FOREL, p. 680, Zool. Jahrb. Syst. xx; *S. corticalis* var. n. *virgula*, *S. geminata pylades* subsp. n., FOREL, p. 172, Ann. Soc. ent. Belgique xlviii; *S. geminata*, ravages in Porto Rico, BARRETT, Bull. Dep. Agric. Jamaica ii, p. 204.
- S. moelleri*, Blumenau, p. 173, with var. *gracilior*, p. 174, FOREL, Ann. Soc. ent. Belgique xlviii, **n. sp.**

- Stenammas barbarus* var. n. *persicus*, FOREL, p. 175, t. c. ; *S. patrule bakeri* subsp. n., WHEELER, p. 270, Bull. Amer. Mus. xx.
- S. (Messor) bugnioni*, Biskra, FOREL, p. 13, Rev. Suisse Zool. xii, **n. sp.**
- Strongylognathus christophi* var. n. *rehbinderi*, a slave-making expedition, pp. 2-4, FOREL, t. c.
- Strumigenys membranifera* var. n. *santschii*, FOREL, p. 6, t. c.
- S. ludovici*, Madagascar, FOREL, p. 369, Annuaire Mus. St. Petersb. viii, **n. sp.**
- Symmyrmica* **n. g.** near *Formicoxenus*, p. 3, *S. chamberlini* **n. sp.**, Colorado, p. 5, WHEELER, Bull. Amer. Mus. xx.
- Sympheisole* **n. g.** p. 7, *S. elecebra* **n. sp.**, Colorado, p. 8, WHEELER, t. c.
- Tapinoma erraticum israelis* subsp. n., FOREL, p. 16, Rev. Suisse Zool. xii.
- T. wroughtonii*, N. India, FOREL, p. 26, t. c., *T. antarcticum*, Chile, FOREL, p. 17, t. c. : **n. spp.**
- Tetramorium cespitum* var. n. *splendens*, RUZSKY, p. 33, Protok. Kazan Univ. 1902, 1903, No. 6 ; *T. cespitum* var. n. *biskrensis*, FOREL, p. 13, t. c., *T. cespitum* var. n. *schmidtii*, FOREL, p. 15, t. c. ; *T. cespitum* var. n. *forte*, FOREL, p. 371, Annuaire Mus. St. Petersb. viii.
- T. elizabethæ*, Sind, FOREL, p. 20, Rev. Suisse Zool. xii, **n. sp.**
- Tomognathus sublaevis*, habits, WELLENIIUS, pp. 70-72, Medd. Soc. Faun. Fenn. 1902/1903.

CHRYSIDÆ.

[Cf. ASHMEAD (44), DU BUYSSON (217), DUCKE (412), GARCIA (585, 586), MOCSÁRY (952), NURSE (986), VIERECK (1447).]

Annotated list and table of genera and species of *Chrysid.* observed at Parà, DUCKE, pp. 13-48, Bull. Soc. ent. ital. xxxvi.

Chrysis succincta varr. n. *ignifacies* and *alicantina*, GARCIA, p. 86, Bol. Soc. espan. iv ; *C. acceptabilis*=(*thalia* Nurse), NURSE, p. 19, J. Bombay Soc. xvi ; *C. chlorochrysa*=(*subcaerulea* Rad.=*hoggei* Nurse), NURSE, p. 21, t. c.

C. (Tetrachrysis) escalerae, Akbès, p. 87, *C. (Hexachrysis) dusmeti*, Cairo, p. 88, GARCIA, Bol. Soc. espan. iv ; *C. (Holoachrysis) modesta*, p. 404, *auronitens*, *pleuralis*, p. 405, *C. (Tetrachrysis) cylindracea*, p. 406, *gazella*, p. 407, *chalcogaster*, p. 408, *eusoma*, p. 409, *cyanops*, p. 410, *callizona*, p. 411, *grata*, p. 412, S. Africa, MOCSÁRY, Ann. Mus. Hungar. ii ; *C. sara*, p. 20, *deposita*, p. 21, *urana*, *reparata*, p. 22, Quetta, NURSE, J. Bombay Soc. xvi ; *C. ceciliae*, Java, p. 259, *ruppelli*, Abyssinia, *jheringi*, Brazil, p. 260, *tellini*, *scabiosa*, E. Africa, p. 262, *districta*, W. Africa, p. 263, *goyasensis*, *myops*, p. 264, *ypirangensis*, p. 265, S. America, *alfkenella*, California, p. 266, *kathederi*, Turkey, p. 269, *rubropicta*, Abyssinia, p. 270, *alluaudi*, Madagascar, p. 272, BUYSSON, Rev. Ent. franc. 1904 : **n. spp.**

Chrysogona silvestrii, S. America, DUCKE, p. 32, Bull. Soc. ent. ital. xxxvi, **n. sp.**

Cleptes nigrata, Spain, GARCIA, p. 83, Bol. Soc. espan. iv, **n. sp.**

Cleptidea **n. g.** for *Cleptes aurora*, *mutilloides*, *fasciata*, *xanthomelæna*, MOCSÁRY, p. 567, Ann. Mus. Hungar. ii.

Ellampus hypocrita=(*timidus* Nurse), NURSE, p. 19, J. Bombay Soc. xvi.

Euchraides **n. g.** *oblatus* **n. sp.**, Quetta, NURSE, p. 23, t. c.

Hedychridium, table of Spanish, *H. minutum* var. n. *melanogaster*, p. 146, GARCIA MERCET, pp. 144-152, Bol. Soc. espan. iv.

H. auriventris, Spain, GARCIA, p. 85, t. c. ; *H. dubium*, Segovia, GARCIA MERCET, p. 147, t. c. ; *H. andreinii*, Erythraea, *moriceii*, Zante, DU BUYSSON, p. 256, Rev. Ent. franc. 1904 ; *H. amatum*, p. 19, *rotundum*, p. 20, Deesa, NURSE, J. Bombay Soc. xvi : **n. spp.**

- Hedychrum alluaudi*, Madagascar, BUYSSON, p. 258, Rev. Ent. franc. 1905 ;
H. stantoni, Philippines, ASHMEAD, p. 283, Canad. Ent. xxxvi : **n. spp.**
Holopyga gloriosa var. *n. intermedia*, GARCIA, p. 85, Bol. Soc. espan. iv.
H. wagneriella, Argentina, DU BUYSSON, p. 255, Rev. Ent. franc. 1904,
n. sp.
Notozus violascens (= *kashmirensis* Nurse), NURSE, p. 19, J. Bombay Soc. xvi.
N. decorsei, Centr. Africa, DU BUYSSON, p. 253, Rev. Ent. franc. 1904, **n. sp.**
Parnops oberthuri, Silvapoor, p. 273, *digueti*, Mexico, p. 274, BUYSSON,
 Rev. Ent. franc. 1904 ; *P. hageni*, p. 246, *henshawi*, p. 247, *concinna*,
diadema, p. 248, *teniata*, *arizonensis*, p. 249, *excurvata*, p. 250,
 N. America, VIERECK, Tr. Amer. ent. Soc. xxx : **n. spp.**
Spintharis bispinosa ♂, MOSCÁRY, p. 404, Ann. Mus. Hungar. ii.
Stilbum cyanurum, note, TULLGREN, p. 426, Arkiv Zool. i.

HYMENOPTERA PARASITICA.

- Guests in Italian galls, *Hymenoptera*, STEGAGNO, Marcellia iii, pp. 27-44,
 and 51-52.
 Parasites, list of, with hosts, JACOBS, p. 308, Ann. Soc. ent. Belgique xlviii.

ICHNEUMONIDÆ.

- [Cf. ASHMEAD (43, 45, 47, 48), BERTHOUMIEU (110-113), BRADLEY (164),
 BUGNION (198, 199), CAMERON (224-226, 230-233, 237, 239, 241),
 ENDERLEIN (465), FELT (495 A), FYLES (575), KOKUJEV (826-828),
 KRIEGER (845), ROMAN (1186, 1187), SCHMIEDEKNECHT (1231), STROBL
 (1350), SZÉPLIGETI (1366), VIERECK (1452).]
 The genera of the subfam. *Ichneumoninae* revised, and their species listed,
 BERTHOUMIEU, Wytsman Gen. ins. fasc. xviii.
 STROBL concludes his Catalogue of the *Ichneumonidæ* of Styria, 1206 spp.
 of which 165 are new, Mt. Ver. Steiermark xl, pp. 43-160.
 The stalked eggs and oviposition of *Rhyssa*, BUGNION, Bull. Soc. Vaudoise
 xl, pp. 245-249, pl. xl, and Bull. Soc. ent. France 1904, pp. 80-83, cuts.
Acanthocryptus nigriceps ♀, STROBL, p. 148, Mt. Ver. Steiermark xl.
Aconias **n. g.** *Cryptini*, p. 345, *A. spinitarsis* **n. sp.**, Darjeeling, p. 346,
 CAMERON, Zeitschr. Hym. Dipt. iv.
Acronus saliformis, p. 67, *niger*, *auritus*, p. 68, Trop. Africa, ENDERLEIN,
 Zool. Anz. xxviii, **n. spp.**
Agrothereutes unifasciatus, *albicovis*, Manila, ASHMEAD, p. 142, P. U. S.
 Mus. xxviii, **n. spp.**
Algathia rufopetiolata, p. 222, *tibialis*, p. 223, *latibalteata*, p. 224, *rufipes*,
 p. 225, *erythropoda*, p. 226, *varipes*, p. 227, *rothneyi*, p. 228, *robusta*,
 p. 229, *flavobalteata*, p. 230, *femorata*, p. 231, *cariniscutis*, p. 232,
 Khasia hills, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
Allexetastes **subg. n.** cf. *Exetastes*.
Alystria **n. g.** p. 340, *A. curvilineata* **n. sp.**, p. 341, Darjeeling, CAMERON,
 Zeitschr. Hym. Dipt. iv.
Amblyteles chalybeatus, characters, ROMAN, p. 139, Ent. Tidskr. xxv.
A. styriacus, p. 144, *denticornis*, p. 146, Styria, STROBL, Mt. Ver. Steiermark
 xl ; *A. catagraphus*, Setschuan, KOKUJEV, p. 11, Rev. Russe ent. iv :
n. spp.
Amesolytus pictus, N. America, FYLES, p. 207, cut, Canad. Ent. xxxvi, **n. sp.**
Angitia anthrocostoma, p. 85, *laricinella* (= *nana* Ratz. nec Gr.), p. 86,
novakii, p. 87, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
Anilasta rufocincta var. *n. maculipes*, STROBL, p. 90, t. c.
A. nigromaculata, p. 88, *calcanea*, p. 90, Styria, STROBL, t. c. **n. spp.**
Aniseres subalpinus, Admont, STROBL, p. 138, t. c. **n. sp.**

- Anisobas tschitscherini*, Transcaucasus, KOKUJEV, p. 199, Rev. Russe Ent. iv, **n. sp.**
- Anomalon debile*, *varitarsum*, distinguished, p. 173, *A. delarvatum* and *trochanteratum*, p. 174, KRIEGER, Zeitschr. Hym. Dipt. iv.
- Apæleticus brevicornis* ♀, *inclytus* ♀, BERTHOUMIEU, p. 14, Echange 1904.
- Aperileptus inamœnus*, var. ? *trivittatus* var. n., STROBL, p. 120, Mt. Ver. Steiermark xl.
- A. minimus*, p. 121, *rufus*, p. 122, *nigrovittatus*, p. 123, *nigricarpus*, p. 124, Styria, STROBL, t. c. **n. spp.**
- Astomaspis metathoracica*, Manila, ASHMEAD, p. 140, P. U. S. Mus. xxxviii, **n. sp.**
- Atrometus minutus*, Manila, ASHMEAD, p. 144, t. c. **n. sp.**
- Atrophæa clypearia*, Manila, ASHMEAD, p. 143, t. c. **n. sp.**
- Barichneumon heracleæ* ♂, MORLEY, p. 37, Ent. Mag. xl.
- Bassus pulchellus* var. n. *alpigena*, STROBL, p. 156, Mt. Ver. Steiermark xl.
- Bathrythrix striatus*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Blaptichus xanthocephalus*, Admont, STROBL, p. 113, Mt. Ver. Steiermark xl, **n. sp.**
- Cænocryptus remex* Tschek, habits, = (*laticrus* Thoms.), PFANKUCH, p. 225, Zeitschr. Hym. Dipt. iv.
- Camarota madagascariensis*, Madagascar, SZÉPLIGETI, p. 336, Bull. Mus. Paris ix, **n. sp.**
- Campoplex polyxanthus*, p. 59, *rufiventris*, p. 61, *alpinus*, p. 621, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Casiniaria arvensis* ♀, STROBL, p. 71, t. c.
- C. cingulata*, Styria, STROBL, p. 68, t. c. **n. sp.**
- Catadelphus dusmeti*, Escorial, BERTHOUMIEU, p. 161, Bol. Soc. espan. iv, **n. sp.**
- Catomicrus alpigenus*, Styria, STROBL, p. 116, Mt. Ver. Steiermark xl, **n. sp.**
- Charops decipiens* var. n. *nigropetiolatus*, STROBL, p. 65, t. c.
- Cidaphurus flavomaculatus*, Simla, CAMERON, p. 346, Zeitschr. Hym. Dipt. iv, **n. sp.**
- Cœlichneumon derasus* var. n. *pictus*, ROMAN, p. 115, Ent. Tidskr. xxv.
- Cœlojoppa* **n. g.**, p. 163, *C. cariniscutis* **n. sp.**, Darjeeling, p. 208, CAMERON, Entomologist 1904.
- Colpomera flava*, Philippines, ASHMEAD, p. 284, Canad. Ent. xxxvi, **n. sp.**
- Cratichneumon* (*Melanichneumon*) *cæsareus*, Siberia, ROMAN, p. 146, Ent. Tidskr. xxv; *C. rubicundus*, p. 106, *davisi*, p. 107, N. America, BRADLEY, Zeitschr. Hym. Dipt. iv : **n. spp.**
- Cremastus dalmatinus*, Dalmatia, STROBL, p. 92, Mt. Ver. Steiermark xl, **n. sp.**
- Cryptus verticalis* Bingh. to *Agrothereutes*, *C. præpes* Bingh. to *Microcryptus*, ASHMEAD, p. 142, P. U. S. Mus. xxviii.
- C. capensis*, Cape Colony, CAMERON, p. 142, Rec. Albany Mus. i; *C. rufopetiolatus*, p. 105, *himalayensis*, *bibulus*, p. 106, Assam, CAMERON, Tr. ent. Soc. London 1904 : **n. spp.**
- Darpasus* **n. g.** *Amblypygi*, *D. pilosus* **n. sp.**, Himalaya, CAMERON, p. 344, Zeitschr. Hym. Dipt. iv.
- Darymna* **n. g.** p. 224, *D. pleuralis* **n. sp.**, Darjeeling, p. 337, CAMERON, t. c.
- Diatora prodeniæ*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Enicospilus*, the North American, FELT, pp. 107-113, Bull. New York Mus. lxxvi; *E. unicallosus* ♀, STROBL, p. 54, Mt. Ver. Steiermark xl.
- E. ashbyi*, Philippines, ASHMEAD, p. 17, J. N. York Ent. Soc. xii, **n. sp.**
- Entypoma rugosissimum*, Styria, STROBL, p. 114, Mt. Ver. Steiermark xl, **n. sp.**
- Ephialtes carbonarius*, metamorphosis, XAMBEU, p. 170, Ann. Soc. Linn. Lyon l.

- E. tschitscherini*, Ural, KOKUJEV, p. 200, Rev. Russe Ent. iv, **n. sp.**
Epiurus carpocapsæ, St Petersburg, ASHMEAD, p. 102, Canad. Ent. xxxvi, **n. sp.**
Eremotylus, the North American, FELT, Bull. New York Mus. lxxvi, pp. 101–107.
Eristicus iridipennis, Cape Colony, CAMERON, p. 142, Rec. Albany Mus. i, **n. sp.**
Etha lacteiventris, *khasiana*, Assam, CAMERON, p. 103, Tr. ent. Soc. London 1904, **n. sp.**
Euryproctus albopictus var. *n. alpina*, STROBL, p. 154, Mt. Ver. Steiermark xl.
Eusterinx hirticornis, Admont, STROBL, p. 117, t. c. **n. sp.**
Exetastes csikii var. *n. signata*, KOKUJEV, p. 108, Rev. Russe Ent. iv.
E. illyricus, Styria, STROBL, p. 45, Mt. Ver. Steiermark xl; *E. (Allexetastes* subg. *n.) komarovi*, p. 106, *coreanus*, p. 107, Corea, KOKUJEV, Rev. Russe Ent. iv : **n. spp.**
Exochus multicinctus, Admont, STROBL, p. 156, Mt. Ver. Steiermark xl, **n. sp.**
Fasula n. g. F. maculata n. sp., Himalaya, CAMERON, p. 338, Zeitschr. Hym. Dipt. iv.
Friona varipes, p. 107, *frontella*, p. 108, *curvicarinata*, p. 109, Assam, CAMERON, Tr. ent. Soc. London 1904, **n. spp.**
Gabunia Kriechb. = (*Nadia* Tosq.), KRIEGER, p. 172, Zeitschr. Hym. Dipt. iv.
Genophion n. g. gilletti, p. 123, *coloradensis*, p. 124, **n. spp.**, N. America, FELT, Bull. New York Mus. lxxvi.
Gotra fulvipes, Assam, CAMERON, p. 104, Tr. ent. Soc. London 1904, **n. sp.**
Habrocryptus granicheri, Wisconsin, VIERECK, p. 333, Ent. News Philad. xv, **n. sp.**
Hadrojoppa fumipennis, N. India, CAMERON, p. 278, Ann. Nat. Hist. xiii, **n. sp.**
Haliphera flavomaculata, Darjeeling, CAMERON, p. 306, Entomologist 1904, **n. sp.**
Hedyjoppa n. g. p. 219, *H. aurantacea n. sp.*, Darjeeling, p. 220, CAMERON, Zeitschr. Hym. Dipt. iv.
Helictes nigricoxus, Admont, STROBL, p. 139, Mt. Ver. Steiermark xl, **n. sp.**
Hellwigia obscura ♂, STROBL, p. 49, t. c.
Hemiteles geniculatus, p. 110, *pulcherrimus*, *ornatitarsis*, p. 111, Assam, CAMERON, Tr. ent. Soc. London 1904, **n. spp.**
Heterischnus hispanicus, Ciudad-Real, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904, **n. sp.**
Holomeristus minimus, Styria, STROBL, p. 119, Mt. Ver. Steiermark xl, **n. sp.**
Hoplisis laticinctus, metamorphosis, XAMBEU, p. 172, Ann. Soc. Linn. Lyon l.
Hybophorus piceus, Caucasus, BERTHOUMIEU, p. 13, Echange 1904, **n. sp.**
Ichneumon haglundii var. *n. guttatus*, *I. thomsoni* var. *n. connectens*, p. 142, *I. gravipes* var. *n. pictus*, *I. melanobatus* var. *n. obscurior*, p. 143, ROMAN, Ent. Tidskr. xxv; *I. amphibolus*, characters, *I. didymus* ♂, ROMAN, p. 116, t. c.; *I. cerebrosus* var. *n. picticornis*, KOKUJEV, p. 82, Rev. Russe Ent. iv.
I. ambifarius, *sabaudus*, Haute Savoie, *tenuidens*, Croatia, BERTHOUMIEU, Echange 1904; *I. lateritius*, *reconditus*, Spain, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904; *I. sibiricus*, p. 139, *fuscipictus*, p. 144, Jenissei, ROMAN, Ent. Tidskr. xxv; *I. assimilis*, p. 80, *jakolevi*, p. 81, *versatilis*, p. 82, *areolaris*, *ermak*, p. 83, Irkutsk, KOKUJEV, Rev. Russe Ent. iv; *I. potanini*, p. 12, *gansuanus*, p. 13, *chinensis*, p. 14, W. China, KOKUJEV, t. c.; *I. rubriornatus*, Cape Colony, CAMERON, p. 141, Rec. Albany Mus. i : **n. spp.**

- Ischnogaster cabrerai*, Teneriffe, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904, **n. sp.**
- Joppoides n. g. xanthomelas* Tosq., BERTHOUMIEU, p. 23, Gen. Ins. fasc. 18.
- Lægula n. g. p. 341, L. annulata n. sp.*, Himalaya, p. 342, CAMERON, Zeitschr. Hym. Dipt. iv.
- Lamprocryptus n. g. p. 414*, SCHMIEDEKNECHT, Opusc. Ent.
- Laphyctes*, synonymy, KRIEGER, pp. 173, 174, Zeitschr. Hym. Dipt. iv.
- Leptobatus ziegleri* ♂, STROBL, p. 47, Mt. Ver. Steiermark xl.
- L. multiguttatus*, Styria, STROBL, p. 48, t. c. **n. sp.**
- Leptopygus stangli*, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc. xii, **n. sp.**
- Limneria africana*, Grahamstown, CAMERON, p. 175, Rec. Albany Mus. i, **n. sp.**
- Lissonota fletcheri* var. n. *breviventris*, STROBL, p. 152, Mt. Ver. Steiermark xl.
- L. curvilineata, africana*, Cape Colony, CAMERON, p. 147, Rec. Albany Mus. i, **n. spp.**
- Lobocryptus n. g. p. 414*, SCHMIEDEKNECHT, Opusc. Ent.
- Lodryca n. g. L. lineaticeps n. sp.*, Darjeeling, CAMERON, p. 223, Zeitschr. Hym. Dipt. iv.
- Lynteria n. g. p. 220, L. violaceipennis n. sp.*, Himalaya, p. 221, CAMERON, t. c.
- Marpelites n. g. near Listrognathus*, p. 144, *L. ruficollis n. sp.*, Cape Colony, p. 145, CAMERON, Rec. Albany Mus. i.
- Matara* Himg. near *Cressonianus*, characters, BRÈTHES, p. 335, An. Mus. Buenos Aires xi.
- Megastylus hirticornis*, Admont, STROBL, p. 141, Mt. Ver. Steiermark xl, **n. sp.**
- Meloboris alpina*, Edmont, STROBL, p. 82, t. c. **n. sp.**
- Mesochorus leucogrammus* var. n. *nigrocoxatus*, STROBL, p. 103, t. c. ; *M. confusus*, pl. v, figg. A, B, habits, p. 72, VAN ROSSUM, Tijdschr. Ent. xlvii.
- M. thomsoni* (= *nigriceps* Th. nec Br.), p. 103, *alpigenus*, p. 104, *jugicola*, p. 105, *macrocephalus*, p. 106, *longiceps*, p. 108, Styria, STROBL, Mt. Ver. Steiermark xl ; *M. philippinensis*, Manila, ASHMEAD, p. 144, P. U. S. Mus. xxviii : **n. spp.**
- Mesoleius flavipes* ♀, STROBL, p. 153, Mt. Ver. Steiermark xl.
- Mesostenoides octozonatus*, Manila, ASHMEAD, p. 143, P. U. S. Mus. xxviii ; *M. philippinensis*, Manila, ASHMEAD, p. 17, J. N. York Ent. Soc. xii : **n. spp.**
- Mesostenopsis n. g.*, SCHMIEDEKNECHT, p. 561, Opusc. Ent.
- Mesostenus oneili*, Cape Colony, CAMERON, p. 143, Rec. Albany Mus. i ; *M. respondens*, p. 112, *brahminus*, p. 113, *missippus*, p. 114, *clarinervis*, p. 115, *reticulatus, caligatus*, p. 116, *salutator*, p. 117, *versatilis*, p. 118, *maculiceps*, p. 119, Assam, CAMERON, Tr. ent. Soc. London 1904 : **n. spp.**
- Metopius erythropus*, Cape Colony, CAMERON, p. 148, Rec. Albany Mus. i, **n. sp.**
- Neomesostenus n. g.*, SCHMIEDEKNECHT, p. 562, Opusc. Ent.
- Neotypus cabrerai*, Teneriffe, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904, **n. sp.**
- Nepiesta jugicola*, p. 75, *rufocincta*, p. 76, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Ogulnia n. g. near Haliphera, O. fuscitarsis n. sp.*, Darjeeling, CAMERON, p. 343, Zeitschr. Hym. Dipt. iv.
- Ophion abnormum*, Colorado, p. 121, *ferruginipennis*, p. 122, N. America, FELT, Bull. N. York Mus. lxxvi, **n. spp.**

- Olesicampa nigricornis*, Styria, STROBL, p. 81, Mt. Ver. Steiermark xl, **n. sp.**
- Omorga dispar* ♂, STROBL, p. 79, t. c.
- Oneilella* **n. g.** for *Cryptus formosus* Br., p. 190, its host *Anaphe reticulata*, p. 191, CAMERON, Zeitschr. Hym. Dipt. iv.
- Opheltes glaucopterus*, habits, VAN ROSSUM, p. 71, Tijdschr. Ent. xlvii.
- Ophion costatus* ♂, STROBL, p. 52, Mt. Ver. Steiermark xl.
- O. frontalis*, Styria, STROBL, p. 53, t. c. **n. sp.**
- Ophiononeura* **n. g.** near *Ophionopterus*, p. 174, *O. flavomaculata* **n. sp.**, S. Africa, p. 175, CAMERON, Rec. Albany Mus. i.
- Otacustes alboannulus*, Manila, ASHMEAD, p. 140, P. U. S. Mus. xxviii, **n. sp.**
- Pantisarthurus pseudochropus, rudepunctatus*, Styria, STROBL, p. 137, Mt. Ver. Steiermark xl, **n. spp.**
- Parabatus nigricarpus* var. *n. semifuscus*, STROBL, p. 50, t. c.
- Paraphylax fasciutipennis*, Manila, ASHMEAD, p. 141, P. U. S. Mus. xxviii, **n. sp.**
- Phæogenes compar, tristis, tenuicornis*, p. 14, *subniger*, p. 15, Hte. Savoie, BERTHOUMIEU, Echange xx; *P. nigellus*, Spain, BERTHOUMIEU, p. 271, Bull. Soc. ent. France 1904 : **n. spp.**
- Phygadeuon latiannulatum*, p. 119, *striatifrons*, p. 120, *labiale, pallidinervis*, p. 121, Assam, CAMERON, Tr. ent. Soc. London 1904, **n. sp.**
- Pimpla diluta* to *Epiurus*, ASHMEAD, p. 102, Canad. Ent. xxxvi.
- P. shawi*, p. 145, *spiloaspis*, p. 146, Cape Colony, CAMERON, Rec. Albany Mus. i, **n. spp.**
- Platylabus calidus*, Spain, BERTHOUMIEU, p. 270, Bull. Soc. ent. France 1904; *P. parvulus*, Spain, *pimplarius*, Switzerland, p. 13, *tricolor*, Savoy, p. 14, BERTHOUMIEU, Echange 1904 : **n. spp.**
- Plectiscus quadrierosus*, p. 125, *tenuecinctus*, p. 126, *grossepunctatus*, p. 127, *pseudoproximus*, p. 128, *posticus, petiolifer*, p. 130, Styria, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Porizon erythrurus*, Admont, STROBL, p. 97, t. c. **n. sp.**
- Pristomerus schreineri*, St. Petersburg, ASHMEAD, p. 101, Canad. Ent. xxxvi; *P. flavus*, Manila, ASHMEAD, p. 145, P. U. S. Mus. xxviii : **n. spp.**
- Proclitus fulvocingulatus*, Styria, STROBL, p. 134, Mt. Ver. Steiermark xl, **n. sp.**
- Protocryptus* **n. g.** p. 414, SCHMIEDEKNECHT, Opusc. Ent.
- Pyraconon xoridoideus*, p. 72, *aterrimus*, p. 74, Admont, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
- Rhyssa persuasoria*, eggs, ovaries, see at head.
- Seleucus exareolatus*, Admont, STROBL, p. 109, Mt. Ver. Steiermark xl, **n. sp.**
- Shalisha* **n. g.** p. 221, *S. fulvipes* **n. sp.**, Darjeeling, p. 222, CAMERON, Zeitschr. Hym. Dipt. iv.
- Spilocryptus frey-gressneri*, Sierre, p. 526, *subalpinus*, Altvater, p. 528, SCHMIEDEKNECHT, Opusc. Ent., **n. spp.**
- Spilopoppa* **n. g.** p. 208, *S. fulvipes* **n. sp.**, Darjiling, p. 209, CAMERON, Entomologist 1904.
- Spilopimpla* **n. g.** p. 143, *S. rufithorax* **n. sp.**, Dunbrody, p. 144, CAMERON, Zeitschr. Hym. Dipt. iv.
- Spinolia schiefereri*, Styria, STROBL, p. 149, Mt. Ver. Steiermark xl, **n. sp.**
- Stylocryptus transverseareolatus* var. *nigripes*, STROBL, p. 149, t. c.
- Suralta annulipes*, p. 220, *pallidinerva*, p. 221, Khasia hills, CAMERON, Ann. Nat. Hist. xiii, **n. spp.**
- Symplesis defectiva*, Styria, STROBL, p. 112, Mt. Ver. Steiermark xl, **n. sp.**
- Synechocryptus* **n. g.** *oraniensis* **n. sp.**, Algeria, SCHMIEDEKNECHT, p. 427, Opusc. Ent.
- Tanyopoppa* **n. g.** p. 217, *T. sanguineoplagiata* **n. sp.**, Himalaya, p. 218, CAMERON, Zeitschr. Hym. Dipt. iv.

- Temelucha plutellæ*, St. Petersburg, ASHMEAD, p. 101, Canad. Ent. xxxvi ;
T. philippinensis, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc.
 xii : **n. spp.**
Thascia n. g. T. pilosa n. sp., Darjeeling, CAMERON, p. 339, Zeitschr.
 Hym. Dipt. iv.
Thersilochus platyurus, p. 99, *styriacus*, p. 100, Styria, *punctatissimus*, hab. ?,
 p. 102, STROBL, Mt. Ver. Steiermark xl, **n. spp.**
Thymaris pulchricornis var. *n. breviventris*, STROBL, p. 109, t. c.
T. slingerlandana, N. York from *Polychrosis*, ASHMEAD, p. 333, cut, Canad.
 Ent. xxxvi, and Slingerland, t. c. p. 344.
Trachynotus foliatus var. *n. nigerrimus*, STROBL, p. 55, Mt. Ver. Steier-
 mark xl.
Trichomma clavipes, New Guinea, p. 166, *intermedia*, Saxony, p. 168,
 KRIEGER, Zeitschr. Hym. Dipt. iv, **n. spp.**
Triptognathus n. g. near *Fileanta* Cam., BERTHOUMIEU, p. 49, Gen. Ins.
 xviii.
Trogus (Tricyphus) violaceus, Mexico, SZÉPLIGETI, p. 336, Bull. Mus. Paris
 ix, **n. sp.**
Tropistes, taxonomy and components, ROMAN, pp. 214–217, Zeitschr.
 Hym. Dipt. iv.
Umlina flexilis, Assam, CAMERON, p. 107, Tr. ent. Soc. London 1904,
n. sp.
Xylonomus sepulchralis and *depressus* to *Sichelia*, KOKUJEV, p. 298, Rev.
 Russe Ent. 1904.

BRACONIDÆ (incl. ALYSIIDÆ).

- [Cf. ASHMEAD (44, 47, 48, 50, 51), BRÈTHES (175, 177), CAMERON (222, 223,
 224, 225, 231, 234), ENDERLEIN (456), FROGGATT (562), GIARD (599),
 HÖPPNER (705), MANTERO (902–904), SZÉPLIGETI (959, 1365–1367).]
 The genera of *Braconidæ*, with lists of species, SZÉPLIGETI, Wytsman's
 Gen. Ins. fasc. xxii and xxiii, 253 pp., 3 pls.
Acanthobracon nigromaculata, Cape Colony, CAMERON, p. 155, Rec. Albany
 Mus. i, **n. sp.**
Agathis rufoplagiata, Sikkim, CAMERON, p. 5, Zeitschr. Hym. Dipt. iv ;
A. caudata, Peru, SZÉPLIGETI, p. 195, Ann. Mus. Hungar. ii : **n. spp.**
Apanteles basimacula, maculitarsis, Grahamstown, CAMERON, p. 173, Rec.
 Albany Mus. i ; *A. philippinensis, manilæ*, Philippines, ASHMEAD,
 p. 19, J. N. York Ent. Soc. xii : **n. spp.**
Aspilota ceylonica, Peradeniya, ASHMEAD, p. 113, Ent. News Philad. xv,
n. sp.
Bracon bicolor Br. to *Iphiaulax*, CAMERON, p. 1554, Rec. Albany Mus. i ;
B. tschitscherini, Transcaspian, KOKUJEV, p. 213, Rev. Russe Ent. iv ;
B. teius, Ternate, p. 122, *spilogaster*, hab. ?, p. 123, CAMERON, J. Straits
 Asiat. Soc. xli ; *B. ricinicola*, Manila, ASHMEAD, p. 148, P. U. S. Mus.
 xxviii ; *B. semialbus*, p. 182, *antennalis, peruvianus, marcapatensis,*
americanus, bimaculatus, p. 183, *binotatus, enotatus, atriceps*, Peru,
paraguayensis, Paraguay, p. 184, *sicuanensis, circumtinctus*, Peru,
aricensis, Chile, p. 185, SZÉPLIGETI, Ann. Mus. Hungar. ii : **n. spp.**
Braunsia, revised, definition amended, synonymy, ENDERLEIN, pp. 429–452,
 Zool. Jahrb. Syst. xx.
B. germanica, Pomerania, *fuscipennis*, p. 436, *congoensis*, p. 437, *occidentalis*,
 p. 438, with var. *obscurior, reicherti*, p. 439, *erlangeri*, p. 442, *kriegeri*,
 p. 444, *ochracea*, p. 445, *subsulcata, melanura*, p. 446, Africa, *kriech-*
baumeri, Lombok, p. 447, *bimaculata*, Java, p. 448, *fasciata*, Lombok,
 p. 449, *cariosa*, Ceylon, p. 450, ENDERLEIN, Zool. Jahrb. Syst. xx,
n. spp.

- Brulleia* **n. g.** *melanocephala* **n. sp.**, N. Guinea, SZÉPLIGETI, p. 150, Braconidæ.
- Cardiochiles eremita*, Transcaspian, KOKUJEV, p. 215, Rev. Russe Ent. iv, **n. sp.**
- Cenocelius peruanus*, Peru, SZÉPLIGETI, p. 196, Ann. Mus. Hungar. ii, **n. sp.**
- Cervellus* **n. n.** to replace *Cervulus* below, SZÉPLIGETI, p. 253, Braconidæ.
- Cervulus* **n. g.** *denticornis* **n. sp.**, Peru, SZÉPLIGETI, p. 20, Braconidæ.
- Chelonus robertianus*, S. Africa, CAMERON, p. 110, Rec. Albany Mus. i ;
C. semihyalinus, Manila, ASHMEAD, p. 146, P. U. S. Mus. xxviii ;
C. sobrinus, Peru, SZÉPLIGETI, p. 194, Ann. Mus. Hungar. ii : **n. spp.**
- Cremnops collaris*, Manila, ASHMEAD, p. 146, P. U. S. Mus. xxviii, **n. sp.**
- Curriea fasciatipennis*, Liberia, ASHMEAD, p. 18, cut, Ent. News Philad. xv.
- Cystomastax* **n. g.** *macrocentroides* **n. sp.**, Peru, SZÉPLIGETI, p. 81, Braconidæ.
- Dacnusa rondanii*, Argenteuil, GIARD, p. 181, Bull. Soc. ent. France 1904, **n. sp.**
- Ephedrus persicæ*, Australia, FROGGATT, p. 611, Agric. Gaz. N. S. W. xv, **n. sp.**
- Euagathis pulcher*, Peru, SZÉPLIGETI, p. 195, Ann. Mus. Hungar. ii, **n. sp.**
- Eurytenes nanus*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii, **n. sp.**
- Euscelinus manilæ*, Philippines, ASHMEAD, p. 145, t. c. **n. sp.**
- Euvipio* **n. g.** p. 14, *E. rufa* **n. sp.**, W. Africa, p. 15, SZÉPLIGETI, Braconidæ.
- Exothecus tibialis*, Cape Colony, CAMERON, p. 156, Rec. Albany Mus. i ;
E. spilopterus, p. 166, *capensis*, *canaliculatus*, p. 167, S. Africa, CAMERON, t. c. : **n. spp.**
- Exyra* spp. habits, metamorphosis, JONES, p. 16, pl. iii, Ent. News Philad. xv.
- Fœnomorpha* **n. g.** p. 8, *F. bicolor* **n. sp.**, Peru, p. 9, SZÉPLIGETI, Braconidæ.
- Glyptapanteles manilæ*, Philippines, ASHMEAD, p. 147, P. U. S. Mus. xxviii, **n. sp.**
- Iphicrux trægardhi*, White Nile, SZÉPLIGETI, p. 10, Jägerskiöld exp. No. 14 ; *I. capensis*, p. 149, *basimacula*, p. 150, *clanes*, *rubrilineatus*, p. 151, *rubrinervis*, p. 152, *æthiopicus*, p. 153, *odontoscapus*, 12-*fasciatus*, p. 154, Cape Colony, CAMERON, Rec. Albany Mus. i ; *I. soleæ*, p. 164, *whitei*, *spilonotus*, p. 165, S. Africa, CAMERON, t. c. ; *I. baeri*, Peru, SZÉPLIGETI, p. 337, Bull. Mus. Paris ix ; *I. tornovii*, Tucuman, BRÈTHES, p. 334, An. Mus. Buenos Aires xi ; *I. transiens*, *rugulosus*, p. 173, *sicuanensis*, *carpalis*, p. 174, *lævigatus*, *ignavus*, p. 175, *apricans*, *peregrinus*, *sculptilis*, *transversalis*, p. 176, *simillimus*, *dubiosus*, Peru, *mercedesiensis*, Argentina, p. 177, *macellus*, *persimilis*, *costatus*, *longulus*, *elegantulus*, Peru, *boliviensis*, Bolivia, p. 178, *luctuosus*, *braconiformis*, p. 179, *braconius*, *pseudobracon*, *paraguayensis*, *latus*, *aptus*, p. 188, *apricans*, *simplex*, Peru, *macretus*, Brazil, p. 181, *pernix*, *agilis*, p. 182, Peru, SZÉPLIGETI, Ann. Mus. Hungar. ii : **n. spp.**
- Ischiogonus philippinensis*, Manila, ASHMEAD, p. 285, Canad. Ent. xxxvi, **n. sp.**
- Ischnopus* **n. g.** *Alysiidæ*, p. 450, *I. bituberculatus* **n. sp.**, Tuscany, p. 451, MARSHALL, Ann. Mus. Genova xli.
- Lisitheria* **n. g.** *Agathidinæ*, *L. nigricornis* **n. sp.**, India, CAMERON, p. 306, Entomologist 1904.
- Macrocentrus philippinensis*, Manila, ASHMEAD, p. 145, P. U. S. Mus. xxviii, **n. sp.**
- Macrostromion peruvianum*, Peru, SZÉPLIGETI, p. 193, Ann. Mus. Hungar. ii, **n. sp.**
- Megacentrus* **n. g.** p. 145, *concolor* **n. sp.**, Kilimanjaro, p. 146, SZÉPLIGETI, Braconidæ.
- Megalommum flavomaculatum*, Cape Colony, CAMERON, p. 157, Rec. Albany Mus. i, **n. sp.**

- Megaproctus fumipennis, fuscipennis*, p. 191, Peru, *xanthostigma*, Paraguay, *bifasciatus, affinis*, p. 192, *bicolor*, p. 193, Peru, SZÉPLIGETI, Ann. Mus. Hungar. ii, **n. spp.**
- Megarhogas n. g.* p. 83, *longipes, minor n. spp.*, Celebes, p. 84, SZÉPLIGETI, Braconidæ.
- Mesoagathis n. g. M. fuscipennis n. sp.*, Grahamstown, CAMERON, p. 172, Rec. Albany Mus. i.
- Meteorus bacoorensis*, Philippines, ASHMEAD, p. 18, J. N. York Ent. Soc. xii; *M. eumenidis*, Argentina, BRÉTHES, p. 53, An. Mus. Buenos Aires (3) ii: **n. spp.**
- Microcentrus n. g. Dyscoletes similis*, SZÉPLIGETI, p. 155, Braconidæ.
- Microdus bipustulatus*, Cape Colony, CAMERON, p. 158, Rec. Albany Mus. i, **n. sp.**
- Microplitis manilæ, philippinensis*, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. spp.**
- Monarea n. g. Osmophila fuscipennis*, SZÉPLIGETI, p. 68, Braconidæ.
- Monolexia manilensis*, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. sp.**
- Neorhyssa partiti*, p. 187, *ruficeps*, p. 188, Brazil, SZÉPLIGETI, Ann. Mus. Hungar. ii, **n. spp.**
- Opius pedestris*, Peru, SZÉPLIGETI, p. 196, t. c.; *O. philippinensis*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii: **n. spp.**
- Phænocarpa (Idiolexis) coxalis*, Peru, SZÉPLIGETI, p. 197, Ann. Mus. Hungar. ii, **n. sp.**
- Phanerotoma philippinensis*, Bacoar, ASHMEAD, p. 19, J. N. York Ent. Soc. xii, **n. sp.**
- Pseudobracon n. g.* p. 48, *africanus n. sp.*, Sierra Leone, p. 49, SZÉPLIGETI, Braconidæ.
- Rhogas ruspolii*, p. 413, *citernii*, p. 414, *scioensis*, p. 415, E. Africa, MANTERO, Ann. Mus. Genova xli; *R. fuscipennis, affinis*, Peru, SZÉPLIGETI, p. 194, Ann. Mus. Hungar. ii: **n. spp.**
- Schlettereriella n. g. Stenophasmus oncophorus* Sch., SZÉPLIGETI, p. 54, Braconidæ.
- Schonlandella n. g.* p. 169, position doubtful, *S. nigromaculata*, p. 170, *trimaculata, nigricollis*, p. 171, **n. spp.**, S. Africa, CAMERON, Rec. Albany Mus. i.
- Spathius philippinensis*, Manila, ASHMEAD, p. 148, P. U. S. Mus. xxviii, **n. sp.**
- Stantonia n. g. Microdini*, p. 146, *S. flava n. sp.*, Manila, p. 147, ASHMEAD, t. c.
- Trichiobracon rufus*, p. 168, *maculifrons*, p. 169, S. Africa, CAMERON, Rec. Albany Mus. i, **n. spp.**
- Urogaster philippinensis*, p. 19, *stantoni*, p. 20, Philippines, ASHMEAD, p. 20, J. N. York Ent. Soc. xii, **n. spp.**
- Vipio (Pseudovipio) turcomanicus*, Transcaspien, p. 213, *xanthostigma*, W. Siberia, p. 214, KOKUJEV, Rev. Russe ent. iv, **n. spp.**
- Westwoodiella n. g. bicolor n. sp.*, W. Australia, SZÉPLIGETI, p. 155, Braconidæ.
- Xanthomicrodus n. g.* near *Crassomicrodus*, p. 157, *X. iridipennis n. sp.*, Cape Colony, p. 158, CAMERON, Rec. Albany Mus. i.

EVANIIDÆ.

[Cf. ASHMEAD (47), CAMERON (224, 240), HÖPPNER (705), KIEFFER (793).]

- Aulacinus costulatus*, Brazil, KIEFFER, p. 561, Arkiv Zool. i, **n. sp.**
- Aulacus erythrogaster*, Nevada, KIEFFER, p. 561, t. c. **n. sp.**
- Evania striatifrons, versicolor*, p. 543, with var. *erythrogaster*, p. 544,

- quinquelineata*, p. 544, *villosicrus*, Australia, *ferruginea*, Mexico, p. 545, *multicolor*, Java, p. 546, *levigena*, Caffraria, p. 547, *longitarsis*, p. 548, *brevigena*, p. 549, Brazil, *incerta*, S. France, p. 550, KIEFFER, t. c.; *E. annulipes*, Manila, ASHMEAD, p. 139, P. U. S. Mus. xxviii : **n. spp.**
- Gasteruption krieckbaumeri* var. *n. striaticeps*, KIEFFER, p. 551, Arkiv Zool. i; *G. assectator*, natural history, HÖPPNER, pp. 97–103, Allg. Zeitschr. Ent. ix.
- G. cultrigerum*, p. 552, *sanguineum*, *sjustedti*, p. 553, Cape Good Hope, *lativalva*, Australia, p. 554, *fulvivagina*, Caffraria, p. 555, *micrura* with var. *nigripectus*, *intricatum*, N. America, p. 556, *trifossulatum*, Egypt, p. 557, *leucopus*, Java, *nigromaculatum*, hab.?, p. 558, KIEFFER, Arkiv Zool. i; *G. dunbrodyense*, Cape Colony, CAMERON, p. 159, Rec. Albany Mus. i, **n. spp.**
- Hyptia argenteiceps*, hab.?, p. 540, *brevicalcar*, Wisconsin, p. 541, *rufosignata*, Buenos Ayres, p. 543, KIEFFER, Arkiv Zool. i, **n. spp.**
- Pristaulacus flavoguttatus*, Australia, CAMERON, p. 191, Zeitschr. Hym. Dipt. iv; *P. flavipes*, Illinois, p. 559, *muticus*, hab.?, p. 560, KIEFFER, Arkiv Zool. i : **n. spp.**

STEPHANIDÆ.

- Megischus ruficeps*, Saigon, pl. xii, fig. 5, p. 201, *borneensis*, Borneo, p. 202, SAUSSURE, Mission Pavie iii, **n. spp.**

CHALCIDIDÆ.

- [Cf. ASHMEAD (41, 46, 47, 48, 52, 53), CAMERON (223, 230), EMBLETON (450), FYLES (574), HÖPPNER (705), KIEFFER (796), MARCHAL (906, 907), MAYR (928), VASSILIEV (1433).]

ASHMEAD classifies the *Chalcidoidea*, adopting 14 families, tabulating the genera; he also catalogues the S. American forms and describes many new: Mem. Carnegie Mus. i, No. 4, pp. 225–551. For brevity, and as the work will be chiefly used separately, we have cited it below as ASHMEAD, Chalcid.

Bibliography of genera of *Chalcididæ*, ASHMEAD, pp. 365–393, Chalcid.

Anatomy and metamorphosis of *Comys infelix*, eggs, EMBLETON, Tr. Linn. Soc. London (2) ix, pp. 231–254, pls. xi, xii.

Remarkable development of *Ageniopsis fuscicollis*, MARCHAL, Arch. Zool. exp. xxxii, pp. 259–299.

Acanthometopon n. g. type *A. claricornis* Ashm., ASHMEAD, Chalcid. p. 314, *A. clavicorne*, Brazil, pl. xxxviii, fig. 3, p. 498, id. **n. sp.**

Acroclisis coccidivora, Japan, ASHMEAD, p. 158, J. N. York Ent. Soc. xii, **n. sp.**

Acroclisis brasiliensis, Chapada, ASHMEAD, Chalcid. p. 502, **n. sp.**

Allochalcis n. g. p. 256, *A. nervosa n. sp.*, Madagascar, p. 257, KIEFFER, Berlin. ent. Zeitschr. xlix.

Alloderma n. g. type *A. maculipennis*, Ashm., ASHMEAD, Chalcid. p. 273.

Alophomyia n. n. for *Alophus* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.

Alophus n. g. type *A. flavus* Ashm., ASHMEAD, Chalcid. p. 353, *A. brasiliensis*, Brazil, p. 520, id. **n. sp.**

Ametallon n. g. type *A. chapadæ* Ashm., ASHMEAD, Chalcid. p. 344, *A. chapadæ*, Brazil, p. 511, id. **n. sp.**

Anacryptus japonicus, p. 147, *koebeli*, p. 148, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. sp.**

Anastatus japonicus, *gastropachæ*, p. 153, *brevipennis*, *albitarsis*, p. 154,

- Japan, ASHMEAD, J. N. York Ent. Soc. xii, *A. stantoni*, Philippines, ASHMEAD, p. 14, t. c.; *A. auriceps*, p. 493, *coreophagus*, *pleuralis*, *basalis*, *punctiventris*, p. 494, *unifasciatus*, p. 495, Brazil, ASHMEAD, Chalcid. : **n. spp.**
- Anthrocephalus punctatus*, Madagascar, p. 253, *rufipes*, Nossi-Bé, p. 254, KIEFFER, Berlin. ent. Zeitschr. xlix, **n. spp.**
- Aphelinus japonicus*, Atami, ASHMEAD, p. 161, J. N. York Ent. Soc. xii, **n. sp.**
- Aphidencyrus pallidipes*, Philippines, ASHMEAD, p. 15, t. c.; *A. brasiliensis*, Chapada, ASHMEAD, Chalcid. p. 497 : **n. spp.**
- Aphobetoideus* **n. g.** type *A. comperei* Ashm., ASHMEAD, Chalcid. p. 328.
- Aphycus albopleuralis*, Japan, ASHMEAD, p. 155, J. N. York Ent. Soc. xii, **n. sp.**
- Apocryptophagus* **n. g.** type *Chalcis explorator* Coq., ASHMEAD, Chalcid. p. 238.
- Ardalus howardii*, Brazil, ASHMEAD, Chalcid. p. 517, **n. sp.**
- Arretocera stantoni*, Manila, ASHMEAD, p. 136, P. U. S. Mus. xxviii, **n. sp.**
- Asecodes elasmii*, Manila, ASHMEAD, p. 138, t. c. **n. sp.**
- Aspidiotiphagus aleyrodis*, Manila, ASHMEAD, p. 139, t. c. **n. sp.**
- Axima koebelei*, *brasiliensis*, *brevicornis*, Brazil, ASHMEAD, Chalcid. p. 459, **n. spp.**
- Aximogastra* **n. g.** type *A. bahiæ* Ashm., ASHMEAD, Chalcid. p. 261, *A. bahiæ*, Brazil, p. 463, pl. xxxiii, fig. 5, id. **n. sp.**
- Aximopsis* **n. g.**, ASHMEAD, Chalcid. p. 259, *A. morio*, pl. xxxii, fig. 6, p. 460, Brazil, ASHMEAD, t. c. **n. sp.**
- Bephrata striatipes*, Brazil, p. 462, pl. xxxiii, fig. 4, ASHMEAD, t. c. **n. sp.**
- Blatticida* **n. g.** type *B. pulchra* Ashm., ASHMEAD, t. c. p. 305.
- Bothriothorax brasiliensis*, Chapada, ASHMEAD, t. c. p. 496, **n. sp.**
- Brachista* Walk. not valid, MAYR, p. 591, Verh. Ges. Wien liv.
- Brachycaudonia* **n. g.** type *B. californica* Ashm., ASHMEAD, Chalcid. p. 283.
- Brachystira pungens* (Förster), Germany, MAYR, p. 590, Verh. Ges. Wien liv, **n. sp.**
- Brasema fuscipennis*, Brazil, ASHMEAD, Chalcid. p. 486, **n. sp.**
- Bruchobius* **n. g.** type *B. laticeps* Ashm., ASHMEAD, t. c. p. 314.
- Bruchophagus funebris*, natural history, TITUS, pp. 77-83, Bull. U. S. Dep. Agric. Ent. xlv.
- Callismicra* **n. g.** p. 247, *C. flavocincta* **n. sp.**, Madagascar, p. 248, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Calosoter albitarsis*, Japan, ASHMEAD, p. 153, J. N. York Ent. Soc. xii, **n. sp.**
- Cecidoxenus* **n. g.** type *C. nigrocyanus* Ashm., ASHMEAD, Chalcid. p. 274.
- Cerapteroceroides* **n. g.** near *Cerapterocerus*, *C. japonicus* **n. sp.**, Atami, ASHMEAD, p. 156, J. N. York Ent. Soc. xii.
- Ceratasmicra* **n. g.** type *C. petiolata* Ashm., ASHMEAD, Chalcid. p. 251.
- Chalcedectes annulipes*, Brazil, pl. xxxvi, fig. 2, p. 483, ASHMEAD, t. c. **n. sp.**
- Chalcis flavitarsis*, Madagascar, *tenuicornis*, Nossi-Bé, p. 260, *multicolor*, Madagascar, p. 261, *saussurei*, *rufiventris*, Nossi-Bé, p. 262, *ferox*, p. 263, Nossi-Bé and Bourbon, with var. *coxalis*, p. 264, KIEFFER, Berlin. ent. Zeitschr. xlix; *C. prodeniæ*, Manila, ASHMEAD, p. 136, P. U. S. Mus. xxviii; *C. albotibialis*, *argentifrons*, Philippines, ASHMEAD, J. N. York Ent. Soc. xii : **n. spp.**
- Cheiloneurus japonicus*, Gifu, ASHMEAD, p. 156, J. N. York Ent. Soc. xii, **n. sp.**
- Chryseida æneiventris*, Brazil, p. 462, pl. xxxiii, fig. 3, ASHMEAD, Chalcid. **n. sp.**
- Chrysoatomus* **n. g.** type *C. zealandicus* Ashm., ASHMEAD, t. c. p. 342.
- Chrysonotomyia* **n. g.** type *Eulophus auropunctatus* Ashm., ASHMEAD, t. c. p. 344.

- Cirrospiloideus* **n. g.** type *Miotropis platynotæ* How., ASHMEAD, t. c. p. 354.
Closterocerus brownii, Manila, ASHMEAD, p. 138, P. U. S. Mus. xxviii, **n. sp.**
Coccidencyrus manilæ, Philippines, ASHMEAD, p. 14, J. N. York Ent. Soc. xii, **n. sp.**
Cælochalcis **n. g.** near *Halticella*, *C. carinifrons* **n. sp.**, Sikkim, p. 111, CAMERON, Entomologist 1904.
Copidosoma japonicum, Gifu, ASHMEAD, p. 154, J. N. York Ent. Soc. xii, **n. sp.**
Cryptoprymnus japonicus, Japan, ASHMEAD, p. 159, t. c. **n. sp.**
Decatoma atamiensis, Japan, ASHMEAD, p. 151, t. c. **n. sp.**
Decatomo thorax **n. g.** type *D. gallicola* Ashm., ASHMEAD, Chalcid. p. 273.
Derostenus bifoveolatus, *navai*, p. 160, *mitsukurii*, p. 161, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. spp.**
Dialomorpha **n. g.** type *D. australiensis* Ashm., ASHMEAD, Chalcid. p. 356.
Diaulus **n. g.** type *D. begini* Ashm., ASHMEAD, t. c. p. 356.
Dicelothorax platycerus, Santarem, pl. xxxv, fig. 3, p. 470, ASHMEAD, t. c. **n. sp.**
Diglyphomorpha **n. g.** type *Diglyphus maculipennis* Ashm., ASHMEAD, t. c. p. 352.
Dimmockia **n. g.** type *Eulophus incongruus* Ashm., ASHMEAD, t. c. p. 357.
Eisenia **n. g.** type *E. mexicana* Ashm., ASHMEAD, t. c. p. 233.
E. flaviscapa, Pará, ASHMEAD, t. c. p. 394, **n. sp.**
Elachertomorpha **n. g.** type *E. flaviceps* Ashm., ASHMEAD, t. c. p. 352.
E. flaviceps, Brazil, p. 518, ASHMEAD, t. c. **n. sp.**
Elachertus atamiensis, *basilaris*, Japan, ASHMEAD, p. 164, J. N. York Ent. Soc. xii, **n. spp.**
Elasmus atamiensis, *hakonensis*, p. 159, *japonicus*, p. 160, Japan, ASHMEAD, t. c.; *E. philippinensis*, Manila, ASHMEAD, p. 138, P. U. S. Mus. xxviii; *E. brasiliensis*, p. 502, *peraffinis*, *chapadæ*, p. 503, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Encyrtaspis **n. g.** type *E. brasiliensis* Ashm., ASHMEAD, Chalcid. p. 290, *E. braziliensis*, Pernambuco, pl. xxxvii, fig. 4, p. 492, id. **n. sp.**
Encyrtus telenomicida, Charkov, on *Telenomus*. VASSILIEV, p. 117, Rev. Russe Ent. iv, **n. sp.**
Enneasmicra **n. g.** type *Smicra exinamius* Walk., ASHMEAD, Chalcid. p. 252, *E. incerta*, Brazil, ASHMEAD, p. 449, t. c. **n. sp.**
Epipteromalus **n. g.** type *E. algonquinensis* Ashm., ASHMEAD, t. c. p. 319.
Eufroggattia **n. n.** for *Froggattia* Ashm., ASHMEAD, p. 126, P. ent. Soc. Washington vi.
Eukoebelia **n. n.** for *Kæbelea* Ashm., ASHMEAD, p. 126, t. c.
Eulophopteryx **n. g.** type *E. chapadæ* Ashm., ASHMEAD, Chalcid. p. 341, *E. chapadæ*, Brazil, pl. xxxviii, fig. 6, p. 506, id. **n. sp.**
Eulophus exiguus Nees to *Asynacta*. MAYR, p. 589, Verh. Ges. Wien liv.
E. albitarsis, p. 164, *striatipes*, *japonicus*, p. 165, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. spp.**
Euophthalmomyia **n. g.** type *E. pallidipes* Ashm., ASHMEAD, Chalcid. p. 339.
Eupelmus formosæ, Formosa, ASHMEAD, p. 154, J. N. York Ent. Soc. xii; *E. koebeli*, *acaudus*, *proximus*, p. 488, *compressiventris*, *aprilis*, *chapadæ*, *santaremensis*, *persimilis*, p. 489, *corumbæ*, *unifasciatus*, *simillimus*, *magniclavatus*, p. 490, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Euplectrus manilæ, *philippinensis*, Philippines, ASHMEAD, p. 16, J. N. York Ent. Soc. xii, *E. japonicus*, *nigromaculatus*, Japan, ASHMEAD, p. 163, t. c.; *E. brasiliensis*, p. 516, *corumbæ*, *solitarius*, *chapadæ*, p. 517, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Euryophrys Först. = (*Calypso* Hal.), ASHMEAD, p. 126, P. ent. Soc. Washington vi.

- Eurytoma rubicola*, natural history, HÖPPNER, pp. 161–171, Allg. Zeitschr. Ent. ix.
- E. infracta*, Dalmatia, p. 580, *timaspidis*, Montpellier, p. 582, MAYR, Verh. Ges. Wien liv; *E. nikkoensis*, *atamiensis*, p. 149, *japonica*, *binotata*, *hakonensis*, *mitsukurii*, p. 150, Japan, ASHMEAD, J. N. York Ent. Soc. xii, *E. manilensis*, Philippines, ASHMEAD, p. 13, t. c. : **n. spp.**
- Eusayia* **n. n.** for *Sayiella* Ashm., ASHMEAD, p. 126, P. ent. Soc. Wash- ington vi.
- Eustypura* **n. g.** type *E. bicolor* Ashm., ASHMEAD, Chalcid. p. 251, *E. bicolor*, pl. xxxi, fig. 4, *sexmaculata*, fig. 5, p. 412, *smithii*, p. 413, Brazil, ASHMEAD, t. c. **n. spp.**
- Exoristobia* **n. g.** *Encyrtidæ*, *E. philippinensis* **n. sp.**, Manila, ASHMEAD, p. 15, J. N. York Ent. Soc. xii.
- Froggattia* **n. g.** type *F. polita* Ashm., ASHMEAD, Chalcid. p. 238.
- Haltichella ludlowæ*, Philippines, ASHMEAD, p. 13, J. N. York Ent. Soc. xii, **n. sp.**
- Halticoptera laticeps*, Japan, ASHMEAD, p. 152, t. c. **n. sp.**
- Hemitorymus* **n. g.** type *H. thoracicus* Ashm., ASHMEAD, Chalcid. p. 243; *H. thoracicus*, Chapada, p. 401, id. t. c. **n. sp.**
- Heptasmicra* **n. g.** type *Smicra oblitterata* Walk., ASHMEAD, Chalcid. p. 252; *H. persimilis*, *affinis*, *longicaudata*, *lineaticoxus*, p. 452, *quadrimacu- lata*, p. 453, Brazil, id. t. c. **n. spp.**
- Herbertia howardi*, pl. xxxv, fig. 6, *brasiliensis*, Brazil, p. 474, ASHMEAD, Chalcid. **n. spp.**
- Hexasmicra* **n. g.** type *Smicra transversa* Walk., ASHMEAD, Chalcid. p. 252; *H. trinidadensis*, *brasiliensis*, Brazil, id. p. 454, t. c. **n. spp.**
- Holcopeltoideus* **n. g.** type *H. petiolata* Ashm., ASHMEAD, Chalcid. p. 341.
- Holochalcis* **n. g.** *H. madagascariensis*, p. 258, Madagascar, *albipes*, p. 259, Nossi-Bé, **n. spp.**, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Homoporus japonicus*, Atami, ASHMEAD, p. 157, J. N. York Ent. Soc. xii, **n. sp.**
- Hontalia cameroni*, pl. xxxii, fig. 4, *kirbyi*, fig. 5, Santarem, ASHMEAD, Chalcid. p. 458, **n. spp.**
- Hoplocrepis bifasciata*, pl. xxxviii, fig. 5, *brasiliensis*, Brazil, p. 505, ASHMEAD, t. c. **n. spp.**
- Horismenus bisulcus*, *brasiliensis*, p. 507, *corumbæ*, *persimilis*, *aneicollis*, p. 508, Brazil, ASHMEAD, t. c. **n. spp.**
- Hubbardiella* **n. g.** type *H. arizonensis* Ashm., ASHMEAD, Chalcid. p. 339.
- Hydrorhoa* **n. g.** *Eucharinæ*, p. 240, *H. striaticeps* **n. sp.**, Madagascar, p. 241, KIEFFER, Berlin. ent. Zeitschr. xlix.
- Hypopteromalus* **n. g.** type *P. tabacum* Fitch, ASHMEAD, Chalcid. p. 320.
- Ischnopsis thoracica*, *cyanea*, Brazil, ASHMEAD, t. c. p. 487, **n. sp.**
- Isosomodes brasiliensis*, pl. xxxiii, fig. 1, p. 460, *nigriceps*, p. 461, fig. 2, Santarem, ASHMEAD, t. c. **n. spp.**
- Kapala furcata*, ♀ described, KIEFFER, p. 243, Berlin. ent. Zeitschr. xlix.
- K. splendens*, Brazil, pl. xxxv, fig. 4, p. 473, ASHMEAD, Chalcid. **n. sp.**
- Koebelea* **n. g.** type *K. australiensis* Ashm., ASHMEAD, t. c. p. 238. [Cf. *Eukoebelea* below.]
- Kradibia brownii*, Philippines, ASHMEAD, p. 342, Ent. News Philad. xv, **n. sp.**
- Lasiokapala serrata*, Brazil, pl. xxxv, fig. 5, p. 474, ASHMEAD, Chalcid. **n. sp.**
- Lathromeris*, parasitising egg of *Chrysopa*, KRYGER, Ent. Meddel. ii. p. 340.
- Lelaps apicalis*, p. 479, *affinis*, *ferruginea*, p. 480, *aneiceps*, *halidayi*, *abdo- minalis*, pl. xxxvi, fig. 1, p. 481, *bimaculata*, *stylata*, p. 482, Brazil, ASHMEAD, Chalcid. **n. spp.**
- Leptochalcis* **n. g.**, p. 251, *L. filicornis* **n. sp.**, Madagascar, p. 252, KIEFFER, Berlin. ent. Zeitschr. xlix.

- Leucodesmia flaviceps*, Brazil, ASHMEAD, Chalcid. p. 518, **n. sp.**
Leucospis japonica ♂, ASHMEAD, p. 147, J. N. York Ent. Soc. xii.
L. enderleini, Santarem, ASHMEAD, Chalcid. p. 405, pl. xxxi, fig. 1, **n. sp.**
Lophocomus cyaneus, Brazil, ASHMEAD, t. c. p. 506, **n. sp.**
Macrorileya **n. g.** type *R. acanthi* Ashm., ASHMEAD, t. c. p. 264.
Megastigmus japonicus, koebelei, Japan, ASHMEAD, p. 146, J. N. York Ent. Soc. xii, **n. spp.**
Melanosmicra **n. g.** type *M. immaculata* Ashm., ASHMEAD, Chalcid. p. 251, *M. immaculata*, Chapada, p. 448, **n. sp.**
Mesidia pumila, Aachen, MAYR, p. 588, Verh. Ges. Wien liv, **n. sp.**
Metadontia flavolineata, similis, p. 453, *affinis*, p. 454, Brazil, ASHMEAD, Chalcid. **n. spp.**
Metopon brasiliense, p. 497, *magniclavatum*, p. 498, Brazil, ASHMEAD, t. c. **n. spp.**
Microchalcis **n. g.** p. 255, *M. quadridens* **n. sp.**, Bitsch, p. 256, KIEFFER, Berlin. ent. Zeitschr. xlix.
Microterys japonicus, Gifu, ASHMEAD, p. 155, J. N. York Ent. Soc. xii, **n. sp.**
Mirocerus **n. g.** type *M. pyelæ* Ashm., ASHMEAD, Chalcid. p. 309.
Mischosmicra **n. g.** type *M. kahlui* Ashm., ASHMEAD, t. c. p. 251.
Monodontomerus japonicus, Nikko, ASHMEAD, p. 83, J. N. York Ent. Soc. xii, **n. sp.**
Mormoniella **n. g.** type *M. brevicornis* Ashm., ASHMEAD, Chalcid. p. 316.
Nasonia **n. g.** type *N. brevicornis* Ashm., ASHMEAD, t. c. p. 317.
Neocatolaccus **n. g.** type *Cut. tylodermæ* Ashm., ASHMEAD, t. c. p. 320.
Neorileya **n. g.** type *N. flavipes* Ashm., ASHMEAD, t. c. p. 264; *N. flavipes*, Brazil, p. 466, pl. xxxvi, fig. 2, id. t. c. **n. sp.**
Nesomyia **n. g.** type *N. albipes* Ashm., ASHMEAD, t. c. p. 344; *N. albipes, cinctiventris*, Japan, ASHMEAD, p. 161, J. N. York Ent. Soc. xii, **n. spp.**
Notanisomorpha **n. g.** type *N. collaris* Ashm., ASHMEAD, Chalcid. p. 356.
Octosmicra **n. g.** type *O. laticeps* Ashm., ASHMEAD, t. c. p. 252; *O. nigro-maculata*, p. 450, *trimaculata*, p. 451, Brazil, id. t. c. **n. spp.**
Omphale brasiliensis, Chapada, ASHMEAD, t. c. p. 504, **n. sp.**
Oncochalcis **n. g.** p. 161, *O. marginata* **n. sp.**, India, p. 162, CAMERON, Entomologist 1904.
Ophelinoideus japonicus, Hakone, p. 163, pl. viii, fig. 4, ASHMEAD, J. N. York Ent. Soc. xii, **n. sp.**
Ormyrus, revision of European, with host-galls, variation etc., MAYR, pp. 559-580, Verh. Ges. Wien liv.
O. destefanii, Sicily, p. 566, *wachtli*, Dalmatia, p. 569, MAYR, t. c.; *O. brasiliensis*, Chapada, ASHMEAD, Chalcid. p. 401 : **n. spp.**
Orthochalcis **n. g.** for *Euchalcis fertoni*, KIEFFER, p. 265, Berlin. ent. Zeitschr. xlix.
Oxycoryphus **n. g.** near *Stomatoceras*, p. 109, *O. pilosellus* **n. sp.**, Deesa, p. 110, CAMERON, Entomologist 1904.
Pachyneura nawai, mitsukurii, gifuensis, Japan, ASHMEAD, 158, J. N. York Ent. Soc. xii, **n. spp.**
Pachycrepoides **n. g.** type *P. dubius* Ashm., ASHMEAD, Chalcid. p. 329.
Paracrias **n. g.** type *P. laticeps* Ashm., ASHMEAD, t. c. p. 343; *P. laticeps*, Brazil, pl. xxxix, fig. 1, p. 510, id. **n. sp.**
Parapteromalus **n. g.** type *P. isosomatis* Ashm., ASHMEAD, t. c. p. 320.
Parasaphes **n. g.** type *P. iceryæ* Ashm., ASHMEAD, t. c. p. 328.
P. japonicus, flavipes, Japan, ASHMEAD, p. 157, J. N. York Ent. Soc. xii, **n. spp.**
Parasपालangia **n. g.** type *P. annulipes* Ashm., ASHMEAD, Chalcid. p. 334.
Paraterobia **n. g.** type *P. nigriceps* Ashm., ASHMEAD, t. c. p. 274.
Pelorotelus **n. g.** type *P. cæruleus* Ashm., ASHMEAD, t. c. p. 341; *P. cæruleus*, Brazil, p. 509, id. **n. sp.**

- Pentarthron brasiliensis*, Bahia, ASHMEAD, t. c. p. 521, **n. sp.**
Pestasmicra n. g. type *P. brasiliensis* Ashm., ASHMEAD, t. c. p. 252.
Perilampus japonicus, Sapporo, ASHMEAD, p. 151, J. N. York Ent. Soc. xii;
P. brasiliensis, Chapada, pl. xxxiv, fig. 4, p. 467, ASHMEAD, t. c. :
n. spp.
Pheidolozenus n. g. type *P. wheeleri* Ashm., ASHMEAD, t. c. p. 328.
Phlebotopones abdominalis, pertyi, pl. xxxvii, fig. 3, Brazil, ASHMEAD, t. c.
p. 492, **n. spp.**
Platyterma atamiense, Japan, ASHMEAD, p. 156, J. N. York Ent. Soc. xii,
n. sp.
Plesioctenodes n. g. type *P. brasiliensis*, Ashm., ASHMEAD, Chalcid. p. 243 ;
P. brasiliensis, Corumba, p. 400, id. t. c. **n. sp.**
Pleurotropis atamiensis, Japan, ASHMEAD, p. 160, J. N. York Ent. Soc. xii,
n. sp.
Plutothrix forsteri, Aachen, MAYR, p. 586, Verh. Ges. Wien liv, **n. sp.**
Podagrion quinqueidentatus, Japan, ASHMEAD, p. 84, J. N. York Ent.
Soc. xii; *P. cyaneus*, Santarem, ASHMEAD, Chalcid. p. 402, **n. spp.**
Polistomorpha nigromaculata, Panama, CAMERON, p. 96, Tr. Amer. ent.
Soc. xxx, **n. sp.**
Polynema brasiliensis, rufescens, Brazil, ASHMEAD, Chalcid. p. 521, **n. spp.**
Prodecatoma n. g. type *P. flavescens* Ashm., ASHMEAD, t. c. p. 261; *P.*
bruneiventris, p. 463, *flavescens*, pl. xxxiii, fig. 6, *thoracica, nigra*,
p. 464, Brazil, id. t. c. : **n. spp.**
Prospaltella n. n. for *Prospalta* How. 1894, ASHMEAD, p. 126, P. ent. Soc.
Washington vi.
Pseudochalcis conica, flavopicta, Brazil, ASHMEAD, Chalcid. p. 407, **n. sp.**
Pseudochalcis nigrocyanea, Brazil, pl. xxxiv, fig. 6, p. 468, ASHMEAD, t. c. ;
P. chilensis, Chile, KIEFFER, p. 242, Berlin. ent. Zeitschr. xlix : **n. spp.**
Psilochalcis n. g. p. 250, *P. longigena n. sp.*, Madagascar, p. 251, KIEFFER,
t. c.
Psychophagus n. g. for *Diglochis* Thoms. nec Först., MAYR, p. 598, Verh.
Ges. Wien liv.
Rileyia orbitalis, Santarem, ASHMEAD, p. 467, Chalcid. **n. sp.**
Sayella n. g. type *Smicra debilis* Say, ASHMEAD, t. c. p. 251.
Schizaspidia tenuicornis, Japan, ASHMEAD, p. 151, J. N. York Ent. Soc.
xii, **n. sp.**
Schwarzella n. g. type *S. arizonensis* Ashm., ASHMEAD, Chalcid. p. 256.
Scotolinx n. g. type *S. gallicola* Ashm., ASHMEAD, t. c. p. 354.
Scymnophagus n. g. type *S. townsendi* Ashm., ASHMEAD, t. c. p. 319.
Spalangia brasiliensis, Brazil, ASHMEAD, t. c. p. 502, **n. sp.**
Spathopus n. g. type *S. anomalipes* Ashm., ASHMEAD, t. c. p. 272.
Spilochalcis andrei n. n. for *flavescens* André, ASHMEAD, t. c. p. 418.
Spilochalcis: the following **n. spp.** are described by ASHMEAD, t. c.: *S.*
tarsalis, atrata, santaremensis, p. 428, *rufodorsalis, laticeps, nigro-*
petiolata, rufoscutellaris, p. 429, *flavobasalis, janeiroensis, flavoorbitalis*,
p. 430, *persimilis, unimaculata, perplexa*, p. 431, *imitator, simillimus,*
chapadæ, albomaculata, p. 432, *santarema, erythrogaster, flavoaxillaris*,
p. 433, *marginata, tuberculata, bidentata*, p. 434, *maculata, hempei,*
devia, p. 435, *nigropleuralis, corumbicola*, p. 436, *mulleri, howardi,*
insularis, trinidadensis, p. 437, *incongrua, mayri, timida*, p. 438, *bian-*
nulata, medius, cameroni, enocki, p. 439, *fusiformis, urichi, axillaris*,
p. 440, *trilineata, marshalli, morleyi*, p. 441, *apicalis, unilineata,*
lineocoxalis, fulleri, p. 442, *corumbensis, chapadæ, brancensis*, p. 443,
vagabunda, lanceolata, vau, incompleta, p. 444, *persimilis, hollandi,*
corumbæ, p. 445, *paraguayensis, dimidiata, meridionalis, tripunctata*,
p. 446, *bipunctata*, p. 447, *S. America*, ASHMEAD, t. c. **n. spp.**
Stenomeseioidea n. g. type *S. mellea* Ashm., ASHMEAD, t. c. p. 355.
Stenomeseius dimidiatus, Brazil, pl. xxxix, fig. 3, p. 519, ASHMEAD, t. c. **n. sp.**

- Stibula nigriceps*, Santarem, ASHMEAD, pl. xxxv, fig. 2, p. 468, t. c. **n. sp.**
Stigmatocrepis **n. g.** type *S. americana* Ashm., ASHMEAD, t. c. p. 273.
Stomatoceras hakonensis, clavicornis, Japan, ASHMEAD, p. 148, J. N. York Ent. Soc. xii, **n. spp.**
Stylophorella **n. g.** type *S. perplexa* Ashm., ASHMEAD, Chalcid. p. 275.
Sycoryctes philippinensis, Philippines, ASHMEAD, p. 342, Ent. News Philad. xv, **n. sp.**
Sycoscapterella **n. g.** type *Sycoscapter anguliceps* W., ASHMEAD, Chalcid. p. 239.
Sycoscapteridea **n. g.** type *Sycoscapter monilifer*, ASHMEAD, t. c. p. 239.
Sympiesis mikado, Japan, ASHMEAD, p. 164, J. N. York Ent. Soc. xii, **n. sp.**
Sympiesomorpha **n. g.** type *S. brasiliensis* Ashm., ASHMEAD, Chalcid. p. 352; *S. brasiliensis, obscura*, Brazil, p. 519, ASHMEAD, t. c. **n. spp.**; *S. japonica*, Gifu, ASHMEAD, p. 163, J. N. York Ent. Soc. xii : **n. spp.**
Syntomaspis aprilis, holcaspidea, p. 397, *flavicollis* p. 398, Brazil, ASHMEAD, t. c. **n. spp.**
Syrphophagus nigrocyaneus, Japan, ASHMEAD, p. 155, t. c. **n. sp.**
Systolodes brasiliensis, Chapada, ASHMEAD, p. 466, Chalcid. **n. sp.**
Tachardiaphagus **n. g.** type *T. thoracicus* Ashm., ASHMEAD, t. c. p. 303.
Tachinephagus **n. g.** type *T. zealandicus* Ashm., ASHMEAD, t. c. p. 304; *T. fuscipennis*, Japan, ASHMEAD, p. 155, J. N. York Ent. Soc. xii : **n. sp.**
Taftia **n. g.** *Ectromini*, *T. prodeniæ* **n. sp.**, Manila, ASHMEAD, p. 137, P. U. S. Mus. xxviii.
Tetranemopteryx **n. g.** type *Sycoscapter 4-setosa* Westw., ASHMEAD, Chalcid. p. 239.
Tetrasmicra **n. g.** type *Smicra concitata* Walk., ASHMEAD, t. c. p. 252.
Tetrastichodes pallidipes, Japan, ASHMEAD, p. 162, J. N. York Ent. Soc. xii, **n. sp.**
Tetrastichus philippinensis, Philippines, ASHMEAD, p. 15, t. c.; *T. hakonensis, atamiensis, tricolor*, Japan, ASHMEAD, p. 162, t. c.; *T. albitarsis, chapadæ, brasiliensis*, pl. xxxix, fig. 2, p. 515, *incongruus*, p. 516, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Thaumapus acuminatus, Santarem, ASHMEAD, p. 448, t. c. **n. sp.**
Thaumatella pulchripennis, Brazil, ASHMEAD, t. c. p. 406, pl. xxxi, fig. 2, **n. sp.**
Torymus mesembryanthemi, S. Africa, CAMERON, p. 109, Rec. Albany Mus. i; *T. japonicus, sapporoensis*, p. 82, *gifuensis*, p. 83, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *T. thomsoni*, Quebec, FYLES, p. 106, Canad. Ent. xxxvi; *T. wickhami*, Utah, ASHMEAD, p. 302, Ent. News Philad. xv; *T. chapadæ, smithi*, p. 398, *sylvicola*, p. 399, Brazil, ASHMEAD, Chalcid. : **n. spp.**
Trichencyrtus **n. g.** type *T. chapadæ* Ashm., ASHMEAD, p. 291, t. c.; *T. robustus*, Brazil, pl. xxxvii, fig. 5, p. 495, id. **n. sp.**
Trichochalcis **n. g.** p. 254, *T. inermis* **n. sp.**, Madagascar, p. 255, KIEFFER, Berlin. ent. Zeitschr. xlix.
Trichogramma japonicum, Gifu, ASHMEAD, p. 165, J. N. York Ent. Soc. xii, **n. sp.**
Trichoporus melleus, viridicyaneus, persimilis, Brazil, ASHMEAD, Chalcid. p. 512, **n. spp.**
Tridymus hakonensis, Japan, ASHMEAD, p. 152, J. N. York Ent. Soc. xii, **n. sp.**
Trigonoderus brasiliensis, Chapada, pl. xxxvi, fig. 4, p. 485, ASHMEAD, Chalcid. **n. sp.**
Trigonogastra **n. g.** type *T. aurata* Ashm., ASHMEAD, t. c. p. 330; *T. hakonensis*, Japan, ASHMEAD, p. 158, J. N. York Ent. Soc. xii, **n. sp.**
Trigonura dorsalis, Santarem, ASHMEAD, t. c. p. 406, **n. sp.**
Trismicra **n. g.** type *Smicra contracta* Walk., ASHMEAD, t. c. p. 252.

- Tropidogastra* **n. g.** type *T. arizonensis* Ashm., ASHMEAD, t. c. p. 323.
Uroderostenus **n. g.** type *U. pleuralis* Ashm., ASHMEAD, t. c. p. 343.
Uroentedon **n. g.** type *U. verticellata* Ashm., ASHMEAD, Chalcid. p. 341 ;
U. verticellatus, Brazil, pl. xxxviii, fig. 4, p. 505, id. **n. sp.**
Westwoodella **n. g.** type *Oligosita subfasciata* Westw., ASHMEAD, t. c.
p. 359.
Xanthoatomus **n. g.**, ASHMEAD, t. c. p. 360.
Xanthomelanus **n. g.** type *Chalcis dimidiata* Fab., ASHMEAD, Chalcid.
p. 251.
Xenocrepis pura, Aachen, MAYR, p. 584, Ver. Ges. Wien liv, **n. sp.**
Zagrammosoma **n. g.** type *Hippo. multilineata* Ashm., ASHMEAD, t. c.
p. 354.
Zaischnopsis, **n. n.** for *Ischnopsis* Ashm., ASHMEAD, p. 126, P. ent. Soc.
Washington vi.
Zuommomyia **n. g.** type *Chrysocharis stigmata* Ashm., ASHMEAD, Chalcid.
p. 340.

PROCTOTRYPIDÆ (incl. BETHYLIDÆ).

[Cf. ASHMEAD (44, 46, 47, 48), BRUES (190), CAMERON (224, 231), KIEFFER (793, 794, 798), KIEFFER & MARSHALL (799), MARCHAL (906), MAYR (928), WASSILIEFF (1489).]

The introductory matter of KIEFFER & MARSHALL, *Proctotrypidæ* of Europe and Algeria, is published (799).

Remarkable development of *Polygnotus minutus*, MARCHAL, Arch. Zool. exp. xxxii, pp. 300-315.

Allotropa japonica, Japan, ASHMEAD, p. 74, J. N. York Ent. Soc. xii, **n. spp.**

Amblyaspis japonica, Japan, ASHMEAD, p. 74, t. c. **n. sp.**

Anommatium ashmeadi, Aachen, MAYR, p. 592, Verh. Ges. Wien liv, **n. sp.**

Anopedias japonicus, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, **n. sp.**

Apenesia nigra, W. Africa, p. 364, *substriata*, Bolivia, p. 365, *punctata*, *unicolor*, W. Africa, p. 366, *proxima*, New Guinea, p. 367, *levis*, W. Africa, p. 368, KIEFFER, Ann. Mus. Genova xli, **n. spp.**

Aphanogmus hakonensis, Japan, ASHMEAD, p. 71, J. N. York Ent. Soc. xii, **n. sp.**

Bocchus atriceps, New York, BRUES, p. 118, Canad. Ent. xxxvi, **n. sp.**

Ceraphron manilæ, Philippines, ASHMEAD, p. 135, P. U. S. Mus. xxviii, **n. sp.**

Dendrocerus, characters, correction, ASHMEAD, p. 71, J. N. York Ent. Soc. xii.

D. ratzeburgi, Japan, ASHMEAD, p. 70, pl. vii, fig. 1, t. c. **n. sp.**

Diapria mitsukurii, Japan, ASHMEAD, p. 69, t. c. **n. sp.**

Discleroderma tuberculatum, description, KIEFFER, p. 372, Ann. Mus. Genova xli.

Dissolcus japonicus, *flavipes*, Japan, ASHMEAD, p. 73, J. N. York Ent. Soc. xii, **n. spp.**

Dissomphalus tibialis, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii ;
D. brevinervis, Sumatra, KIEFFER, p. 371, Ann. Mus. Genova xli : **n. spp.**

Dryinus stantoni, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii ; *D. nigrellus*, Long Island, BRUES, p. 117, Canad. Ent. xxxvi ; *D. brachycerus*, Argentina, p. 351, *niger*, Italy, p. 352, KIEFFER, Ann. Mus. Genova xli : **n. spp.**

Ecitopria proxima, Sardinia, *fusca*, Sumatra, KIEFFER, p. 378, t. c. **n. spp.**

Epyris bipartitus var. *n. sublevis*, KIEFFER, p. 407, t. c.

- E. foveatus*, Italy, p. 396, *interruptus*, New Guinea, p. 398, *armatitarsis*, Tunis, p. 399, *spiniscapus*, Erythrea, p. 400, *spinitarsis*, *breviscapus*, p. 402, *gracilipennis*, p. 403, *pilosipes*, p. 404, W. Africa, *striatus*, Burma, *geniculatus*, Erythrea, p. 406, *feai*, Bombay, p. 408, *tridentatus*, Guinea, p. 409, KIEFFER, t. c.; *E. albopilosus*, Darjiling, CAMERON, p. 307, Entomologist 1904; *E. atamensis*, Japan, ASHMEAD, p. 67, J. N. York Ent. Soc. xii; *E. flaviventris*, p. 526, *reticulatus*, p. 527, Texas, KIEFFER, Arkiv Zool. i : **n. spp.**
- Eupsenella herbsti*, Concepcion, KIEFFER, p. 142, Revist. chilena viii, **n. sp.**
- Gonatopus sjostedti*, Texas, KIEFFER, p. 525, Arkiv Zool. i; *G. cilipes*, Paraguay, *planiceps*, Tuscany, p. 355, *breviforceps*, Patagonia, p. 356, *longicornis*, Bolivia, p. 357, *albosignatus*, Tuscany, *unilineatus*, Sardinia, p. 358, *bilineatus*, p. 359, *bifasciatus*, p. 360, *camelinus*, p. 361, *gracilicornis*, p. 361, *dentatiforceps*, p. 362, Tuscany, KIEFFER, Ann. Mus. Genova xli : **n. spp.**
- Goniozus philippinensis*, Manila, ASHMEAD, p. 134, P. U. S. Mus. xxviii; *G. japonicus*, Gifu, ASHMEAD, p. 67, J. N. York Ent. Soc. xii; *G. longiceps*, Texas, KIEFFER, p. 529, Arkiv Zool. i; *G. brevicornis*, Nicaragua, KIEFFER, p. 382, Ann. Mus. Genova xli : **n. spp.**
- Hadronotus carinatifrons*, habits, GIRAULT, p. 337, Ent. News Philad. xv.
- H. philippinensis*, Manila, ASHMEAD, p. 11, J. N. York Ent. Soc. xii; *H. japonicus*, *hakonensis*, Japan, ASHMEAD, p. 74, t. c. : **n. spp.**
- Holepyris africanus*, Erythrea, p. 391, *bidentatus*, Sardinia, p. 392, *pedestris*, p. 393, *dubius*, Tuscany, *hyalinipennis*, Sardinia, p. 394, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Homoglenus tripartitus*, Guinea, KIEFFER, p. 388, t. c. **n. sp.**
- Hoplogryon sulcatus*, Texas, KIEFFER, p. 538, Arkiv Zool. i, **n. sp.**
- Hoploteleia rufidorsum*, Rio-Janeiro, KIEFFER, p. 533, t. c. **n. sp.**
- Lapitha nigriceps*, Brazil, KIEFFER, p. 537, t. c. **n. sp.**
- Lygocerus japonicus*, *koebelei*, Japan, ASHMEAD, p. 70, J. N. York Ent. Soc. xii, **n. spp.**
- Macrohynnys lepidus*, Aachen, MAYR, p. 593, Verh. Ges. Wien liv, **n. sp.**
- Macroteleia punctata*, Texas, KIEFFER, p. 532, Arkiv Zool. i, **n. sp.**
- Miota hakonensis*, Japan, ASHMEAD, p. 68, J. N. York Ent. Soc. xii, **n. sp.**
- Mystrocnemis africana*, Guinea, KIEFFER, p. 363, Ann. Mus. Genova xli, **n. sp.**
- Odontepyrus flavinervis*, Sumatra, KIEFFER, p. 378, t. c. **n. sp.**
- Oxylabis bifoveolatus*, New Jersey, BRUES, p. 119, Canad. Ent. xxxvi, **n. sp.**
- Parascleroderma nigriceps*, Tuscany, KIEFFER, p. 376, Ann. Mus. Genova xli, **n. sp.**
- Parasierola gestroi*, Sardinia, p. 380, *flavicoxis*, p. 381, *nigricoxis*, p. 382, Nicaragua, KIEFFER, t. c. **n. spp.**
- Pentacantha longicornis*, Texas, KIEFFER, p. 536, Arkiv Zool. i, **n. sp.**
- Perisemus fulvicornis*, supplemental note, NIELSEN, Ent. Meddel. ii, p. 333.
- P. coniceps*, p. 384, *dubius*, *mandibularis*, p. 385, *gestroi*, p. 386, Italy, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Polygnotus gifuensis*, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, **n. sp.**
- Pristocera erythrura*, Somaliland, KIEFFER, p. 387, Ann. Mus. Genova xli, **n. sp.**
- Proctotrypes*, *scymni*, p. 67, *japonicus*, p. 68, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *P. unidentatus*, Chile, KIEFFER, p. 145, Revist. chilena viii : **n. spp.**
- Proplatygaster* **n. g.** p. 144, *rufipes* **n. sp.**, Chile, p. 145, KIEFFER, t. c.
- Pseudisobrachium laticeps*, Bolivia, p. 368, *distinguendum*, Paraguay, *intermedium*, Sardinia, p. 369, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Rhabdepyris armatus*, New Guinea, p. 410, *R. ? albipes*, Paraguay, p. 411,

- KIEFFER, t. c.; *R. hæmorrhoidalis*, Texas, KIEFFER, p. 528, Arkiv Zool. i : **n. spp.**
- Ropronia garmani*, pl. xiv, p. 212, Ent. News Philad. xv.
- Sactogaster hakonensis*, Japan, ASHMEAD, p. 75, J. N. York Ent. Soc. xii, **n. sp.**
- Scaphepyris rufus*, description, KIEFFER, p. 370, Ann. Mus. Genova xli.
- Scelio striatigena*, p. 530, *bisulcatus*, p. 531, Texas, KIEFFER, Arkiv Zool. i, **n. spp.**
- Scleroderma cereicolle*, Guinea and Italy, p. 374, *luteicolle*, Burma, *nigrum*, Sumatra, *castaneum*, Ternate, p. 375, KIEFFER, Ann. Mus. Genova xli, **n. spp.**
- Spilomicrus japonicus*, Sapporo, ASHMEAD, p. 69, J. N. York Ent. Soc. xii, **n. sp.**
- Tanynotus* **n. g.** *Bethylinæ*, p. 140, *T. rufithorax* **n. sp.**, Cape Colony, p. 141, CAMERON, Rec. Albany Mus. i.
- Telenomus*, parthenogenesis, WASSILIEW, Zool. Anz. xxvii, p. 578.
- T. catacanthæ*, Philippines, ASHMEAD, p. 284, Canad. Ent. xxxvi; *T. atamiensis*, *nawai*, *mitsukurii*, p. 72, *hakonensis*, *gifuensis*, p. 73, Japan, ASHMEAD, J. N. York Ent. Soc. xii; *T. fimbriatus*, Wisconsin, KIEFFER, p. 539, Arkiv Zool. i : **n. spp.**
- Trissacantha striaticeps*, Texas, KIEFFER, p. 535, Arkiv Zool. i, **n. sp.**

CYNIPIDÆ.

- [Cf. ASHMEAD (46), BEUTENMÜLLER (119), CAMERON (224, 225), FROGGATT (562), KIEFFER (791, 795, 797), MATTEI (923), RÖSSIG (1189).]
- KIEFFER completes the Vol. on *Cynipides* etc., ANDRÉ's Hym. Eur. Alg. vii bis.
- List of types of *Cynipidæ* in the American Museum of Natural History, BEUTENMÜLLER (120).
- Postembryonal development of *Cynipidæ* larvæ: their glands, with other histology, RÖSSIG, Zool. Jahrb. Syst. pp. 19-70, pls. iii-vi.
- Anacharoides* **n. g.** *Anacharinæ*, *A. striaticeps* **n. sp.**, Cape Colony, CAMERON, p. 160, Rec. Albany Mus. i.
- Andricus targionii*, gall, TROTTER, p. 86, Marcellia iii.
- A. japonicus*, Hakone, ASHMEAD, p. 81, J. N. York Ent. Soc. xii, **n. sp.**
- Bothrochalcis* **n. g.** *Eucoilinæ*, p. 163, *B. erythropoda* **n. sp.**, Grahamstown, p. 164, CAMERON, Rec. Albany Mus. i.
- Callirhytis hakonensis*, p. 81, *tobiuro*, p. 82, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. sp.**
- Cynips* **n. sp.**? gall, TROTTER, p. 10, cut, Marcellia iii.
- Dryophanta japonica*, p. 79, *serrate*, *brunneipes*, *nawai*, p. 80, *hakonensis*, *mitsukurii*, p. 81, Japan, ASHMEAD, J. N. York Ent. Soc. xii, **n. spp.**
- Hypodiranchis aphidæ*, Australia, FROGGATT, p. 612, Agric. Gaz. N. S. W. xv, **n. sp.**
- Neuroterus nawai*, *atemiensis*, *hakonensis*, Japan, ASHMEAD, p. 79, J. N. York Ent. Soc. xii, **n. spp.**
- Oberthurella tibialis*, Cameroons, KIEFFER, p. 107, Ent. Tidskr. xxv, **n. sp.**
- Onychia japonica*, Japan, ASHMEAD, p. 76, J. N. York Ent. Soc. xii, **n. sp.**
- Paraulax* **n. g.** p. 43, *perplexus* **n. sp.**, Chile, p. 44, KIEFFER, Revist. chilena viii.
- Rhodites hakonensis*, Japan, ASHMEAD, p. 82, J. N. York Ent. Soc. xii, **n. sp.**
- Synergus atemiensis*, p. 77, *gifuensis*, *hakonensis*, p. 78, Japan, ASHMEAD, t. c. **n. spp.**
- Xyalaspis atemiensis*, Japan, ASHMEAD, p. 76, t. c. **n. sp.**
- Xystus japonicus*, Japan, ASHMEAD, p. 77, t. c. **n. sp.**

SESSILIVENTRES.

SIRICIDÆ and CEPHIDÆ.

[Cf. ASHMEAD (42), MOCSÁRY (953).]

KONOW continues his synopsis of *Chalastogastra*, pp. 225–288, *Cephini* and *Xyelini*, as part of Zeitschr. Hym. Dipt. iv.

Janus compressus, habits, metamorphosis, JABLONOWSKI, pp. 67–72 & 89–94, Rov. Lapok xi.

Paururus pinicola, characters ♂, ASHMEAD, p. 64, Canad. Ent. xxxvi.

P. californicus, *hopkinsi*, N. America, id. l. c. **n. spp.**

Sirex augur, metamorphosis, XAMBEU, p. 167, Ann. Soc. Linn. Lyon l.

S. taxodii, *fiskei*, N. America, ASHMEAD, p. 63, Canad. Ent. xxxvi, **n. spp.**

Syrista similis, Japan, *speciosa*, Tonkin, MOCSÁRY, p. 496, Ann. Mus. Hungar. ii, **n. spp.**

Tremex atratus, Tonkin, MOCSÁRY, p. 498, t. c. **n. sp.**

Xiphydria melanaria, *varia*, Tonkin, MOCSÁRY, p. 497, t. c. **n. spp.**

TENTHREDINIDÆ.

[Cf. BISSCHOPP (131), CAMERON (236), DONCASTER (402), KONOW (833–838), MOCSÁRY (951), VAN ROSSUM (1190), SAUSSURE (1218).]

MORICE continues his notes on British *Tenthredinidæ*, Ent. Mag. xl, passim.

Tenthredinoidea of Alaska, KINCAID (801).

ADELUNG has notes on the *Tenthredinidæ* enumerated and described by Konow last year, Annuaire Mus. St. Petersb. viii. T. c. pp. xxxvii, xxxviii.

Parthenogenesis of *Nematus*, DONCASTER, P. Cambridge Soc. xii, pp. 474–476.

Allantus viduus, sexes, ZAVATTARI, p. 2, Boll. Mus. Torino xix, No. 482 ;

A. jacutensis ♂, KONOW, p. 268, Zeitschr. Hym. Dipt. iv.

Amauronematus poppii, p. 260, *spurcus*, p. 261, N. Europe, KONOW, t. c. **n. spp.**

Antholcus n. g. for *Tenthredo varinervis* Spin., KONOW, p. 3, t. c.

Arge uncina, *petacacia*, p. 237, *braunsi*, p. 238, E. Africa, KONOW, t. c. **n. spp.**

Athalia rufoscutellata var. *n. obscurata*, KONOW, p. 264, t. c.

A. leucostoma, Kashmir, CAMERON, p. 108, Zeitschr. Hym. Dipt. iv, **n. sp.**

Atomaceros Ashm., without type, KONOW, p. 239, Zeitschr. Hym. Dipt. iv.

Blennocampa geniculata, injurious in Sweden, characters of larva and of others allied, the larvæ found on *Fragaria*, TULLGREN, pp. 230–236, Ent. Tidskr. xxv.

Cimber, saws (continued from last year), BISSCHOP VAN TUINEN, Tijdschr. Ent. xlvii, pp. 177–180, pls. xii, xiii ; *C. fagi*, life-history, parasites, VAN ROSSUM, pp. 69–98, pls. 3–5, Tijdschr. Ent. xlvii.

Clavellaria konowi, Tonkin, *gracilentia*, Amurland, FRIESE, p. 351, Zeitschr. Hym. Dipt. iv, **n. spp.**

Distega n. g. p. 244 [2], near *Blennocampa*, *D. sjostedti*, p. 245 [2], **n. sp.**, S. Africa, KONOW, Zeitschr. Hym. Dipt. iv.

Dolerus ephippiatus = (*umbraticus* Marl. = *affinis* Cam.), KONOW, p. 265, t. c.

Emphytus didymus var. *n. niger*, KONOW, p. 264, t. c.

Entodecta beckeri, Caucasus, KONOW, p. 4, t. c. **n. sp.**

Lubidarge, table of tropical American, KONOW, pp. 231–233, Zeitschr. Hym. Dipt. iv.

- L. scitula*, Peru, p. 233, *adusta*, *fucosa*, *parca*, p. 234, *immunda*, Costa Rica, *vitreata*, p. 235, *nubeculosa*, *vulga*, p. 236, Brazil, KONOW, t. c. **n. spp.**
- Lagium* **n. g.** for *Tenth. atrovioleaceum* Nort., and *irritans* Sm., and *platyceros* Marl., KONOW, p. 246 [2], t. c.
- Leptocercus duplex*, larva, CARPENTIER, p. 46, Zeitschr. Hym. Dipt. iv.
- Lygæonematus*, revision, KONOW, pp. 193–208, 248–260, Zeitschr. Hym. Dipt. iv.
- L. gerulus*, p. 199, *pallidus*, p. 204, *pædidus*, p. 205, *friesei*, p. 208, *dæbelii*, p. 249, *corpulentus*, p. 252, *boreus*, *pachyvalvis*, p. 253, *alpicola*, p. 254, North and Centr. Europe, KONOW, t. c. **n. spp.**
- Macrophya annulicornis*, Saghalin Island, p. 266, *hispana*, Madrid, p. 267, KONOW, t. c. **n. spp.**
- Megalodontes merceti*, p. 226, *capitalatus*, p. 227, *mundus*, p. 228, Spain, *nigritegulis*, Ural Mts., p. 229, KONOW, t. c. **n. spp.**
- Monostegia antipoda*, validity, KIRBY, p. 84, Entomologist 1904.
- Pachynematus glesipennis*, Siberia, p. 25, *zaddachi*, Europe, p. 26, *lichtwardti*, Altvater Mts., *pullus*, Europe, *foveolatus*, Siberia, p. 31, *alpestris*, p. 146, *nigerrimus*, p. 148, *gehrs*, p. 149, Europe, *vaginosus*, p. 151, Siberia, *legirupus*, Europe, *saunio*, Siberia, p. 153, *lentus*, p. 154, *sagulatus*, *ravidus*, p. 155, *pumilio*, p. 156, [n. spp. last year] fully described, KONOW, Zeitschr. Hym. Dipt. iv.
- Perichista mutabilis*, Texas, KONOW, p. 241 [2], t. c. **n. sp.**
- Phyllotoma leucomelæna* Kl. = (*aceris* McLachl.), KONOW, p. 264, t. c.
- Pontania poppii*, *arcticornis*, North Russia, KONOW, p. 230, t. c. **n. spp.**
- Poppia* **n. g.** near *Phyllotoma*, *P. athalioides* **n. sp.**, E. Siberia, KONOW, p. 263, t. c.
- Priophorus æqualis* ♀, KONOW, p. 240, t. c.
- Ptenus nigripectus* Nort. ♀, KONOW, p. 239, t. c.
- Pteronus*, synonymical catalogue, KONOW, pp. 41–44, t. c. ; *P. brevivalvis*, *polyspilus*, larvæ, CARPENTIER, t. c. p. 46 ; *P. miliaris* and *cadderensis*, colour of larvæ, VAN ROSSUM, p. 108, Ent. Ber. Nederland. i ; *P. ribesii*, proportions of sexes, LOISELLE, p. 235, Feuille Natural. xxxiv.
- P. pallens*, Irkutsk, p. 34, *kriegeri*, p. 35, *minus*, p. 38, Centr. Europe, KONOW, Zeitschr. Hym. Dipt. iv ; *P. dossuarius*, E. Siberia, *fastosus*, Lapland, KONOW, p. 262, t. c. : **n. spp.**
- Ptilia lauta*, Costa Rica, KONOW, p. 239, t. c. **n. sp.**
- Rhogogastera fulvipes*, larva, CARPENTIER, p. 46, Zeitschr. Hym. Dipt. iv.
- Selandria* (*Monophadnus*) *paviei*, Siam, pl. xii, fig. 6, p. 202, SAUSSURE, Mission Pavie iii, **n. sp.**
- Taxonus delumbis* ♂, KONOW, p. 265, Zeitschr. Hym. Dipt. iv.
- Tenthredo atra* var. *n. nobilis*, KONOW, p. 269, t. c.
- Tenthredopsis albata*, Transcaucasus, p. 267, *nigroscutellata*, Irkutsk, p. 268, KONOW, t. c. **n. spp.**
- Tomostethus kirbyi*, Mexico = (♀ *Monoph. erebus* K.), KONOW, p. 241 [2], t. c. **n. sp.**
- Waldheimia*, characters and components, KONOW, p. 242 [2], t. c.
- W. atra*, *galerita*, p. 243 [2], *pellucida*, p. 244 [2], S. America, id. t. c. **n. spp.**

(C.) *LEPIDOPTERA.*

Glands, BORDAS (148) and C.R. Soc. Biol. lvii, pp. 474-476.

Notes on habits of various larvæ, XAMBEU (1539).

Radio-activity effect on *Lep.* pupæ, TOMALA (1391).

Alaska *Lepidoptera*, reprint, DYAR (440).

List of additional types of *Lep.* in the American Museum, Natural History, BEUTENMÜLLER (122).

Notes, in Russian, on Staudinger and Rebel's Catalogue, ALPHÉRAKY (25).

Interesting points, popular address, JANET (761).

Cocoons, coloration of, VERNON (1443), DEWITZ (376).

OUDEMANS has a note on the views of STANDFUSS and himself as to the position of the wings in repose, Biol. Centrbl. xxiv, pp. 473, 474.

Catalogue of gynandromorphic Palæarctic *Lepidoptera*, SCHULTZ, Allg. Zeitschr. Ent. ix, pp. 304-310.

Descriptive Catalogue of gynandromorphic *Lep.*, part IV, SCHULTZ, Berlin. ent. Zeitschr. xlix, pp. 71-116.

Table of the families of Palæarctic *Lepidoptera*, HORMUZAKI (707).

The number of species of European *Lep.* of which the eggs are known, SLEVOGT, p. 11, Soc. ent. xix.

Lepidoptera infested by Pebrine, LUTZ & SPLENDORE (893).

RHOPALOCERA.

Classification of Indian *Rhopalocera*, note supplementary to paper of last year, YOUNG, p. 498, J. Bombay Soc. xv.

Distribution of Indian *Rhopalocera*, YOUNG (1542).

Synonymic Catalogue of *Rhopalocera* in the Bombay collection, YOUNG, J. Bombay Soc. xv, pp. 483-497.

Rhopalocera of Ceylon, peculiarities, distribution etc., MANDERS, J. Bombay Soc. xvi, pp. 76-85.

Migration of butterflies in Ceylon, MANDERS, pp. 703-706, Tr. ent. Soc. London 1904.

Annotated list of *Rhopalocera* of Borneo, part I (*Danainæ* to *Amathusiinæ*), SHELFORD, J. Straits Asiat. Soc. xli, pp. 81-111.

An account of the *Rhopalocera* collected by Burchell in Brazil, 1825-1830, is given by SANDERS & POULTON, Ann. Nat. Hist. xiii, pp. 305 etc., pl. vi.

Rhopalocera of Trinidad, catalogue, 289 spp., KAYE, pp. 159-228, pls. xvii, xviii, Tr. ent. Soc. London 1904.

Rhopalocera of Saône-et-Loire, ANDRÉ (31).

The *Rhopalocera* of Bosnia and Herzegovina, REBEL, Ann. Hofmus. Wien xix, pp. 142-192.

LATHY briefly describes 45 aberrations of exotic *Rhopalocera* and figures several of them, Tr. ent. Soc. London 1904, pp. 65-70, pl. x.

Enemies of butterflies, various notes, J. Bombay Soc. xv, pp. 530, 531.

Sensitiveness of butterflies to light, PARKER (1011).

"Tails" of the wings discussed, PIEPERS (1083).

Some eggs described, BACOT & TUTT, pp. 53-56, 108, Ent. Rec. xvi.

PAPILIONIDÆ.

[Cf. ALPHÉRAKY (25), AURIVILLIUS (64), EHRMAN (447), FRUHSTORFER (567), LEIGH (871), MOORE (956), NEAVE (977), RIPPON (1174), ROTHSCHILD (1194, 1197, 1199), SCHULTZ (1248), SUFFERT (1353).]

MOORE completes the Indian *Papilionidæ* in his work, Lep. ind. vi, pp. 105-124, pls. 513-517.

Ornithoptera, monograph, part 17, the following figured, *Trogonoptera trojana* ♀, pl. 28, *P. miranda* ♂, pl. 66A, ♀, pl. 66B, ♀ var. pl. 66C, RIPPON (1174); *O. ritsemæ* var. n. *tantalus*, EHRMAN, p. 214, Ent. News Philad. xv.

O. cambyses, Ceylon, EHRMAN, p. 215, t. c. n. sp.

Papilio bridgei togonis and *ortegæ* subsp. n., ROTHSCHILD, p. 453, Nov. Zool. xi; *P. galienus peculiaris*, pl. i, fig. 7, and *whitnalli* subsp. n., NEAVE, p. 342, Nov. Zool. xi; *P.*, numerous African subsp. n., SUFFERT, pp. 90-107, Deutsche ent. Zeitschr. Iris xvii; *P. aristolochiæ antiphulus* subsp. n., FRUHSTORFER, p. 302, Deutsche ent. Zeitschr. Iris xvi; *P.*, subsp. n., FRUHSTORFER (566); *P. polydorus asinius* subsp. n., p. 305, *P. agamemnon kineas* and *appius* subsp. n., pp. 306, 307, FRUHSTORFER, Ent. Meddel. ii; *P. jason sankapura* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904; *P. eurypilus lepidus* subsp. n., *echidna echidnides* subsp. n., FRUHSTORFER, p. 141, t. c.; *P. macareus indochinensis* and *argentiferus*, FRUHSTORFER, p. 131, cuts, t. c.; *P.*, numerous subsp. n., FRUHSTORFER, pp. 180, 181, t. c.; *P. canopus kallon* subsp. n., FRUHSTORFER, p. 157, t. c.; *P. philolaus ab. felicis*, FRUHSTORFER, p. 25, Soc. ent. xix; *P. agamemnon atropictus* subsp. n., FRUHSTORFER, p. 195, Berlin. ent. Zeitschr. xlix; *P. merope*, characters of allied forms, table, TRIMEN, p. 691, Tr. ent. Soc. London 1904; *P. cenea*, life-history, bred varr., LEIGH & POULTON, pp. 677-688, pl. xxxi, Tr. ent. Soc. London 1904; *P. homerus*, larval habits, SWAINSON, p. lv, P. ent. Soc. London 1904.

P. schultzei, Cameroons, AURIVILLIUS, p. 363, Ins. Börse 1904; *P. boosi*, p. 89, pl. i, fig. 2, *chrupkowskii*, p. 98, pl. ii, fig. 2, *mobii*, p. 104, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii; *P. klagesi*, Venezuela, EHRMAN, p. 215, Ent. News Philad. xv : n. spp.

Parnassius, notes on Fruhstorfer's varr., ELWES, pp. 388, 389, Deutsche ent. Zeitschr. Iris xvi; *P.*, melanic varr., OBERTHÜR, p. 174, Bull. Soc. ent. France 1904; *P. nomion*, note, KRULIKOVSKY, p. 90, Rev. Russe Ent. iv; *P. nomion titan* subsp. n., p. 308, *P. apollonius gloriosus* subsp. n., p. 309, FRUHSTORFER, Deutsche ent. Zeitschr. Iris xvi; *P. acco gemmifer* subsp. n., FRUHSTORFER, p. 25, Soc. ent. xix; *P. nordmanni* var. n. *trimaculata*, SCHAPOSCHNIKOV, p. 191, Annuaire Mus. St. Petersburg. ix; *P. mnemosyne* var. n. *halteres*, MUSCHAMP, p. 52, Ent. Rec. xvi, oviposition id. l.c.; *P.*, 16 varr. described and three figured, SCHULTZ, pp. 274-281, pl. iii, Berlin. ent. Zeitschr. xlix; *P. delphiuss albulus*, variation, 7 subvarr. distinguished and named, HUWE, pp. 314-328, Berlin. ent. Zeitschr. xlix.

Thais cerisyi var. n. *cretica*, REBEL, p. 2, Verh. Ges. Wien liv.

Troides goliath goliath, and *T. goliath titan*, ROTHSCHILD, p. 310, Nov. Zool. xi; *T. victoriæ rubianus* subsp. n., ROTHSCHILD, p. 654, t. c.; *T. haliphron ikarus* subsp. n., FRUHSTORFER, p. 157, Ins. Börse 1904; *T. haliphron ikarus* subsp. n., FRUHSTORFER, p. 140, Deutsche ent. Zeitschr. Iris xvii.

T. chimæra, New Guinea, ROTHSCHILD, p. 311, pl. iii, fig. 25, Nov. Zool. xi, n. sp.

PIERIDÆ.

[Cf. ALPHÉRAKY (25), BUTLER (207, 208), DANNATT (351), FAWCETT (492), FRUHSTORFER (565), GOELDI (616), KAYE (775), MANDERS (901), MOORE (956), NEAVE (977), REBEL (1122), ROTHSCILD (1194, 1197), SHARPE (1286), SUFFERT (1353, 1354), TRIMEN (1394).]

Danaus to be used for *Pieris brassicæ* etc., MOORE, Lep. ind. vi, p. 126, Indian species described and figured, pp. 127–136, pls. 518–520.

Migration of *Pieridæ* in the Amazons, *Eurema* and *Catopsilia*, GOELDI (615).

The scent of males, DIXEY, pp. lvi–lx, P. ent. Soc. London 1904, LONG-STAFF, t. c. p. lxxxix.

Aporia crategi, measurements of wings, BACHMETJEW (72).

Appias rhodope dopero subsp. n., SUFFERT, p. 76, Deutsche ent. Zeitschr. Iris xvii.

A. weberi, p. 73, *bachi*, p. 74, *udei*, p. 75, *hændeli*, p. 76, Africa, SUFFERT, t. c. n. spp.

Belenois gidica, *abyssinica* and *westwoodi*, relations, BUTLER, p. 426, Ann. Nat. Hist. xiii.

Callidryades, seasonal phases, synonymy, BUTLER, pp. 410–414, op. cit. xiv.

Catopsilia pyranthe varr., MANDERS, pp. 701–703, pl. xxxiv, Tr. ent. Soc. London 1904; *C. eubule*, range, HOLLAND & WOOD, p. 41, Ent. News Philad. xv.

Colias myrmidone balcanica varr., REBEL, p. 148, pl. iv, Ann. Hofmus. Wien xix; *C. eogene miranda* and *C. phicomone phile*, discussed, ELWES, pp. 389, 390, Deutsche ent. Zeitschr. Iris xvi; *C. eogene* var. *leechi*, pl. ix, figg. 10, 10A, p. 140, synonymy, p. 141, FAWCETT, P. Z. S. 1904, ii; *C. electra*, pale form, pl. xx, fig. 7c, melanic form, fig. 7d, TRIMEN, p. 243, Tr. ent. Soc. London 1904; *C. edusa* ab. n. *velata*, RAGUSA, p. 42, Natural. Sicil. xvii; *C. edusa* ab. n. *cærulea*, VERITY, p. 54, Entomologist 1904; *C. edusa*, early stages, HARRISON, pp. 172–176, Ent. Rec. xvi.

C. berylla, pl. ix, fig. 8, p. 139, *nina*, fig. 9, p. 140, Khamba Jong, FAWCETT, P. Z. S. 1904, ii, n. spp.

Delias, New Guinea species, notes on, pp. 312–317, *D. kummeri* f. *ligata*, n. pl. ii, fig. 20, *cuningputi* ♀, figg. 5, 6, *aroe* ♀, fig. 4, *weiskei* n. n. for *Tachyris weiskei* Ribbe, *itamputi* ♀, figg. 10, 11, *niépelti* ♀, fig. 3, ROTHSCILD, Nov. Zool. xi; *D. schoenbergi choiseuli* subsp. n., ROTHSCILD, p. 453, t. c.; *D. timorensis gardineri* n. n., FRUHSTORFER, p. 141, Ins. Börse 1904; *D. timorensis gardineri* subsp. n. (*vishnu* Moore, probably = *timorensis*), FRUHSTORFER, pp. 345, 346, Stettin Ent. Zeit. lxv.; *D. dice* and allies, FRUHSTORFER, pp. 307, 308, Ent. Meddel. ii.

D. dives, pl. ii, fig. 14, p. 313, *clathrata*, figg. 7–9, *microsticha*, figg. 18, 19, *mira*, figg. 12, 13, p. 315, *eichhorni*, figg. 15–17, *meeki*, figg. 1, 2, p. 316, ROTHSCILD, Nov. Zool. xi; *D. alberti*, Solomon islds., ROTHSCILD, p. 454, t. c.; *D. hempeli*, Gilolo, DANNATT, p. 173, pl. vii, fig. 3, Entomologist 1904 : n. spp.

Dismorphia broomeæ ♀, KAYE, p. 201, Tr. ent. Soc. London 1904.

Eronia, African n. subsp., SUFFERT, pp. 85–89, Deutsche ent. Zeitschr. Iris xvii.

Gonepteryx rhamni var. *cleopatra*, LUCAS, p. 240, Entomologist 1904.

Herpencia eriphia var. n. *straminea*, AURIVILLIUS, p. 4, cut, Jägerskiöld exp. 8; *H. lacteipennis* = (*eriphia* var. *straminea* Auriv.), BUTLER, p. 428, Ann. Nat. Hist. xiii.

Huphina ethel, pl. ii, fig. 3, p. 200, FRUHSTORFER, Berlin. ent. Zeitschr. xlix.

- Itaballia* **n. g.** for *Pieris pandosia* Hew., KAYE, p. 204, Tr. ent. Soc. London 1904.
- Mylothris*, African subsp. n., SUFFERT, pp. 72, 73, Deutsche ent. Zeitschr. Iris xvii.
- M. tirikensis*, Victoria Nyanza, pl. 1, fig. 9, p. 341, NEAVE, Nov. Zool. xi ; *M. beethoveni*, p. 70, *schumanni*, p. 71, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii ; *M. ertli*, Victoria Nyanza, SUFFERT, p. 127, pl. iii, fig. 6, t. c. : **n. spp.**
- Nepheronia valeria kungeana* subsp. n., FRUHSTORFER, p. 347, Stettin Ent. Zeit. lxxv.
- Pieris*, African subsp. n., SUFFERT, pp. 80–83, Deutsche ent. Zeitschr. Iris xvii ; *P. dentigera ratidengi* subsp. n., SUFFERT, p. 128, Deutsche ent. Zeitschr. Iris xvii ; *P. rapæ* ab. n. *carruccii*, ROSTAGNO, p. 123, Boll. Soc. zool. Ital. xii ; *P. rapæ* ab. n. *longomaculata*, ROSTAGNO, p. 168, op. cit. xiii ; *P. napi* var. *intermedia*, JACHONTOV, pp. 15–18, Rev. Russe Ent. iv ; *P. napi* ab. n. *heptapotamica*, KRULIKOVSKY, p. 90, t. c. ; *P. brassicæ*, migration southern, in 1903, VERITY, pp. 5, 6, Bull. Soc. ent. Ital. xxxvi ; *P. brassicæ*, measurements of wings, AUÉL (56).
- P. leachii*, Ladak, MOORE, p. 150, Lep. ind. vi ; *P. glucki, abti*, p. 77, *kuckeni*, p. 78, *wagneri, lortzingi*, p. 79, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Pinacopteryx dixeyi*, Victoria Nyanza, pl. i, fig. 10, p. 341, NEAVE, Nov. Zool. xi, **n. sp.**
- Saletara panda engania* subsp. n., FRUHSTORFER, p. 347, Stettin Ent. Zeit. lxxv.
- Tachyris ada bandana* subsp. n., FRUHSTORFER, p. 197, Ins. Börse 1902 ; *T. weiskei*, cf. *Delias*.
- T. cerussa*, Queensland, FRUHSTORFER, p. 157, Ins. Börse 1904, **n. sp.**
- Teracolus*, African subsp. n., SUFFERT, pp. 128, 129, Deutsche ent. Zeitschr. Iris xvii ; *T. bacchus hydrophobus*, *T. ione aurivillii*, subsp. n., SUFFERT, p. 85, t. c. ; *T. phleggyas* var., AURIVILLIUS, p. 5, Jägerskiöld exp. No. 8 ; *T. nouma*, food-plant, WALSHINGHAM, p. 99, Ent. Mag. xl.
- T. flotowi*, p. 83, *schuberti*, p. 84, Africa, SUFFERT, Deutsche ent. Zeitschr. Iris xvii ; *T. luderitzi*, p. 129, pl. iii, fig. 8, *wissmanni*, p. 130, pl. iii, fig. 9, E. Africa, SUFFERT, t. c. ; *T. xantholeuca*, Africa equat., SHARPE, p. 133, Entomologist 1904 : **n. spp.**

DANAIDÆ and ITHOMIIDÆ.

[Cf. FRUHSTORFER (567, 570), KAYE (775), LOWE (887), NEAVE (977), SHELFORD (1289), SUFFERT (1353), SWINHÖE (1364), THIEME (1381).]

Catalogue of *Danaina*, LOWE (887).

Subfam. *Lycoreanæ*, KAYE, p. 162, Tr. ent. Soc. London 1904.

Numerous subsp. n. from Malay Archipelago, FRUHSTORFER, pp. 291–304, Ent. Meddel. ii.

Amauris tartarea reata subsp. n., SUFFERT, p. 13, Deutsche ent. Zeitschr. Iris xvii.

A. dira, Victoria Nyanza, pl. i, fig. 1, p. 324, NEAVE, Nov. Zool. xi ; *A. mozarti*, Cameroons, SUFFERT, p. 12, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**

Betanga moluccana, Obi, SWINHÖE, p. 417, Ann. Nat. Hist. xiv, **n. sp.**

Calliplæa kuhniiana subsp. n., FRUHSTORFER, p. 157, Ins. Börse 1904 ; *Ü.*, subsp. n., FRUHSTORFER, pp. 26, 28, 36, 61, 67, 68, 73, Soc. ent. xix.

C. phokion, New Guinea, id. p. 28, *liza*, Dammer isld., *menamoides*, Babber, p. 67, id. t. c. **n. spp.**

- Euplœa phænareta* n. subsp., FRUHSTORFER, p. 303, Deutsche ent. Zeitschr. Iris xvi; *E. moorei thiemei* subsp. n., FRUHSTORFER, p. 166, Berlin. ent. Zeitschr. xlix; *E. crameri lanista* subsp. n., id. t. c. p. 168; *E. dufresnei nica* subsp. n., FRUHSTORFER, p. 180, Berlin. ent. Zeitschr. xlix; *E. compta adorabilis* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904; *E. spiculifera praxithea* subsp. n., p. 73, *E. compta virudha* subsp. n., p. 74, FRUHSTORFER, Soc. ent. xix; *E. climena valeriana* subsp. n., FRUHSTORFER, p. 157, Ins. Börse 1904; *E. deheeri* subsp. n., FRUHSTORFER, pp. 29, 36, Soc. ent. xix; *E. amymome, godarti*, one species, POULTON, P. ent. Soc. London 1904; *E.*, Bugong error, DIXEY, pp. ix-xiii, Tr. ent. Soc. London 1904.
- E. radica*, Obi, FRUHSTORFER, p. 301, Ent. Meddel. ii, **n. sp.**
- Heterosais ocalea*, egg and larva, GUPPY, p. 225, Tr. ent. Soc. London 1904.
- Leucothyris phenomoe* subsp. n. *burchelli*, pl. vi, figg. 1, 2, SANDERS, p. 315, Ann. Nat. Hist. xiii.
- Lycorea ceres*, ovum and larva, GUPPY, p. 225, Tr. ent. Soc. London 1904.
- Mechanitis vulcanota*, Peru, RÖBER, p. 105, Soc. ent. xix, **n. sp.**
- Nectaria*, subsp. n., FRUHSTORFER (566); *N., idea*, n. subsp., FRUHSTORFER, p. 205, Ins. Börse 1904.
- Penoa kheili* ♀, THIEME, p. 163, Berlin. ent. Zeitschr. xlix.
- Salpinx assimidata bandana* subsp. n., FRUHSTORFER, p. 36, Soc. ent. xix.
- Stictoplaea dufresnei nica* subsp. n., FRUHSTORFER, p. 344, Stettin Ent. Zeit. lxxv.
- S. convallaria*, Nias isld., THIEME, p. 163, Berlin. ent. Zeitschr. xlix, **n. sp.**
- Tithorea megara*, early stages, GUPPY, p. 225, pl. xviii, fig. 3, Tr. ent. Soc. London 1904.
- Tronga* and *Menama*, the subspecies, FRUHSTORFER, pp. 167, 168, Berlin. ent. Zeitschr. xlix.

ACRÆIDÆ and HELICONIDÆ.

[Cf. AURIVILLIUS (61), BETHUNE-BAKER (117), NEAVE (977), SHARPE (1286, 1287), SUFFERT (1353, 1354), TRIMEN (1394).]

- Acræa*, many African subsp. n. described, pp. 18-34, SUFFERT, Deutsche ent. Zeitschr. Iris xvii; *A. doubledayi equatorialis* subsp. n., p. 327, *oreas albimaculata* nov. f., p. 329, NEAVE, Nov. Zool. xi; *A. rahira* and varr., pl. xix, fig. 1, p. 231, TRIMEN, Tr. ent. Soc. London 1904.
- A. cinerea*, pl. i, fig. 16, p. 325, *wigginsii*, fig. 3, p. 326, *mystica, clareii*, fig. 4, p. 327, *byatti*, fig. 17, p. 328, Victoria Nyanza, NEAVE, Nov. Zool. xi; *A. leucopyga*, p. 92, *mairessei*, p. 93, *ertli*, p. 94, Africa, AURIVILLIUS, Ent. Tidskr. xxv, with cuts; *A. diogenes*, p. 14, *brahmsii*, p. 15, pl. iii, fig. 4, *liszti*, p. 17, Africa, SUFFERT, Deutsche ent. Zeitschr. xvii; *A. rohlfsii*, E. Africa, SUFFERT, p. 124, pl. iii, fig. 5, Deutsche ent. Zeitschr. Iris xvii; *A. catori*, Sierra Leone, BETHUNE-BAKER, p. 223, Ann. Nat. Hist. xiv; *A. harrisoni*, Nyangori, SHARPE, p. 132, Entomologist 1904; *A. melanosticta*, Toro, SHARPE, p. 181, Entomologist 1904: **n. spp.**
- Planema*, numerous subsp. n., SUFFERT, pp. 34-39, Deutsche ent. Zeitschr. Iris xvii.
- P. haydni*, Usambara, id. p. 34, t. c. **n. sp.**

NYMPHALIDÆ.

[Cf. ALPHÉRAKY (25), AURIVILLIUS (61), BETHUNE-BAKER (117), DANNATT (351), DYAR (422), FAWCETT (492), FIELD (499, 500), FLETCHER (515, 516), FRUHSTORFER (567), LATHY (860), LEIGH (871), NEAVE (977),

C. OBERTHÜR (1987), ROTHSCILD (1194, 1197), SHARPE (1286, 1287), SHELFORD (1289), SUFFERT (1353, 1354, 1355A), SWINHÖE (1364), THIEME (1379).]

- Acca obiana*, Obi, SWINHÖE, p. 418, Ann. Nat. Hist. xiv, **n. sp.**
- Antanartia amauroptera*, Toro, SHARPE, p. 181, Entomologist 1904, **n. sp.**
- Apatura ilia* varr. n., SCHULTZ, pp. 129-134, Abh. Ges. Grlitz xxiv.
- Apaturina erminea xanthocera* subsp. n., ROTHSCILD, p. 452, Nov. Zool. xi ;
A. erminia erinna, p. 329, figg. 3, 4, *erminia octavia*, fig. 5, other
 subsp. n. pp. 328-332, FRUHSTORFER, Ent. Meddel. ii.
- Argynnis pales* subsp. n., FRUHSTORFER, p. 306, Deutsche ent. Zeitschr.
 Iris xvi ; *A. paphia*, melanic ♀, OBERTHÜR, p. 175, Bull. Soc. ent.
 France 1904 ; *A. pandora* ab. n. *fulva*, COSMOVICI, p. 162, Bull. Soc.
 ent. France 1904 ; *A. adippe norvegica*, SCHULTZ, p. 137, Abh. Ges.
 Grlitz xxiv ; *A. paphia valesina*, localisation of, REBEL, p. 119, Verh.
 Ges. Wien liv.
- A. claudia*, Khamba Jong, pl. ix, fig. 3, p. 136, FAWCETT, P. Z. S. 1904, ii,
n. spp.
- Atella alcippe* subsp. n., FRUHSTORFER, pp. 308-312, Ent. Meddel. ii ; *A.*
alcippe enganica subsp. n., pl. ii, fig. 1, p. 192, FRUHSTORFER, Berlin.
 ent. Zeitschr. xlix.
- Basilarchia proserpina*, ? varr. or hybrids, the allies, FIELD, Psyche xi,
 pp. 1-6, pls. i-iii.
- Brenthis thore*, egg and young larva, CHAPMAN, pp. 236-238, pls. ix, x,
 Ent. Rec. xvi, TRAVIS, t. c. p. 239.
- B. andersoni*, Brit. Columbia, DYAR, p. 39, J. N. York Ent. Soc. xii,
n. sp.
- Catagramma audofleda* (= *felderi* var. Hew.), Peru, THIEME, p. 159, Berlin.
 ent. Zeitschr. xlix, **n. sp.**
- Charaxes*, African subsp. n., SUFFERT, pp. 122, 123, Deutsche ent.
 Zeitschr. Iris xvii ; *C. eudoxus mechowi* ♂, NEAVE, p. 334, Nov. Zool.
 xi ; *C. polyxena enganica* subsp. n., pl. i, fig. 4, p. 194, FRUHSTORFER,
 Berlin. ent. Zeitschr. xlix ; *C. polyxena enganica* subsp. n., FRUH-
 STORFER, p. 341, Stettin Ent. Zeit. lxxv ; *C. jasius*, larva, no. of moults,
 imperfect ecdysis, CRÉTIEN, p. 108, Bull. Soc. ent. France 1904,
 GIARD, t. c. p. 117 ; *C. jasius*, food, GIARD, p. 178, t. c. ; *C. jasius*,
 seasonal dimorphism, larva, GIARD, p. 44, t. c.
- C. harrisoni*, Africa equat., SHARPE, p. 133, Entomologist 1904, **n. sp.**
- Chlorippe godmani*, Venezuela, DANNATT, p. 173, pl. vii, fig. 1, Entomologist
 1904, **n. sp.**
- Cirrochroa malaya* n. subsp., FRUHSTORFER, p. 157, Ins. Börse 1904 ;
C. regina princesa subsp. n., FRUHSTORFER, p. 75, Soc. ent. xix.
- Cupha lampetia lampetina* subsp. n., p. 316, fig. 2, other subsp. n., pp. 316
 -318, FRUHSTORFER, Ent. Meddel. ii ; *C. erymanthis dohertyi* subsp. n.,
 FRUHSTORFER, p. 191, Berlin. ent. Zeitschr. xlix ; *C. erymanthis*
dohertyi subsp. n., FRUHSTORFER, p. 343, Stettin Ent. Zeit. lxxv.
- Cymothoe theobene nebetho* subsp. n., SUFFERT, p. 115, Deutsche ent.
 Zeitschr. Iris xvii.
- C. congoensis*, p. 115, *alexander*, p. 117, *weymeri*, p. 119, Africa, SUFFERT,
 t. c. **n. spp.**
- Cynthia asela* var., GREEN, p. 76, cut, Spolia Zeylan. ii ; *C. arsinoe figalea*
 subsp. n., FRUHSTORFER, p. 26, Soc. ent. xix.
- Cyrestis*, subsp. n., FRUHSTORFER, pp. 323-328, Ent. Meddel. ii ; *C.*
periander enganica, pl. ii, fig. 2, p. 191, FRUHSTORFER, Berlin. ent.
 Zeitschr. xlix.
- C. giloloensis*, Gilolo, LATHY, p. 71, Entomologist 1904, **n. sp.**
- Didonis laticlavata*, Ecuador, THIEME, p. 159, pl. i, figg. 1, 2, Berlin. ent.
 Zeitschr. xlix, **n. sp.**

- Diestogyna hobleayi*, Victoria Nyanza, NEAVE, p. 334, Nov. Zool. xi ; *D. intermixta*, Congo, *butleri* (= *amaranta* Butl. nec Karsch), AURIVILLIUS, p. 96, Ent. Tidskr. xxv : **n. spp.**
- Dione vanillæ* var. *passifloræ*, COCKERELL, p. 331, Canad. Ent. xxxvi.
- Ergolis pagenstecheri*, E. Africa, SUFFERT, p. 125, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Eulepis delphis* subsp. n., FRUHSTORFER, p. 75, Soc. ent. xix ; *E. pyrrhus antigonus* subsp. n., FRUHSTORFER, p. 140, Ins. Börse 1904 ; *E. dolon* subsp. n., FRUHSTORFER, p. 381, t. c.
- Euphaedra edwardsi viridis* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- E. paradoxa*, Victoria Nyanza, NEAVE, p. 333, Nov. Zool. xi ; *E. paradoxa* ♂, SHARPE, p. 132, Entomologist 1904 ; *E. rattrayi*, p. 182, christyi, p. 183, Toro, SHARPE, Entomologist 1904 : **n. spp.**
- Euptera dorothea*, Sierra Leone, BETHUNE-BAKER, p. 223, Ann. Nat. Hist. xiv, **n. sp.**
- Euryphene letitia* tia subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- E. fulgurata*, Congo, AURIVILLIUS, p. 95, with cut, Ent. Tidskr. xxv, **n. sp.**
- Euryphura porphyron* and *plautilla* subsp. n., SUFFERT, p. 114, Deutsche ent. Zeitschr. Iris xvii.
- E. oliva*, Togo, SUFFERT, p. 112, with subsp. *albula*, p. 113, t. c. **n. sp.**
- Euthalia adona pura* subsp. n., FRUHSTORFER, p. 309, Ins. Börse 1904 ; *E. lubentina* subsp. n., FRUHSTORFER, pp. 438-351, Stettin Ent. Zeit. lxv.
- Grapta gigantea*, melanic var., OBERTHÜR, p. 174, Bull. Soc. ent. France 1904.
- Hæmatera pyramus* var. *n. rubra*, KAYE, p. 173, pl. xviii, fig. 7, Tr. ent. Soc. London 1904.
- Harma marmorata*, Toro, SHARPE, p. 183, Entomologist 1904, **n. sp.**
- Hypanartia delius nigrescens* subsp. n., SUFFERT, p. 108, Deutsche ent. Zeitschr. Iris xvii.
- Hypolimnas*, African subsp. n., SUFFERT, p. 110, t. c. ; *H. bolina*, variation, WATERHOUSE, p. 493, Tr. ent. Soc. London 1904 ; *H. bolina enganica* subsp. n., FRUHSTORFER, p. 193, Berlin. ent. Zeitschr. xlix ; *H. missippus*, bred varr., LEIGH, pp. 689, 690, pl. xxxii, Tr. ent. Soc. London 1904.
- Issoria*, n. subsp. from Malay Arch., FRUHSTORFER, pp. 312-316, Ent. Meddel. ii.
- Kallima rumia amiru* subsp. n., SUFFERT, p. 111, Deutsche ent. Zeitschr. Iris xvii.
- K. rattrayi*, Toro, SHARPE, p. 182, Entomologist 1904, **n. sp.**
- Limenitis populi* varr., SCHULTZ, Abh. Ges. Gorkitz xxiv, pp. 135, 136.
- Melitæa dejone* and *parthenie* varr., p. 11, pl. i, figg. 5-8, OBERTHÜR, Études comp. i ; *M. didyma* var., ROSTAGNO, p. 169, Boll. Soc. zool. Ital. xiii ; *M. iduna* ab. *sulitelmica*, SCHULTZ, p. 137, Abh. Ges. Gorkitz xxiv.
- M. tibetana*, pl. ix, fig. 2, Khamba Jong, FAWCETT, p. 135, P. Z. S. 1904, ii, **n. sp.**
- Messaras mimicus*, New Guinea, pl. iii, fig. 43, ROTHSCHILD, p. 318, Nov. Zool. xi, **n. sp.**
- Mimacraea poultoni*, Victoria Nyanza, pl. i, fig. 18, NEAVE, p. 337, Nov. Zool. xi, **n. sp.**
- Neptis conspicua*, pl. i, fig. 15, p. 329, *clarei*, fig. 2, *ochracea*, fig. 5, p. 330, Victoria Nyanza, NEAVE, t. c. ; *N. livingstonei*, E. Africa, SUFFERT, p. 126, pl. iii, fig. 10, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Parthenos* subsp. n., FRUHSTORFER (566) ; *P. sylvia* subsp. n. ; FRUHSTORFER, pp. 73, 74, Soc. ent. xix.

- Phyciodes hanhami*, Canada, FLETCHER, p. 122, pl. fig., Canad. Ent. xxxvi, and p. 208, Tr. R. Soc. Canada ix, Sect. 4, **n. sp.**
- Polygonia c-album* var., FUCHS, Jahrb. nassau. Ver. lvii, p. 31, pl. ii, fig. 1.
- Precis*, African subsp. n., SUFFERT, pp. 108, 109, Deutsche ent. Zeitschr. Iris xvii.
- P. adalatrix*, Sumba, FRUHSTORFER, p. 7, SB. Berlin. ent. Zeitschr. xlix, **n. sp.**
- Prothoë ribbei guizonis* subsp. n., ROTHSCILD, p. 366, Nov. Zool. xi.
- Protoponius ochraceus*, egg, KAYE, pl. xvii, fig. 3, p. 178, Tr. ent. Soc. London 1904.
- Pseudacraea hobleyi*, p. 331, *tirikensis*, pl. i, fig. 14, *terra*, p. 332, *obscura*, p. 333, Victoria Nyanza, NEAVE, Nov. Zool. xi, **n. spp.**
- Pyrameis cardui*, swarms, VAN ROSSUM, pp. 112–114, Ent. Ber. Nederland. i; *P. cardui*, swarms, VAN DEN BERGH & VAN ROSSUM, pp. 148–152, Ent. Ber. Nederland. i; *P. cardui*, migration, REBEL, p. 152, Ann. Hofmus. Wien xix; *P. cardui*, migration, Calais, GIARD, p. 67, Feuille Natural. xxxiv; *P. cardui*, migration, Hungary, AIGNER-ABAFI, pp. 6–9, Allg. Zeitschr. Ent. ix.
- P. indica* var. *vulcania* from Canaries and Madeira, FRUHSTORFER & STICHEL, pp. 3, 4, SB. Berlin. ent. Zeitschr. xlix.
- P. gonerilla*, ALFKEN, pl. xxxii, fig. 11, p. 589, *P. ida*, fig. 12, var. *argentata*, fig. 13, p. 602, Zool. Jahrb. Syst. xix.
- Salamis anacardii ansorgei* subsp. n., ROTHSCILD, p. 452, Nov. Zool. xi.
- S. temora virescens* subsp. n., SUFFERT, p. 109, Deutsche ent. Zeitschr. Iris xvii.
- Symbrenthia* subsp. n., FRUHSTORFER, pp. 319–323, Ent. Meddel. ii.
- Tithorea regalis*, Colombia, STICHEL, p. 18, SB. Berlin. ent. Zeitschr. xlix, **n. sp.**
- Vanessa*, in the Seine-inférieure, NOEL, pp. 143–146, Naturaliste 1904; *V. antiopa*, habits, PARKER, Mark Anniversary Volume, pp. 455–469, pl. xxxiii; *V. antiopa*, pupation habits, FIELD, pp. 6–9, Ent. News Philad. xv; *V. atalanta*, in New Zealand, PHILPOTT, p. 161, Tr. N. Zealand Inst. xxxvi; *V. cardui*, migration (as recorded by Eagle Clarke), VAN ROSSUM, pp. 141–143, Ent. Ber. Nederland. i; *V. urticae*, oviposition, habits, POULTON & HAMM and others, pp. xli–xlvi, P. ent. Soc. London 1904; *V. urticae nigricaria* ♂, HAVERKAMPF, p. 186, pl. i, Ann. Soc. ent. Belgique xlviii.

MORPHIDÆ, BRASSOLIDÆ, AMATHUSIIDÆ, DISCOPHORIDÆ.

[Cf. KAYE (775), RÖBER (1180), SHELFORD (1289), STICHEL (1346–1348).]

Brassolinæ revised and listed, STICHEL, Wytsman Gen. Ins. fasc. xx, 48 pp., v pls. In this work numerous varieties are described, that it is not necessary to enumerate here. The forms described in Ins. Börse by the same writer are in this paper redescribed and some of them figured.

Notes on the doubtful species of *Brassolidæ* of Felder and Boisduval, STICHEL, pp. 197 etc., Ins. Börse 1904.

Amathusia, subsp. n., FRUHSTORFER (566).

Amathusidia amythaon lucida subsp. n., FRUHSTORFER, p. 189, Berlin. ent. Zeitschr. xlix.

Brassolis astyra philocala subsp. n., STICHEL, p. 21, Ins. Börse 1904.

Caligo, STICHEL uses numerous names for divisions and subdivisions, *Brassolinæ*, pp. 35–43; *C.*, subsp. n., FRUHSTORFER, p. 145, Soc. ent. xviii; *C. placidianus* var. n. *micans*, *prometheus* var. n. *atlas*, RÖBER,

- p. 146, Soc. ent. xviii; *C.*, notes on, with varr. n., FRUHSTORFER, pp. 313–320, Deutsche ent. Zeitschr. Iris xvi; *C. eurylochus* var. n. *minor*, KAYE, p. 165, Tr. ent. Soc. London 1904; *C. teucer insulanus* subsp. n., STICHEL, p. 21, Ins. Börse 1904.
- C. fruhstorferi*, Honduras, Surinam, STICHEL, p. 21, Ins. Börse 1904; *C. pavo*, p. 145, *hanschi*, Colombia, *phorbas*, p. 146, Ecuador, RÖBER, Soc. ent. xviii; *C. saltus*, Trinidad, KAYE, p. 165, larva, pl. xvii, fig. 1, Tr. ent. Soc. London 1904 : **n. spp.**
- Dasyophthalma* varr. n., STICHEL, p. 21, Ins. Börse 1904.
- Dynastor darius ictericus* subsp. n., STICHEL, p. 21, t. c.
- Hyantide* n. family for *Hyantis* and *Morphopsis*, STICHEL, p. 306, Berlin. ent. Zeitschr. xlix.
- Hyantis*, new forms, STICHEL, pp. 310–313, pl. iv, t. c.
- Morphopsis albertisi*, *astrolabensis* race, STICHEL, p. 308, t. c.
- Narope albopunctum*, Peru, *panniculus*, Paraguay, STICHEL, p. 6, Ins. Börse 1904, **n. spp.**
- Nephrochoria* and *Cyclochoria* **n. nn.** for sects. of *Selenophanes*, STICHEL, p. 29, Brassolinæ.
- Opsiphanes* varr. n., STICHEL, p. 6 and p. 21, t. c.; *O. cassia*, pl. xvii, fig. 2, GUPPY, p. 226, Tr. ent. Soc. London 1904.
- Pseudamathusia masina*, Borneo, FRUHSTORFER, p. 155, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Psilocraspeda*, p. 31, and *Tricothamnodes*, p. 32, **n. nn.** for sects. of *Eryphanis*, STICHEL, Brassolinæ.
- Tenaris artemis*, 9 subsp. n., FRUHSTORFER, p. 389, Ins. Börse 1904; *T. macrops macropina* subsp. n., FRUHSTORFER, p. 26, Soc. ent. xix, *T.*, varr. n., FRUHSTORFER, pp. 129, 139, t. c.
- T. merana*, New Guinea, id. p. 138, t. c. **n. sp.**
- Thaumantis odana* var. n. *cyclops*, RÖBER, p. 105, t. c.

SATYRIDÆ.

- [Cf. BACHMETJEW (69, 71), DYAR (433), FAWCETT (492), KERSHAW (788), OBERTHÜR (987), REBEL (1122), RÖBER (1179), ROTHSCILD (1196), SHELFORD (1289), THIEME (1379, 1380), TUTT (1414).]
- Aphyssoneura pigmentaria* ♀, SUFFERT, p. 132, Deutsche ent. Zeitschr. Iris xvii.
- Argyrophorus lamna*, Bolivia, THIEME, p. 160, Berlin. ent. Zeitschr. xlix, **n. sp.**
- Bia actorion* var. n. *peruana*, RÖBER, p. 106, Soc. ent. xix.
- Cænonympha arcania-insubrica*, p. 24, pl. i, fig. 12, OBERTHÜR, Études comp. i; *C. arcania*, *tiphon* varr., REBEL, p. 174, pl. v, figg. 9–12, Ann. Hofmus. Wien xix; *C. dorus* varr., MUSCHAMP, p. 302, Ent. Rec. xvi; *C. pumphilus* larva, KLOKMAN, p. 134, Ent. Ber. Nederland. i.
- C. mathewi*, Vigo, TUTT, p. 308, Ent. Rec. xvi, **n. sp.**
- Epinephele*, abb. of Tuscan, VERITY, p. 56, Entomologist 1904; *E. jurtina*, number of eye-spots and damp seasons, BACHMETJEW, pp. 143–147, Allg. Zeitschr. Ent. ix; *E. furtina* (sic) varr., HAVERKAMPF, p. 188, Ann. Soc. ent. Belgique xlvi; *E. jurtina*, parthenogenesis of male, BACHMETJEW, pp. 1–16, Horæ Soc. ent. Ross. xxxvii; *E. lycaon* ab. n. *biocellatus*, RAGUSA, pl. iii, fig. 2, p. 110, Natural. Sicil. xvii; *E. tithonus* varr., cuts, var. n. *albida*, RUSSELL, pp. 125–127, Entomologist 1904.
- Erebia christi* and *pharte* varr., OBERTHÜR, pp. 21–23, pl. ii, figg. 13, 14, 19, 20, and iv, fig. 45, Études comp. i; *E. neoridas* varr. n. *alborittata*, *etrusca*, pl. iv, figg. 6, 7, VERITY, p. 55, Entomologist 1904; *E. manto* var. n. *ocellata*, WAGNER, p. 610, cut, Verh. Ges. Wien liv; *E. evias* and *stygne*, varr. from Guadarrama, *E. penalaræ* var. n., CHAPMAN,

- pp. xlvi–xlvi, P. ent. Soc. London 1904; *E. stygne* and *epistygne*, note, NICHOLL, p. 48, Ent. Rec. xvi; *E. flavofasciata* var. n. *thiemei*, BARTEL, p. 165, Deutsche ent. Zeitschr. Iris xvii; *E. turanica* var. n. *jucunda*, PÜNGELER, p. 286, pl. vi, fig. 1, Deutsche ent. Zeitschr. Iris xvi; *E. glacialis*, larva, KRODEL, pp. 442–447, Allg. Zeitschr. Ent. ix.
- E. palarica*, N. Spain, CHAPMAN, p. lxxxvii, P. ent. Soc. London 1904, **n. sp.**
- Erites thetis*, Borneo, SHELFORD, p. 99, J. Straits Asiat. Soc. xli, **n. sp.**
- Heteronympha merope*, *philerope*, variation, KERSHAW, pp. 173–175, Victorian Natural. xx.
- H. solandri*, Australia, WATERHOUSE, p. 466, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Lethe cerama*, Borneo, SHELFORD, p. 96, J. Straits Asiat. Soc. xli, **n. sp.**
- Lymanopoda aceræida* Butl. ♀, THIEME, p. 160, Berlin. ent. Zeitschr. xlix.
- L. sororcula*, Ecuador, p. 161, *palumba*, Bolivia, p. 462, THIEME, t. c. **n. spp.**
- Melanitis ismene*, variation, GREEN, p. 75, pl., Spolia Zeylan. ii.
- M. ansorgei*, Aruwimi Forest, ROTHSCHILD, p. 451, Nov. Zool. xi, **n. sp.**
- Mycalesis barbara mea* subsp. n., pl. iii, fig. 42, p. 319, ROTHSCHILD, t. c.
- Æneis norna*, variation, var. n., SCHULTZ, pp. 138–140, Abh. Ges. Grolitz xxiv; *O. caryi* n. var., DYAR, p. 142, P. ent. Soc. Washington vi.
- Æ. nahanni*, Mackenzie, id. t. c. **n. sp.**
- Pararge megacra*, larva, KLOKMAN, p. 134, Ent. Ber. Nederland. i.
- Ragadia simplex*, pl. ix, fig. 1, p. 135, FAWCETT, P. Z. S. 1904, ii.
- Satyrus semele* ab. n. *tricellatus*, RAGUSA, pl. iii, fig. 1, p. 109, Natural. Sicil. xvii; *S. hermione*, larva, TER HAAR, p. 160, Ent. Ber. Nederland. i.
- Tisiphone abeona* var. n. *albifascia*, WATERHOUSE, p. 468, P. Linn. Soc. N. S. Wales xxix.
- Ypthima abnormis*, Borneo, SHELFORD, p. 98, J. Straits Asiat. Soc. xli, **n. sp.**

ERYCINIDÆ (or RIODINIDÆ), [s. l. incl. ELYMNIAS, etc.]

[Cf. BETHUNE-BAKER (116), DANNATT (351), DRUCE (405), FRUHSTORFER (571), KAYE (775), LATHY (859, 861), RÖBER (1179), ROTHSCHILD (1194, 1197).]

- Abisara albiplaga avara*, pl. ii, fig. 23, subsp. n. *keiana*, fig. 24, subsp. n. *weiskei* ♀, pl. iii, fig. 28, ROTHSCHILD, p. 317, Nov. Zool. xi; *Abisara* subsp. n., FRUHSTORFER (566).
- A. segestes*, New Guinea, ROTHSCHILD, p. 455, Nov. Zool. xi, **n. sp.**
- Aricoris striata*, Ecuador, pl. xxxiv, fig. 12, p. 488, DRUCE, P. Z. S. 1904, i, **n. sp.**
- Calvia fulvimargo*, Peru, LATHY, p. 466, pl. xxvii, fig. 6, T. ent. Soc. London 1904, **n. sp.**
- Chamælinnas albivitta*, Brazil, LATHY, p. 465, pl. xxvii, fig. 5, t. c. **n. sp.**
- Charis candiope*, Colombia, pl. xxxiv, fig. 5, *mandosa*, Rio Janeiro, fig. 6, *myrtis*, Paraguay, figg. 6, 7, p. 486, DRUCE, P. Z. S. 1904, i, **n. spp.**
- Cremna aza*, Colombia, pl. xxxiii, fig. 11, DRUCE, t. c. **n. sp.**
- Cricosoma coccineata*, Trinidad, pl. xviii, fig. 10, p. 185, KAYE, Tr. ent. Soc. London 1904, **n. sp.**
- Dicallaneura amabilis*, New Guinea, pl. ii, figg. 21, 22, ROTHSCHILD, p. 318, Nov. Zool. xi; *D. ekeikei*, New Guinea, BETHUNE-BAKER, p. 370, Nov. Zool. xi; *D. milnei*, New Guinea, FRUHSTORFER, p. 147, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Elymnias esaca*, subspecies, synonymy, SHELFORD & BINGHAM, pp. 487–489, Tr. ent. Soc. London 1904; *Ê.*, subsp. n., FRUHSTORFER, pp. 321–323, Deutsche ent. Zeitschr. Iris xvi; *Ê.*, subsp. n., FRUHSTORFER, pp. 53 & 60, Soc. ent. xix.

- E. thyone*, Celebes, id. p. 53; *E. brookei*, Borneo, SHELFORD, p. 102, J. Straits Asiat. Soc. xli : **n. spp.**
- Emesis guppyi*, Trinidad, pl. xviii, fig. 9, p. 187, KAYE, Tr. ent. Soc. London 1904, **n. sp.**
- Erycina latifasciata*, Peru, LATHY, pl. xxvii, fig. 3, p. 464, Tr. ent. Soc. London 1904; *E. mendita*, Bolivia, pl. xxxiv, fig. 2, p. 485, DRUCE, P. Z. S. 1904, i : **n. spp.**
- Eurybia cerulescens*, pl. xxxiii, fig. 3, *sinuaces*, fig. 4, Peru, DRUCE, p. 482, t. c. **n. spp.**
- Eurygona ocalea*, Bolivia, pl. xxxiii, fig. 1, *candaria*, Colombia, fig. 2, p. 481, DRUCE, t. c.; *E. subargentea*, Bogota, LATHY, p. 463, pl. xxvii, fig. 1, Tr. ent. Soc. London 1904 : **n. spp.**
- Helicopsis elegans*, Trinidad, KAYE, p. 182, pl. xviii, fig. 6, Tr. ent. Soc. London 1904, **n. sp.**
- Ithomiola rubrolineata* (= *celtilla* var. Hew.). Peru, LATHY, p. 465, Tr. ent. Soc. London 1904, **n. sp.**
- Lemonias auria*, Bolivia, pl. xxxiv, fig. 4, p. 487, DRUCE, P. Z. S. 1904, i; *L. pulchra*, Peru, LATHY, p. 467, pl. xxvii, fig. 8, Tr. ent. Soc. London 1904 : **n. spp.**
- Libythea fulvescens*, Dominica, LATHY, p. 451, P. Z. S. 1904, i, **n. sp.**
- Lymnas hillapana*, Peru, RÖBER, p. 106, Soc. ent. xix, **n. sp.**
- Mesosemia axilla*, Bolivia, pl. xxxiii, fig. 5, *anica*, fig. 6, *paramba*, fig. 7, p. 483, *candara*, fig. 8, *carderi*, fig. 9, p. 484, Peru, *parishi*, Brit. Guiana, fig. 10, p. 485, DRUCE, P. Z. S. 1904, i; *M. elegans*, Peru, LATHY, p. 463, pl. xxvii, fig. 2, Tr. ent. Soc. London 1904 : **n. spp.**
- Monethe johnstoni*, Brit. Guiana, DANNATT, p. 174, pl. vii, fig. 2, Entomologist 1904, **n. sp.**
- Nymphidium molpe*, larva, GUPPY, p. 227, Tr. ent. Soc. London 1904.
- N. candace*, pl. xxxiv, fig. 1, Rio Janeiro, *minuta*, Brit. Guiana, fig. 10, p. 487, *augea*, Bolivia, fig. 11, *medusa*, Peru, fig. 3, p. 488, DRUCE, P. Z. S. 1904; *N. completa*, Peru, LATHY, p. 467, pl. xxvii, fig. 9, Tr. ent. Soc. London 1904 : **n. spp.**
- Rusalkia marathon* var. *n. stenotania*, RÖBER, p. 106, Soc. ent. xix.
- Siseme peculiaris*, Peru, pl. xxxiv, fig. 9, p. 486, DRUCE, P. Z. S. 1904, i, **n. sp.**
- Stalactis canidia*, Matto Grosso, pl. xxxiv, fig. 8, p. 488, DRUCE, t. c. **n. sp.**
- Symmachia peruviana*, La Merced, LATHY, p. 466, pl. xxvii, fig. 7, Tr. ent. Soc. London 1904, **n. sp.**
- Synargis* Hübn. valid, KAYE, p. 189, Tr. ent. Soc. London 1904.
- Themone trivittata*, Peru, LATHY, p. 465, pl. xxvii, fig. 4, Tr. ent. Soc. London 1904, **n. sp.**
- Theope eudocia*, larva, pl. xviii, fig. 1, p. 226, *foliorum*, larva, fig. 2, p. 227, GUPPY, Tr. ent. Soc. London 1904.
- T. fasciata*, hab. ?, LATHY, p. 467, pl. xxvii, fig. 10, Tr. ent. Soc. London 1904, **n. sp.**

LYCÆNIDÆ.

[Cf. BETHUNE-BAKER (116-118), CATOR (250), DRUCE (407, 408), DYAR (422), FLETCHER (515, 516), KAYE (775), KRODEL (846), LATHY (861), NEAVE (977), OBERTHÜR (987), SHARPE (1286, 1288), SKINNER (1303), SUFFERT (1353, 1355), TRIMEN (1394), WATERHOUSE & TURNER (1495).]

For suggestive and synonymical notes on Australian *Lycænidae* see WATERHOUSE & TURNER, P. Linn. Soc. N. S. Wales 1904, pp. 798-804.

Temperature experiments on pupa of *L. corydon* and *damon*, KRODEL, pp. 49-55, 21 cuts, Allg. Zeitschr. Ent. ix.

- Alæna rollei*, E. Africa, SUFFERT, p. 134, Ins. Börse 1904; *A. rollei*, Usambara, SUFFERT, p. 39, pl. i, fig. 5, Deutsche ent. Zeitschr. Iris xvii; *A. mulsa*, E. Africa, n. sp., but in note = *rollei* Suff., THIEME, p. 164, Berlin. ent. Zeitschr. xlix : **n. sp.**
- Aphneus drucei*, Victoria Nyanza, pl. i, fig. 6, p. 338, NEAVE, Nov. Zool. xi; *A. ratrayi*, Toro, SHARPE, p. 203, Entomologist 1904 : **n. spp.**
- Arawacus n. g.* for *Pap. linus* Sulz, KAYE, p. 197, Tr. ent. Soc. London 1904.
- Arhopala halmaheira*, Halmaheira, p. 233, *sublustris*, p. 234, *baluensis*, p. 235, Borneo, BETHUNE-BAKER, Ann. Nat. Hist. xiv, **n. spp.**
- Candalides pruina*, New Guinea, DRUCE, p. 140, Ann. Nat. Hist. xiii, **n. sp.**
- Castalius eusemia*, Victoria Nyanza, pl. i, fig. 11, p. 340, NEAVE, Nov. Zool. xi, **n. sp.**
- Catochrysops nandensis*, Africa, pl. i, fig. 12, p. 339, NEAVE, t. c. **n. sp.**
- Chrysophanus dispar* var. pl. iv, fig. 12, and ab. n. *nigrolineata*, p. 57, *dorilis* ab. n. *upoleuca*, p. 58, VERITY, Entomologist 1904; *C. gorgon*, eggs, larvæ, GRUNDEL, p. 97, Ent. News Philad. xv.
- Cupido malathana* var. n. *nilotica*, AURIVILLIUS, p. 3, Jägerskiöld exp. No. 8.
- Cyaniris ladon*, food-plant, FLETCHER, p. 4, Canad. Ent. xxvi.
- Deudorix leonina*, Sierra Leone, BETHUNE-BAKER, p. 231, Ann. Nat. Hist. xiv; *D. angelita*, Cameroons, SUFFERT, p. 54, Deutsche ent. Zeitschr. Iris xvii : **n. spp.**
- Eoöcyliodes tharis enganicus* subsp. n., FRUHSTORFER, p. 204, Berlin. ent. Zeitschr. xlix; *E. tharis* subsp. n., FRUHSTORFER, pp. 311, 312, Deutsche ent. Zeitschr. Iris xvi.
- Epitola mus, mercedes*, p. 53, *concepcion*, p. 54, Cameroons, SUFFERT, t. c. xvii, **n. spp.**
- Epitolina catori, dorothea* = (*Phytala leonina*), p. 227, *sublustris*, p. 228, *kholifa*, p. 229, *albomaculata, virginea*, p. 230, Sierra Leone, BETHUNE-BAKER, Ann. Nat. Hist. xiv, **n. spp.**
- Hypolycæna cæculus obscurus* subsp. n., SUFFERT, p. 60, Deutsche ent. Zeitschr. Iris xvii.
- H. dolores*, E. Africa, SUFFERT, p. 57, t. c.; *H. ugandæ*, Africa, SHARPE, p. 203, Entomologist 1904; *H. moyambina*, Sierra Leone, BETHUNE-BAKER, p. 232, Ann. Nat. Hist. xiv : **n. spp.**
- Iaspis n. g.* for *Symmachia temesa*, Hew., KAYE, p. 196, Tr. ent. Soc. London 1904.
- Incisalia angustus*, larva, COOK, p. 136, Canad. Ent. xxxvi.
- Iolais silas lasius* subsp. n., SUFFERT, p. 70, Deutsche ent. Zeitschr. Iris xvii.
- I. barbara*, p. 62, *matilda*, p. 64, *elisa*, p. 65, *bertha*, p. 66, *thuraui*, p. 67, *emma*, p. 69, Africa, SUFFERT, t. c.; *I. hemicyanus*, Uganda, p. 203, *albomaculatus*, Toro, p. 204, SHARPE, Entomologist 1904; *I. catori*, Sierra Leone, BETHUNE-BAKER, p. 233, Ann. Nat. Hist. xiv : **n. spp.**
- Jacoona anasuja* varr., FRUHSTORFER, p. 310, Deutsche ent. Zeitschr. Iris xvi.
- Lampides telicanus*, ab. n. p. 58, *damon* ab. n. *agraphomena*, p. 59, VERITY, Entomologist 1904.
- Larinopoda lagyra gyrata* subsp. n., SUFFERT, p. 49, Deutsche ent. Zeitschr. Iris xvii.
- L. emilia*, Cameroons, SUFFERT, p. 48, t. c. **n. sp.**
- Liptena angusta*, p. 50, *margarita*, p. 51, Cameroons, SUFFERT, t. c.; *L. albicans*, Sierra Leone, CATOR, p. 76, Ann. Nat. Hist. xiii; *L. diversa*, Sierra Leone, BETHUNE-BAKER, p. 225, Ann. Nat. Hist. xiv : **n. spp.**
- Lycæna ariana* var. *arene*, pl. ix, fig. 4, p. 137, *L. pheretes* var. *pharis*, fig. 5, p. 138, FAWCETT, P. Z. S. 1904, ii; *L. pseudargiolus* varr. n. *argentata, nigrescens*, FLETCHER, p. 213, Tr. R. Soc. Canad. ix, Sect. 4;

- L. pseudargiolus* varr. n. *argentata*, *nigrescens*, FLETCHER, p. 127, Canad. Ent. xxxvi; *L. cyllarus* var. n. *punctata*, GOUIN, pp. lxxi & lxxvi, Pr.-verb. Soc. Linn. Bordeaux lix; *L. arion* var. n., WAGNER, p. 1, Soc. ent. xix; *L. icarus* ab. *celina*, *escheri* ab. *rostagni*, *corydon* ab. *striata*, STEFANELLI, pp. 4, 5, Bull. Soc. ent. Ital. xxxvi; *L. escheri* var. n. *splendens*, id. t. c. p. 11; *L. corydon* ab. n. *stefanellii*, *L. bellargus* ab. n. *bellargoides*, VERITY, l. eod.; *L. zephyrus*, *calliopis* varr. pp. 16–19, pl. ii, figg. 15–18 & 21–24, Études comp. i; *L. coretus*, characters, JACHONTOV, pp. 96–100, cuts, and p. 218, Rev. Russe Ent. iv; *L. argiades*, life-history, FROHAWK, pp. 245–249, Entomologist 1904; *L. alcon*, habits and early stages, BRANTS, pp. 137–143, Tijdschr. Ent. xlv.
- L. leurothodi*, Basutoland, TRIMEN, p. 242, pl. xix, fig. 6, Tr. ent. Soc. London 1904; *L. (Zizera) zera*, pl. ix, fig. 6, p. 138, *L. (Niphanda) marcia*, fig. 7, p. 139, Tounghoo, FAWCETT, P. Z. S. 1904, ii: n. spp.
- Lycenesthes affinis* n. n. for *modestus* Waterh., WATERHOUSE & TURNER, p. 801, P. Linn. Soc. N. S. Wales 1904.
- L. hobleyi*, Victoria Nyanza, NEAVE, p. 339, Nov. Zool. xi, n. sp.
- Macusia* n. g. for *Thecla satyroides* Hew., KAYE, p. 198, Tr. ent. Soc. London 1904.
- Micropentila mabangi*, Sierra Leone, BETHUNE-BAKER, p. 226, Ann. Nat. Hist. xiv, n. sp.
- Neolucia* n. g. type *Lycæna agricola* Westw., WATERHOUSE & TURNER, p. 803, P. Linn. Soc. N. S. Wales 1904.
- Nesolyceus* n. g. type *Holochila albosericea* Misk., WATERHOUSE & TURNER, t. c. p. 801.
- Oxylides feminina*, Uganda, SHARPE, p. 202, Entomologist 1904, n. sp.
- Paivarria* n. g. for *Pap. venulius* Cr., KAYE, p. 199, Tr. ent. Soc. London 1904.
- Parachrysops* n. g. *bicolor* n. sp., New Guinea, BETHUNE-BAKER, p. 369, Nov. Zool. xi.
- Paralucia* n. g. type *L. pyrodiscus* Ros., WATERHOUSE & TURNER, p. 802, P. Linn. Soc. N. S. Wales 1904.
- Paraphnceus* n. g. for *Aphnceus hutchinsoni*, THIERRY-MIEG, p. 140, Naturaliste 1904.
- Pareulodina* n. g. near *Candalides*, *P. aroa* n. sp., New Guinea, BETHUNE-BAKER, p. 368, Nov. Zool. xi.
- Pentila*, subspp. n., SUFFERT, pp. 46, 47, Deutsche ent. Zeitschr. Iris xvii.
- P. hedwiga*, *marianna*, p. 43, *christina*, p. 45, *elfrieda*, p. 46, Africa, SUFFERT, t. c. n. spp.
- Philiris* merged in *Candalides*, BETHUNE-BAKER, p. 369, Nov. Zool. xi.
- Polyniphes* n. g. for *Thecla dumenilii* God., KAYE, p. 191, Tr. ent. Soc. London 1904.
- Polyommatus admetus rippartii*, oviposition and egg, POWELL, pp. 92–94, Ent. Rec. xvi.
- Poultonia* n. g. near *Durbania*, *P. ochraceus* n. sp., Victoria Nyanza, pl. i, fig. 13, NEAVE, p. 336, Nov. Zool. xi.
- Purlisa gigantea borneana* subsp. n., FRUHSTORFER, p. 310, Deutsche ent. Zeitschr. Iris xvi.
- Pseuderesia moyambina*, p. 224, *catori*, p. 225, Sierra Leone, BETHUNE-BAKER, Ann. Nat. Hist. xiv; *P. bakeriana*, p. 73, *nigra*, p. 74, *fusca*, p. 75, Sierra Leone, CATOR, Ann. Nat. Hist. xiii; *P. carlota*, Cameroons, SUFFERT, p. 47, Deutsche ent. Zeitschr. Iris xvii.
- Rekoa* n. g. for *Pap. meton* Cr., KAYE, p. 198, Tr. ent. Soc. London 1904.
- Siderus* n. g. *S. parvnotus* n. sp., Trinidad, KAYE, p. 195, t. c.
- Spindasis nairobiensis*, Africa equat., SHARPE, p. 133, Entomologist 1904, n. sp.

- Stugeta maria*, Angola, SUFFERT, p. 60, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Syntaruchoides n. g.* for *Papilio cassius* Cr., KAYE, p. 190, Tr. ent. Soc. London 1904.
- Tajuria lucullus, stigmata*, Borneo, DRUCE, p. 141, Ann. Nat. Hist. xiii, **n. spp.**
- Talicauda nyseus* var., GREEN, p. 77, Spolia Zeylan. ii.
- Telipna acraea nigra* subsp. n., SUFFERT, p. 42, Deutsche ent. Zeitschr. Iris xvii.
- T. erica*, Cameroons, SUFFERT, p. 41, t. c.; *T. nyanza*, Africa, pl. i, fig. 19, p. 335, NEAVE, Nov. Zool. xi : **n. spp.**
- Thamala* etc., Indo-Australian subspp. n., FRUHSTORFER (566).
- Thecla strigosa* var. n. *liparops*, FLETCHER, p. 124, cuts, Canad. Ent. xxxvi, and FLETCHER, p. 210, Tr. R. Soc. Canad. ix, sect. 4; *T. critola*, sexes, DYAR, p. 39, J. N. York Ent. Soc. xii; *T. acaciæ* ab. n. *beccarii*, pl. iv, fig. 11, p. 56, VERITY, Entomologist 1904.
- T. oslari*, Arizona, DYAR, p. 40, J. N. York Ent. Soc. xii; *T. heathii*, Manitoba, FLETCHER, p. 125, Canad. Ent. xxxvi, and FLETCHER, p. 212, Tr. R. Soc. Canada ix, sect. 4; *T. johnsoni*, Brit. Columbia, SKINNER, p. 298, Ent. News Philad. xv; *T. subobscura, dominicana*, Dominica, LATHY, p. 452, P. Z. S. 1904, i : **n. spp.**
- Thestor ballus*, early stages, CHAPMAN, p. 254-260, 277-284, pls. xi-xiii, Ent. Rec. xvi.
- Thysonotis hebes*, New Guinea, DRUCE, p. 140, Ann. Nat. Hist. xiii, **n. sp.**
- Tmolus unilinea*, p. 192, *perdistincta*, p. 194, pl. xviii, fig. 8, Trinidad, KAYE, Tr. ent. Soc. London 1904, **n. spp.**
- Zeritis thysbe* var. pl. xix, fig. 3, p. 236, *Z. molomo* redescribed, p. 238, fig. 4, *Z. damarensis*, fig. 5, p. 240, TRIMEN, Tr. ent. Soc. London 1904.
- Z. felthami*, Cape G. H., TRIMEN, p. 233, pl. xix, fig. 2, t. c. **n. sp.**
- Zizera otis* var., GREEN, p. 77, cut, Spolia Zeylan. ii.

HESPERIIDÆ.

[Cf. DYAR (420, 422), FLETCHER (515, 516), FRUHSTORFER (568), GRINNELL (634), KAYE (775), MABILLE (898), NEAVE (977), SWINHÖE (1364), TRIMEN (1394), WATERHOUSE (1493).]

WATERHOUSE (1493) criticises Mabilles's work regarding Australian *Hesperiidæ*, and gives a list of corrigenda as to habitats and synonymy, for which reference must be made to the paper itself.

- Acromecis n. g. neander* Plötz, MABILLE, p. 171, Hesperiidæ.
- Aella n. g. dryops* Mab., MABILLE, p. 140, Hesperiidæ.
- Arotis n. g. strenne n. sp.*, Brazil, MABILLE, p. 151, Hesperiidæ.
- Asbolis n. g. sandarac* H.-Sch., MABILLE, p. 134, Hesperiidæ.
- Bibla n. g.* near *Taractrocera*, MABILLE, p. 122, Hesperiidæ.
- Chloeria n. g. psittacina* Feld., MABILLE, p. 178, Hesperiidæ.
- Chondrolepis n. g. murga* Mab., MABILLE, p. 170, Hesperiidæ.
- Corone oceanica*, Oceania, *tenebricosa*, New Guinea, MABILLE, p. 143, Hesperiidæ, **n. spp.**
- Cyclopides trisignatus*, Victoria Nyanza, pl. i, fig. 8, p. 343, NEAVE, Nov. Zool. xi, **n. sp.**
- Dalla n. g.* for part of *Butleria*, Wats., MABILLE, p. 107, Hesperiidæ.
- Hasora attenuata*, New Guinea, MABILLE, p. 86, Hesperiidæ, **n. sp.**
- Heliopetes concinnata*, Brazil, MABILLE, p. 79, Hesperiidæ, **n. sp.**
- Ismene tolo*, Celebes, MABILLE, p. 89, Hesperiidæ, **n. sp.**
- Kedestes tacusa*, pl. xx, fig. 8, p. 245, TRIMEN, Tr. ent. Soc. London 1904.
- Leptalina n. g.* near *Heteropteris*, MABILLE, p. 110, Hesperiidæ.

- Malaza* **n. g.** *carmides* Hew., MABILLE, p. 95, Hesperiidæ.
Manarina **n. g.** *empyreus* Mab., MABILLE, p. 95, Hesperiidæ.
Melanthes **n. g.** *for brunnea* H.-Sch., MABILLE, p. 80, Hesperiidæ.
Ocybadistes suffusus, Australia, MABILLE, p. 142, Hesperiidæ, **n. sp.**
Edaloneura **n. g.** *heterochrus* Mab., MABILLE, p. 101, Hesperiidæ.
Enides **n. g.** *vulpina* Feld., MABILLE, p. 178, Hesperiidæ.
Ocytozia **n. g.** *doubledayi* Westw., MABILLE, p. 93, Hesperiidæ.
Padraona suborbicularis, Australia, MABILLE, p. 141, Hesperiidæ, **n. sp.**
Pamphila manitoboides, Canada, FLETCHER, p. 128, Canad. Ent. xxxvi, and FLETCHER, p. 214, Tr. R. Soc. Canada ix, sect. 4, **n. sp.**
Parnara nostrodamus, habits, egg and larva, VÉRITY, p. 233, Bull. Soc. ent. France 1904.
Perichares heroni, Trinidad, KAYE, p. 221, Tr. ent. Soc. London 1904, **n. sp.**
Psoralis **n. g.** *sabæus* **n. sp.**, Bolivia, MABILLE, p. 133, Hesperiidæ.
Pyrrochalcia **n. g.** *iphis* Drury, MABILLE, p. 89, Hesperiidæ.
Sarega **n. g.** *staurus* **n. sp.**, Colombia, MABILLE, p. 133, Hesperiidæ.
Serdis **n. g.** *flagrans* **n. sp.**, Ecuador, MABILLE, p. 144, Hesperiidæ.
Staphylus sinepunctis, Trinidad, KAYE, p. 215, Tr. ent. Soc. London 1904, **n. sp.**
Stomyles gallio, *pupillatus*, S. America, MABILLE, p. 132, Hesperiidæ **n. spp.**
Synale **n. g.** *hylaspes* Cr., MABILLE, p. 159, Hesperiidæ.
Synapte **n. g.** *salenus* Mab., MABILLE, p. 133, Hesperiidæ.
Tagiades bubasa, N. Guinea, p. 418, *hovia*, Shortland islds., Sivoa, N. Guinea, p. 419, SWINHOE, Ann. Nat. Hist. xiv, **n. spp.**
Telicota insularis kreon subsp. n., FRUHSTORFER, p. 166, Berlin. ent. Zeitschr. xlix.
*T. androsthene*s, Lompa Battan, FRUHSTORFER, p. 165, pl. i, fig. 6, t. c.;
T. hypomelæna, New Guinea, MABILLE, p. 148, Hesperiidæ : **n. spp.**
Thanaos lilius, Brit. Columbia, DYAR, p. 788, P. U. S. Mus. xxvii; *T. callidus*, S. California, GRINNELL, p. 114, Ent. News Philad. xv : **n. spp.**
Thorybes mysie, Arizona, DYAR, p. 40, J. N. York Ent. Soc. xii, **n. sp.**
Thracides joannisii, Chiriqui, *phidonides*, Ecuador, MABILLE, p. 179, Hesperiidæ, **n. spp.**
Triadusa **n. g.** *milvius* **n. sp.**, Brazil, MABILLE, p. 144, Hesperiidæ.
Vehilius subplanus, Trinidad, KAYE, p. 216, Tr. ent. Soc. London 1904, **n. sp.**
Zenida **n. g.** *abdon* Plötz, MABILLE, p. 160, Hesperiidæ.
Zophopetes **n. g.** *dysmephila* Tr., MABILLE, p. 183, Hesperiidæ.

HETEROCERA.

Corrections of nomenclature etc. in Holland's moth book, Canad. Ent. xxxvi, pp. 25 etc. : and also in Ent. News Philad. xv, pp. 104-106 etc.

CASTNIIDÆ (Vacant) and SPHINGIDÆ.

[Cf. DYAR (420), GRIEP (629), HAMPSON (654), KUSNEZOV (849), OBERTHÜR (987-989) ROTHSCILD (1195), TUTT (1413), WEBSTER (1500).]

TUTT's Vol. iv of British *Lepidoptera* is devoted to *Sphingidæ* and includes a catalogue of palæarctic forms.

TUTT, Ent. Rec. xvi, pp. 5 etc., etc., reviews Rothschild's and Jordan's work of last year, making many remarks on classification and nomenclature.

Review of ROTHSCILD & JORDAN's monograph, SEITZ, pp. 324-330, Deutsche ent. Zeitschr. Iris xvi.

- Variation, geographical distribution and antiquity with special reference to *Smerinthus*, GRIEP, pp. 89–129, plate, Helios xxi.
- Distribution in North America, WEBSTER, pp. 65–69, Canad. Ent. xxxvi.
- Descriptive notes on Japanese *Sphingide* with figg. of larvæ, NAGANO, Insect World, Vols. vii, viii.
- Development of ocellated spots, larva of *Deilephila nerii*, and *Pergesa porcellus*, KUSNEZOV, Rev. Russe Ent. iv, pp. 154–162, cuts.
- Acanthosphinx gussfeldti*, larva and pupa, AURIVILLIUS, p. 43, Arkiv Zool. ii, No. 4.
- Celerio*, varr. and hybrids of European, pp. 26–42, pls. v and vi, OBERTHÜR, Études comp. i.
- Daphnis nerii*, larva and pupa, DOLLMAN, p. 37, pl. i, Ent. Rec. xvi.
- Deilephila livornica lineata* in Algeria, larvæ variation, GIARD, pp. 203–206, Bull. Soc. ent. France 1904.
- Epistor boisduvali* (= *camertus* Boisd. nec Cr.), OBERTHÜR, p. 77, Bull. Soc. ent. France 1904; *E. bathus*, Peru, ROTHSCCHILD, p. 436, Nov. Zool. xi: **n. spp.**
- Hemaris diffinis thetis*, early stages, DYAR, p. 788, P. U. S. Mus. xxvii.
- Lepchina* **n. g.** near *Acosmeryx*, *L. tridens* **n. sp.**, Darjeeling, OBERTHÜR, p. 76, Bull. Soc. ent. France 1904.
- Lepisesia flavofasciata*, early stages, DYAR, p. 790, P. U. S. Mus. xxvii.
- Macroglossum augavra*, New Guinea, ROTHSCCHILD, p. 438, Nov. Zool. xi, **n. sp.**
- Manduca atropos* varr., BURROWS, p. 137, pl. iii, Ent. Rec. xvi.
- Marumba nympa* ♂, pl. D, fig. 17, p. 640, HAMPSON, J. Bombay Soc. xv.
- Nephele discifera* f. *rattrayi* nov., ROTHSCCHILD, p. 436, Nov. Zool. xi.
- Polyptychus murinus*, Congo, ROTHSCCHILD, p. 435, t. c. **n. sp.**
- Rhagastis jordani*, Siao-Lou, C. OBERTHÜR, p. 14, Bull. Soc. ent. France 1904, **n. sp.**
- Smerinthus*, a gynandromorphic hybrid, GILLMER, p. 140, Allg. Zeitschr. Ent. ix; *S. ocellatus* and *populi*, hybridisation, ARKLE, p. 25, Entomologist 1904; *S. tremula*, note, SLEVOGT, p. 19, Soc. ent. xix.
- Sphingonæpiopsis ansorgeri*, Angola, ROTHSCCHILD, p. 438, Nov. Zool. xi, **n. sp.**
- Temnora elegans polia* subsp. n., ROTHSCCHILD, p. 437, t. c.
- T. albilinea*, Angola, p. 436, *rattrayi*, Uganda, p. 437, ROTHSCCHILD, t. c. **n. spp.**
- Thereira polistratus*, New Guinea, ROTHSCCHILD, p. 440, t. c. **n. sp.**
- Xylophanes ockendeni*, p. 439, *rhodotus*, p. 440, Peru, ROTHSCCHILD, t. c.; *P. nabuchodonosor*, Bolivia, OBERTHÜR, p. 78, Bull. Soc. ent. France 1904: **n. spp.**

SESIIDÆ.

- Bembecia marginata* var. *albicoma*, ENGEL, p. 68, Ent. News Philad. xv.
- Parharmonica picea*, Washington, DYAR, p. 106, P. ent. Soc. Washington vi, **n. sp.**
- Sesia doryliiformis* ab. n. *unicolor*, RAGUSA, p. 114, Nat. Sicil. xvii; *S. typhieformis*, gall?, TROTTER, p. 83, Marcellia iii; *S. acerni*, habits, ENGEL, p. 71, Ent. News Philad. xv.
- S. jakuta*, Lena, HERZ, p. 19, Ofv. Finska Forh. xlv, No. 15, **n. sp.**

BOMBYCES

(*s. l.*, including CHALCOSIIDÆ, PSYCHIDÆ, HEPIALIDÆ, COSSIDÆ, AGARISTIDÆ, and various families of more or less doubtful position. *Uraniidæ* and *Epiplemidæ*, see GEOMETRIDÆ; *Cymatophoridæ*, see GEOMETRIDÆ; *Thyrididæ*, see PYRALIDÆ).*

[Cf. AURIVILLIUS (60, 62), BARNES (88), BARTEL (90), BETHUNE-BAKER (116), CHAPMAN (259), DEEGENER & SCHAPOSCHNIKOW (359), DOGNIN (398-401), DRUCE (406), DYAR (422, 427, 428, 431, 432, 435), FEDERLEY (493), HAMPSON (653, 654), HEYLAERTS (682), HEYN (685), JOANNIS (763), JORDAN (771), LITTLER (885), MARSHALL (916), OBERTHÜR (987), PACKARD (1007), PETERSEN (1034), PIEPERS & SNELLEN (1084, 1085), PÜNGELER (1111), REBEL (1121), ROTHSCILD (1194, 1198), SCHAUS (1225), STEBBING (1337), SWINHOE (1361, 1363, 1364), TSCHET-VERIKOV (1400), TURNER (1411, 1412), WARREN (1475).]

Synbombycina n. superfam. for *Brahmaeide*, *Bombycidae*, *Endromide*, *Lasiocampide*, *Liparide* and *Eupterotide*, PACKARD, P. Amer. Ac. xxxix, p. 578.

Classification of *Saturniide*, AURIVILLIUS, pp. 15-27, with synopsis of larvæ and pupæ, Arkiv Zool. ii, No. 4.

Cossidæ, notes on characters, on larval tubercles and on position of *Culama expressa*, QUAIL, pp. 93-97, pl. v, Entomologist 1904.

Australian *Lymantriidæ*, in which is included *Aganaidæ*, TURNER, pp. 469-481, Tr. ent. Soc. London 1904.

The *Syntomide* of Java, with descriptions of larvæ, PIEPERS & SNELLEN, pp. 43-62, Tijdschr. Ent. xlvii.

The vegetable caterpillar, *Cordyceps* and *Hepialidæ*, KIRBY, Nature lxx, p. 44.

Acatapaustus n. g. *Noline*, *A. basifusca*, pl. vi, fig. 25, p. 415, *ckeikei* fig. 20, p. 416, n. spp., New Guinea, BETHUNE-BAKER, Nov. Zool. xi.

Acco n. g. *Lithosiine*, *A. bicolora*, pl. v, fig. 21, n. sp., New Guinea, BETHUNE-BAKER, p. 418, t. c.

Adelocephala citrina, PARANA, SCHAUS, p. 142, Tr. Amer. ent. Soc. xxx; *A. nisa*, Peru, p. 242, *hodova*, *eugenia*, Guiana, *smithi*, Colombia, p. 243, *yucatanana*, Yucatan, *lineata*, Paraguay, p. 244, DRUCE, Ann. Nat. Hist. xiii : n. spp.

Adoneta spinuloides (= *leucosigma* Pack.), DYAR, p. 43, J. N. York ent. Soc. xii; *A. bicaudata*, N. America, id. l. c. n. sp.

Æolosia atropunctata var. *alba*, pl. xi, fig. 2, p. 155, SNELLEN, Tijdschr. Ent. xlvii.

Æthria innotata, Petropolis, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, n. sp.

Aflia osleri, Arizona and Mexico, DYAR, p. 64, P. ent. Soc. Washington vi, n. sp.

Aganais speciosa, larva, cuts, and pupa, AURIVILLIUS, p. 38, Arkiv Zool. ii, No. 4.

Agonis dymus, Fergusson Is., SWINHOE, p. 155, Tr. ent. Soc. London 1904, n. sp.

Agylla hampsoni, Peru, DOGNIN, p. 358, Ann. Soc. ent. Belgique xlviii, n. sp.

* Owing to diversity of opinion as to position of *Chalcosiidæ*, *Epiplemidæ*, both *Bombyces* and *Geometridæ* should be inspected as regards these insects. As regards *Cymatophoridæ*, *Thyatrindæ*; *Noctuidæ* should also be looked through as well as *Bombyces* and *Geometridæ*.

- Altha maculata*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Amata* Fabr. prior to *Syntomis* Ochs., PROUT, p. 116, Entomologist 1904.
- Anadiasa* **n. n.** for *Nadiasa* Auriv. nec Walker, AURIVILLIUS, p. 8, Jägerskiöld exp. No. 8.
- Anaphe reticulata*, parasite, CAMERON, p. 191, Zeitschr. Hym. Dipt. iv.
- Anaxita lysandra*, N. Peru, DRUCE, p. 242, Ann. Nat. Hist. xiii; *A. martha*, Peru, DOGNIN, p. 55, Naturaliste 1904 : **n. spp.**
- Antarctia pallidivena*, Parana, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Anthela ekeikei*, New Guinea, BETHUNE-BAKER, p. 403, Nov. Zool. xi; *A. symphona*, Tasmania, p. 480, *achromata*, Queensland, p. 481, TURNER, Tr. ent. Soc. London 1904 : **n. spp.**
- Antheræa yamamai*, young larva, PACKARD, p. 569, P. Amer. Ac. xxxix.
- Apaletodes pudefacta*, Arizona and Mexico, DYAR, p. 42, J. N. York Ent. Soc. xii; *A. uvada*, Arizona, BARNES, p. 264, Canad. Ent. xxxvi; *A. mehida*, *signata*, p. 246, *banepa*, p. 247, Peru, DRUCE, Ann. Nat. Hist. xiii : **n. spp.**
- Apantesis bicolor*, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv, **n. sp.**
- Apisa sjostedti*, Cameroons, AURIVILLIUS, p. 28, Arkiv Zool. ii, No. 4, **n. sp.**
- Archylus tener*, generic characters, DYAR, p. 65, P. ent. Soc. Washington vi.
- Arctia villica* varr., WINTERSTEIN, p. 7, pl. iv, Deutsche ent. Zeitschr. Iris xvii; *A. flavia* varr., LOREZ, p. 123, Soc. ent. xix; *A. maculosa* var. *n. sojota*, TSCHETVERIKOV, p. 79, Rev. Russe Ent. iv; *A. caja*, 1542 eggs, OUDEMANS, p. 95, Ent. Ber. Nederland. i.
- Arguda erectilinea*, Singapore, SWINHOE, p. 152, Tr. ent. Soc. London 1904; *A. pratti*, New Guinea, pl. iv, fig. 33, BETHUNE-BAKER, p. 395, Nov. Zool. xi : **n. spp.**
- Argyrolepidia æqualis*, *capiens integra*, subsp. n., JORDAN, p. 446, Nov. Zool. xi.
- Argyrostigma* **n. g.** for *Lymantria niobe* Weym., AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Arhacia fascis*, valid, SCHAUS, p. 145, Tr. Amer. ent. Soc. xxx.
- A. meridionalis*, Brit. Guiana, id. l. c. **n. sp.**
- Arsenura richardsoni*, larva, PACKARD, p. 73, Canad. Ent. xxxvi.
- Asura lutara*, larva, pl. x, fig. 10, p. 157, *A. senara*, larva, p. 159, *semicirculata*, larva, pl. x, fig. 11, p. 160, *eos*, larva, fig. 12, *uniformeola*, larva, p. 16, PIEPERS, Tijdschr. Ent. xlvii.
- A. ochreomaculata*, pl. v, fig. 26, *flaveola*, fig. 22, p. 424, *brunneofasciata*, fig. 24, *unicolora*, fig. 25, *sagittaria*, fig. 23, p. 425, *rosacea*, *dinawa*, fig. 38, *aroa*, fig. 37, p. 426, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Asuridia ridibunda*, Batavia, pl. xi, fig. 5, p. 156, larva, pl. x, fig. 9, PIEPERS & SNELLEN, Tijdschr. Ent. xlvii, **n. sp.**
- Athletes steindachneri*, East Africa, REBEL, p. 64, pl. ii, Ann. Hofmus. Wien xix, **n. sp.**
- Attacus atlas* subsp. n., FRUHSTORFER, pp. 283-290, Ent. Meddel. ii; *A. atlas* varr. n., FRUHSTORFER, p. 169, Soc. ent. xviii; *A.*, notes, PACKARD, p. 5, Ent. News Philad. xv.
- A. vibidia*, Tucuman, DRUCE, p. 244, Ann. Nat. Hist. xiii, **n. sp.**
- Automeris pygmæa*, Parana, SCHAUS, p. 141, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Automolis dolens*, Paraguay, DRUCE, p. 241, Ann. Nat. Hist. xiii, **n. sp.**
- Axiologa* **n. g.** *Lymantriidæ* for *pura* Luc., TURNER, p. 477, Tr. ent. Soc. London 1904.
- Birthisma plagioscia* = (*Doratifhora aspidophora* Low.), TURNER, p. 241, Tr. R. Soc. S. Austral. xxviii.
- B. leucosticta*, *dochmographa*, Queensland, TURNER, t. c.; *B. basibrunnea*,

- E. Africa*, SWINHOE, p. 154, Tr. ent. Soc. London 1904; *B. dinawa*, New Guinea, pl. v, fig. 33, BETHUNE-BAKER, p. 385, Nov. Zool. xi : **n spp.**
- Bombyx mori*, primitive form *Theophila mandarina*, DEMAISON, p. 109, Bull. Soc. ent. France 1904; *B. mori*, number of eggs, their fertility etc., GAL, Bull. Soc. Nîmes xxxi, pp. 37-43.
- Brahmea japonica*, egg, larva, affinities, PACKARD, pp. 570-578, P. Amer. Ac. xxxix.
- Burgena splendida pectoralis* subsp. n., JORDAN, p. 444, Nov. Zool. xi.
- Byrsia aurantiaca*, larva, PIEPERS, p. 148, Tijdschr. Ent. xlvii; *B. amœna guizonis* subsp. n., JORDAN, p. 443, Nov. Zool. xi.
- Caligula japonica*, life-history, PACKARD, pp. 564-568, P. Amer. Ac. xxxix.
- Callimorpha dominula*, var. from feeding, ZANG, p. 224, Allg. Zeitschr. Ent. ix.
- C. coccinea*, Borneo, SWINHOE, p. 151, Tr. ent. Soc. London 1904, **n. sp.**
- Callosamia calleta*, life-history, PACKARD, pp. 547-551, P. Amer. Ac. xxxix.
- Camerunia ? flava*, Zomba, pl. xxxiii, figg. 5, 6, p. 697, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Caprimina cerulescens mononis* subsp. n., JORDAN, p. 443, Nov. Zool. xi.
- C. choiseuli*, Solomon islds, id. t. c. **n. sp.**
- Cascera bella*, New Guinea, pl. v, fig. 44, BETHUNE-BAKER, p. 374, Nov. Zool. xi, **n. sp.**
- Caviria dinawa*, New Guinea, BETHUNE-BAKER, p. 397, t. c. **n. sp.**
- Celama fuscibasis*, pl. v, fig. 42, *aroa*, figg. 39, 41, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Ceramidia butleri*, carried to British Columbia, COCKLE, p. 204, Canad. Ent. xxxvi.
- Cerura australis* var. = (*multipunctata* Bak.), TURNER, p. 833, P. Linn. Soc. N. S. Wales 1904.
- C. multipunctata*, New Guinea, pl. vi, fig. 9, BETHUNE-BAKER, p. 381, Nov. Zool. xi, **n. sp.**
- Ceryx subformicina*, *aroa*, p. 382, *swinhoei*, p. 383, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Chalcosia viridisuffusa*, Borneo, SWINHOE, p. 155, Tr. ent. Soc. London 1904, **n. sp.**
- Chalia laminati*, Tonkin, HEYLAERTS, p. 419, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Chelura hemileuca*, New Guinea, pl. iii, fig. 25, p. 322, ROTHSCILD, Nov. Zool. xi.
- Chionocema trigutta*, larva, *C. rejecta* = (*Lexis bipunctigera* Walk.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4; *C. javanica*, larva, pl. x, fig. 6, p. 151, *pitana*, larva, fig. 7, p. 153, *bianca*, larva, fig. 8, p. 154, PIEPERS, Tijdschr. Ent. xlvii.
- C. affinis*, Java, pl. xi, fig. 1, p. 152, SNELLEN, t. c.; *C. albomaculata*, pl. iv, fig. 35, p. 422, *aroa*, *brunnea*, *dinawa*, *charybdis*, pl. v, fig. 27, p. 423, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Chliara notha* to *Hapigia*, SCHAUS, p. 149, Tr. Amer. ent. Soc. xxx.
- Chondrostega constantina*, p. 53, pl. iv, figg. 46, 53, OBERTHÜR, Études comp. i.
- Chrysoglia bipunctata*, New Guinea, pl. vi, fig. 26, BETHUNE-BAKER, p. 420, Nov. Zool. xi, **n. sp.**
- Chrysopoloma crawshayi*, E. Africa, pl. xxxiii, fig. 8, p. 699, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Chrysoscota flavostrigata*, New Guinea, BETHUNE-BAKER, p. 417, Nov. Zool. xi, **n. sp.**
- Citheronia brissoti*, metamorphosis, GALLARDO, p. 268, Bull. Soc. ent. France 1904.

- Clania lewinii*, habits, oviposition etc., LITTLER, pp. 310-315, Entomologist 1904.
- Clemensia albata*, early stages, DYAR, p. 793, P. U. S. Mus. xxvii.
- Cleolosia aroa*, New Guinea, pl. vi, fig. 29, BETHUNE-BAKER, p. 424, Nov. Zool. xi, **n. sp.**
- Clerckia securizonis guizonis* subsp. n., JORDAN, p. 442, Nov. Zool. xi.
- Clisiocampa americana*, natural history, SURFACE (1356); *C. americana*, no. of eggs, GIRAULT, p. 2, Ent. News Philad. xv.
- Cnethocampa pityocampa*, experiments on larva, ROCQUIGNY-ADANSON, Feuille Natural. xxxiv, pp. 186, 187.
- Contheyla lola, brunnea*, Borneo, SWINHOE, p. 153, Tr. ent. Soc. London 1904; *C. pratti*, pl. v, fig. 46, *ekeikei*, p. 385, *birthama*, p. 386, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Correbidia apicalis*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxxvi, **n. sp.**
- Cossus cossus*, larval habit, SCHUSTER, p. 283, Zool. Garten xlv.
- C. tropicalis*, Brit. Guiana, SCHAUS, p. 142, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Cricula trifenestrata*, note, BOUVIER, p. 254, Bull. Soc. ent. France 1904.
- Ctenucha albolineata*, N. Peru, DRUCE, p. 241, Ann. Nat. Hist. xiii; *C. projecta*, Peru, DOGNIN, p. 67, Naturaliste 1904; *C. annulata*, Bolivia, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Cyanopepla samarca*, Bolivia, SCHAUS, p. 135, t. c. **n. sp.**
- Cycethra n. g. Lasiocampide*, *C. aroa* **n. sp.**, New Guinea, BETHUNE-BAKER, p. 393, Nov. Zool. xi.
- Dahana cubana*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Dasychira*, larvæ of W. African, and notes, AURIVILLIUS, pp. 57-60, Arkiv Zool. ii, No. 4.
- D. angelus*, Mongolia, TSCHETVERIKOV, p. 77, Rev. Russe Ent. iv; *D. pulchripes*, p. 58, *cameruna*, p. 59, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4; *D. hieroglyphica*, p. 144, *libella, bergmannii*, p. 145, *ila*, p. 146, Ashanti, SWINHOE, Tr. ent. Soc. London 1904; *D. subnigra*, pl. vi, fig. 41, *subnigropunctata*, fig. 40, *brunnea*, fig. 30, p. 404, *minor*, fig. 27, *kenricki*, pl. iv, fig. 27, p. 405, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Dasychiroides n. g. Lymantriidæ*, p. 405, *obsoleta*, pl. vi, fig. 43, *nigrostrigata*, fig. 28, *pratti*, fig. 7, p. 406, *bicolora*, fig. 6, *brunneostrigata*, fig. 8, p. 407, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.
- Deilemera*, synonymy and taxonomy, pp. 39, 40 = (*Xylecata* Sw.), p. 41, *D. simplex*, larva, cuts, p. 41, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- D. hemixantha*, Cameroons, AURIVILLIUS, p. 41, t. c., *D. rattrayi*, Uganda, SWINHOE, p. 147, Tr. ent. Soc. London 1904; *D. eddela*, Eugano, SWINHOE, p. 420, Ann. Nat. Hist. xiv; *D. kebeæ*, pl. vi, fig. 36, *dinawa*, fig. 37, p. 411, *pratti*, fig. 38, p. 412, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Dendrolimus pini* and allies, synonymy, *D. segregatus*, distinct by genitalia, PETERSEN, pp. 163-166, Rev. Russe Ent. iv.
- Diacrisia sanio* var. *n. caucasica*, SCHAPOSCHNIKOV, p. 253, Annuaire Mus. St. Petersb. ix; *D. kasloa*, early stages, DYAR, p. 794, P. U. S. Mus. xxvii.
- D. pratti*, pl. iv, fig. 23, p. 412, *dinawa*, fig. 25, *kebea*, fig. 24, p. 413, New Guinea, BETHUNE-BAKER, Nov. Zool. xi; *D. kasloa*, Kootenay, DYAR, p. 18, P. ent. Soc. Washington vi : **n. spp.**
- Dicentria ravana*, San Salvador, *D. ? hertha*, Tucuman, DOGNIN, p. 116, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Dicranura vinula*, larval cannibalism, ZANG, p. 225, Allg. Zeitschr. Ent. ix; *D. himalayana*, larva, HAMPSON, p. 150, J. Bombay Soc. xvi.
- Dinawa n. g. Limaedidæ*, *D. rufa*, pl. v, fig. 32, *nigricans*, fig. 11, **n. spp.**, New Guinea, BETHUNE-BAKER, p. 386, Nov. Zool. xi.
- Diversosexus n. g. Lymantriidæ*, p. 402, *D. bicolor*, pl. vi, fig. 4, *aroa*, fig. 3, p. 403, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.

- Doratifera unicolora*=(*stenora* Turn.), TURNER, p. 241, Tr. R. Soc. S. Austral. xxviii; *D. casta*, larva, RAINBOW, p. 253, pl. xxix, Rec. Austral. Mus. v.
- Duomitus leuconotus*, habits, life-history, STEBBING, pp. 25-30, J. Asiat. Soc. Bengal lxxiii, part 2.
- D. benestriata*, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv, **n. sp.**
- Dysauxes punctata* var. *n. ragusaria*, ZICKERT, p. 97, Nat. Sicil. xvii.
- Eilema pulverosa*, Cameroons, AURIVILLIUS, p. 34, Arkiv Zool. ii, No. 4, **n. sp.**
- Eligma* referred to *Arctiidae*, *E. hypsoides*, larva, p. 36, *E. duplicata*, larva and pupa, cuts, p. 37, AURIVILLIUS, t. c.
- Elysium barnesi*, Cuba, *systron*, Parana, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Entometa spodopa*, *plinthopa*, Queensland, TURNER, p. 239, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Eohemera* **n. g.** for *Nyctemera fulleri* Druce, AURIVILLIUS, p. 42, Arkiv Zool. ii, No. 4.
- Epanaphe* **n. g.** for *moloneyi* Dr., and *carteri* Walsingh., AURIVILLIUS, p. 8, t. c.; *E. clarilla*, Mashonaland, pl. xxxiii, fig. 10, p. 699, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Epipyrops navai*, Japan, DYAR, p. 19, P. ent. Soc. Washington vi, **n. sp.**
- Eragisa viridis*, Rio Janeiro, *E.? sabulosa*, Chiriqui, SCHAUS, p. 144, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Eriogaster philippsi*, Haifa, BARTEL, p. 10, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Eucreon cubensis*, *irrorata*, Cuba, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Euchromia lethe*, larva, AURIVILLIUS, p. 33, Arkiv Zool. ii, No. 4.
- Eucyane gundlachia*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Eugoa tricolora*, pl. v, fig. 13, *conflua*, fig. 12, New Guinea, BETHUNE-BAKER, p. 427, Nov. Zool. xi, **n. spp.**
- Eunotela moqui*, Arizona, BARNES, p. 266, Canad. Ent. xxxvi, **n. sp.**
- Euprepia pudica*, stridulation, POWELL, p. 327, Ent. Rec. xvi.
- Euproctilla* **n. g.** near *Euproctis*, *E. insignis*, *E.? disjuncta* **n. spp.**, Cameroons, AURIVILLIUS, p. 54, Arkiv Zool. ii, No. 4.
- Euproctis lyoma*, Cameroons, SWINHOE, p. 131, Ann. Nat. Hist. xiv; *E. sjostedti*, *rubroguttata*, Cameroons, AURIVILLIUS, p. 53, Arkiv Zool. ii, No. 4; *E. lycene*, Borneo, SWINHOE, p. 144, Tr. ent. Soc. London 1904; *E. revera*, New Guinea, SWINHOE, p. 421, Ann. Nat. Hist. xiv; *E. swinhoei*, pl. iv, fig. 20, *virginea*, fig. 16, p. 398, *parallelaria*, *kebea*, fig. 30, *dinawa*, fig. 29, *yulei*, fig. 28, p. 399, *rubroradiata*, fig. 21, *pratti*, fig. 13, *fuscoradiata*, pl. vi, fig. 5, p. 400, *aroa*, *nigroapicalis*, pl. iv, fig. 34, *irregularis*, pl. vi, fig. 14, *albociliata*, fig. 2, p. 401, *novæguinensis*, *sublutea*, *flavicaput*, p. 402, New Guinea, BETHUNE-BAKER, Nov. Zool. xi; *E. leptotypa*, *ericycles*, Queensland, TURNER, p. 475, Tr. ent. Soc. London 1904 : **n. spp.**
- Eupterote jaresia*, Celebes, SWINHOE, p. 152, Tr. ent. Soc. London 1904, **n. sp.**
- Eustema carama*, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, **n. sp.**
- Fentonia corticicolor*, Cameroons, p. 3, pl.-fig. 11, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. sp.**
- Gargetta africana*, Cameroons, AURIVILLIUS, p. 7, t. c. **n. sp.**
- Garudiniestis aroa*, New Guinea, pl. iv, fig. 37, BETHUNE-BAKER, p. 422, Nov. Zool. xi, **n. sp.**
- Gastropacha populifolia* var. *flava*, SCHULTZ, p. 185, Soc. ent. xviii; *G. pini*, larva, the blue stripes, CHOLODKOVSKY, p. 556, pl. xxxi, fig. 3, Zool. Jahrb. Syst. xix.

- Geodena quadriguttata* = (*Cypra bimaculata* Walk.), SWINHÖE, p. 148, Tr. ent. Soc. London 1904.
- G. semihyalina*, *bandajoma*, *accra*, p. 149, *suffusa*, *inferna*, *partita*, *surrendra*, p. 150, W. Africa, SWINHÖE, t. c. **n. spp.**
- Gerontia* **n. g.** *Megalopygidae*, *G. omayena* **n. sp.**, British Guiana, SCHAUS, p. 139, Tr. Amer. ent. Soc. xxx.
- Girpa notata* Holl. to *Geodena*, SWINHÖE, p. 151, Tr. ent. Soc. London 1904.
- Gloveria coronada*, Arizona, BARNES, p. 268, Canad. Ent. xxxvi, **n. sp.**
- Gnophela clappiana*, idiomorph **n. ruidosensis**, COCKERELL, p. 213, Entomologist 1904.
- Grammoa* **n. g.** *Lymantriidae*, p. 51, *G. striata* **n. sp.**, Cameroons, p. 52, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Graphosia ochracea*, New Guinea, pl. v, fig. 36, BETHUNE-BAKER, p. 415, Nov. Zool. xi, **n. sp.**
- Gunda kebea*, p. 370, pl. iv, fig. 2, *aroa*, p. 371, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Halesidota maculata* var. **n. eureka**, DYAR, p. 19, P. ent. Soc. Washington vi.
- H. albipennis*, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv; *H. grotei*, *tanamo*, Cuba, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Halone flavopunctata*, pl. v, fig. 28, New Guinea, BETHUNE-BAKER, p. 421, Nov. Zool. xi, **n. sp.**
- Hapigia simplex* = (*ribbei* Druce), SCHAUS, p. 148, Tr. Amer. ent. Soc. xxx.
- H. estrella*, Arizona, BARNES, p. 267, Canad. Ent. xxxvi; *H. directa*, Cuba, p. 148, *curvilinea*, *plateada*, Brit. Guiana, p. 149, SCHAUS, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Heliosia charopa*, Queensland, TURNER, p. 212, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Hemiceras pilacho*, Arizona, BARNES, p. 266, Canad. Ent. xxxvi; *H. constellata*, Costa Rica, *pogoda*, Merida, DOGNIN, p. 118, Ann. Soc. ent. Belgique xlviii; *H. moresca*, p. 147, *truncata*, *angulinea*, p. 148, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Hemileuca maia*, marching of larva, MARSHALL, pp. 260-265, Biol. Bull. vi; *H. budleyi*, life-history, SOULE, pp. 118-120, Psyche xi.
- Hepialidae*, Australian, synonymy and notes, TURNER, pp. 245-247, Tr. R. Soc. S. Austral. xxviii.
- Hepialus hectus* var., WOODBRIDGE, Entomologist 1904, p. 9, cut; *H. humuli*, variation in Faroes, ANNANDALE, p. 158, P. Phys. Soc. Edinb.
- Heterocampa dolens*, p. 248, *longula*, *luteilinea*, p. 249, Peru, DRUCE, Ann. Nat. Hist. xiii; *H. baracoana*, *santiago*, p. 145, *albidiscata*, Cuba, *sylvia*, *barensa*, Parana, p. 146, SCHAUS, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Heterogynis*, notes on habits, specific distinctions, larvæ, cocoons, with *H. canalensis* **n. sp.**, Spain, CHAPMAN, Tr. ent. Soc. London 1904, pp. 71-78, pls. xi-xiv.
- Heteronygmia manicata* Auriv. (as *Lymantria*) = (*rhodapicata* Holl.), SWINHÖE, p. 146, Tr. ent. Soc. London 1904.
- Heterusia semiflava*, New Guinea, JORDAN, p. 447, Nov. Zool. xi, **n. sp.** *Heterusia*, see also *Geometridæ*.
- Hirsutopalpis* **n. g.** *Notodontidae*, *H. fasciata* **n. sp.**, New Guinea, BETHUNE-BAKER, p. 375, Nov. Zool. xi.
- Homococera rhodocera*, Chiriqui, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Homophylotis* **n. g.** near *Procris*, *H. thyridota* **n. sp.**, Queensland, TURNER, p. 243, Tr. R. Soc. S. Austral. xxviii.
- Hyaloperina nudiuscula*, Congo, AURIVILLIUS, p. 63, Arkiv Zool. ii, No. 4, **n. sp.**

- Hygochroa intricata*, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, **n. sp.**
Hylemera funesta Warr. to *Geodena*, SWINHÖE, p. 149, Tr. ent. Soc. London 1904.
Hyleora inclyta = (*Iacerta* Dr.), TURNER, p. 832, P. Linn. Soc. N. S. Wales 1904.
Hyperæschra collaris, Khasia Hills, SWINHÖE, p. 132, Ann. Nat. Hist. xiv, **n. sp.**
Hypercydas cælitoma, variation, BETHUNE-BAKER, p. 372, Nov. Zool. xi.
Hypidota n. g. near *Thalesa*, *H. neurias n. sp.*, Parana, SCHAUS, p. 137, Tr. Amer. ent. Soc. xxx.
Hypoprepia miniata, early stages, DYAR, p. 793, P. U. S. Mus. xxvii.
Ichthyura transecta, larva, HAMPSOX, p. 150, J. Bombay Soc. xvi.
Ilema obliterans, larva, p. 143, *apicalis*, larva, p. 144, pl. x, fig. 14, *natara*, larva, p. 145, PIEPERS, Tijdschr. Ent. xlvii.
I. androconia, E. Africa, HEYN, p. 25, Soc. ent. xix; *I. ekeikei*, pl. v, fig. 16, *dinawa*, fig. 15, *costistrigata*, fig. 30, p. 419, *unicolora*, fig. 31, *hades*, fig. 14, *nivea*, fig. 21, p. 420, New Guinea, BETHUNE-BAKER, Nov. Zool. xi: **n. spp.**
Illice angelus, p. 198, *injecta*, *dorsimacula*, *liberomacula*, p. 199, N. America, DYAR, P. ent. Soc. Washington vi, **n. spp.**
Imaus niveus, *spodea*, pl. vi, fig. 1, *aroa*, *pratti*, pl. iv, fig. 15, & pl. vi, fig. 12, p. 409, *marginepunctata*, pl. vi, fig. 13, *dubia*, fig. 10, p. 410, *sulphurea*, fig. 11, p. 411, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
Imbrasia epimethea ertli subsp. n., REBEL, p. 67, pl. iii, Ann. Hofmus. Wien xix; *I. epimethea*, larva, AURIVILLIUS, p. 11, cut, Arkiv Zool. ii, No. 4.
Iropoca n. g. *Lymantriidæ*, for *rotundata* Walk., TURNER, p. 477, Tr. ent. Soc. London 1904.
Ischnocampa tovia, Peru, DOGNIN, p. 115, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Isostigena n. g. *Lasiocampidæ*, p. 395, *I. bicellata*, pl. iv, fig. 12, p. 396, **n. sp.**, BETHUNE-BAKER, Nov. Zool. xi.
Lambula aroa, *bilineata*, New Guinea, BETHUNE-BAKER, p. 416, t. c. **n. spp.**
Lasiocampa quercifolia and larva, habits, SCHUSTER, p. 285, Zool. Garten xlv.
Lasioceros n. g. *Notodontidæ*, p. 380, *L. aroa n. sp.*, New Guinea, p. 381, BETHUNE-BAKER, Nov. Zool. xi.
Lasiochra n. g. *Limacodidæ*, *L. pulchra*, pl. v, fig. 49, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 392, t. c.
Lasiolimacos n. g. *Limacodidæ*, *L. pratti*, pl. vi, fig. 32, *kenricki*, fig. 33, p. 388, *ferruginea*, fig. 50, p. 389, **n. spp.**, New Guinea, BETHUNE-BAKER, t. c.
Lepasta omaiensis, Brit. Guiana, SCHAUS, p. 144, Tr. Amer. ent. Soc. xxx, **n. sp.**
Leptonadata n. g. *Notodontidæ*, p. 2, *L. sjostedti n. sp.*, Cameroons, p. 3, AURIVILLIUS, Arkiv Zool. ii, No. 4.
Leucoma salicis, natural history, SCHUSTER, pp. 65-68, Zool. Garten xlv.
L. semihyalina, Sumatra, SWINHÖE, p. 421, Ann. Nat. Hist. xiv, **n. sp.**
Leucophobetron, characters, DYAR, p. 77, P. ent. Soc. Washington vi.
Lobeza schausi, Merida, DOGNIN, p. 117, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Lobobunæa sjostedti, characters and sexes, AURIVILLIUS, p. 9, Arkiv Zool. ii, No. 4.
Lomadonta obscura, p. 146, *saturata*, p. 147, W. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
Lonomia bethulia, Peru, DRUCE, p. 247, Ann. Nat. Hist. xiii, **n. sp.**

- Lophopteryx cuculla*, life-history, RIDING, pp. 249-252, Ent. Rec. xvi.
Ludia obscura, cut, larva and pupa, AURIVILLIUS, p. 15, Arkiv Zool. ii, No. 4.
Lyclene peloa, Sumatra, SWINHOE, p. 420, Ann. Nat. Hist. xiv, **n. sp.**
Lycmorphodes calopteridion, Organ Mts., JOANNIS, p. 289, Bull. Soc. ent. France 1904, **n. sp.**
Lymantriidae, table of Ethiopian genera, AURIVILLIUS, pp. 62-68, Arkiv Zool. ii, No. 4.
Lymantria vacillans ♀, larva and pupa, cuts, AURIVILLIUS, t. c.; *Lymantria*, cf. *Argyrostagma*.
L. novaguineensis, pl. vi, fig. 35, p. 407, *ekeikei*, fig. 18, *kebea*, fig. 22, p. 408, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
Macaduna bipunctata, pl. v, fig. 29, *aroa*, New Guinea, BETHUNE-BAKER, p. 421, t. c. **n. spp.**
Macrocneme viridifusa, Parana, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, **n. sp.**
Macrosia fumeola = (*Lithosia natalica* Möschl.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4.
Mænas punctatostrigata, New Guinea, pl. vi, fig. 15, BETHUNE-BAKER, p. 412, Nov. Zool. xi, **n. sp.**
Malacosoma neustria, variation and colour, and food, DOUGLAS, p. 43, Entomologist 1904.
Malocampa eepantherioides, Brit. Guiana, SCHAUS, p. 146, Tr. Amer. ent. Soc. xxx, **n. sp.**
Marthula aurea, Peru, DRUCE, p. 248, Ann. Nat. Hist. xiii, **n. sp.**
Muschane leechi, Amazons, p. 249, *neobule*, Costa Rica, p. 250, DRUCE, t. c. **n. spp.**
Megalopyge govana, *aricia*, *nigrescens*, S. America, SCHAUS, p. 139, Tr. Amer. ent. Soc. xxx; *M. gamelia*, Peru, p. 246, DRUCE, Ann. Nat. Hist. xiii : **n. spp.**
Megapisa n. g. Syntomiidae, p. 29, *M. nigripennis n. sp.*, Centr. Africa, p. 30, AURIVILLIUS, Arkiv Zool. ii, No. 4.
Melanergon n. g. Eupterotidae, *M. proserpina n. sp.*, New Guinea, BETHUNE-BAKER, p. 372, Nov. Zool. xi.
Meragisa dasra, p. 116, *darida*, p. 117, Peru, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Metarctia nigriceps, p. 30, *rubrovittata*, *preussi*, p. 31, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. spp.**
Mitochrista vetusta, Java, pl. xi, fig. 4, p. 163, SNELLEN, Tijdschr. Ent. xlvii, **n. sp.**
Misogada pallida, Cuba, SCHAUS, p. 145, Tr. Amer. ent. Soc. xxx, **n. sp.**
Mylantria n. g. near *Lymantria* for *xanthospila* Plötz, AURIVILLIUS, p. 54, Arkiv Zool. ii, No. 4.
Narosa aroa, New Guinea, BETHUNE-BAKER, p. 386, Nov. Zool. xi, **n. sp.**
Natada monomorpha, Queensland, TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
Neacerea nigra, Chiriqui, SCHAUS, p. 136, Tr. Amer. ent. Soc. xxx, **n. sp.**
Nemeophila cervini varr., pp. 54-59, pl. i, OBERTHÜR, Études comp. i.
Nervicompresa n. g. Limacodidae, p. 389, *N. unistrigata*, pl. iv, fig. 5, *lunulata*, fig. 4, p. 390, *albomaculata*, fig. 3, *dubia*, fig. 19, *kebea*, fig. 10, p. 391, *aroa*, fig. 6, p. 392, **n. spp.**, New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
Nesaca albimacula, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv, **n. sp.**
Nishada flabrifera, larva, pl. x, fig. 3, p. 141, PIEPERS, Tijdschr. Ent. xlvii.
N. melanopa, New Guinea, pl. v, fig. 19, BETHUNE-BAKER, p. 417, Nov. Zool. xi, **n. sp.**
Nola distributa, larva, pl. x, fig. 1, p. 139, PIEPERS, Tijdschr. Ent. xlvii.

- Notokyba* (?) *bimaculata*, *insolita*, Cameroons, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. spp.**
- Nudaria discipuncta*, larva, p. 164, PIEPERS, Tijdschr. Ent. xlvii.
- Nudarelia dione*, larva, AURIVILLIUS, p. 10, cut, Arkiv Zool. ii, No. 4.
- Nyctemera* = (*Deilemerya*), TURNER, p. 471, Tr. ent. Soc. London 1904; *Nyctemera*, cf. *Eohemera*; *N. simplex*, cf. *Xylecata*.
- Nystalea kayei*, Brit. Guiana, p. 142, *guttulata*, Cuba, *malga*, *corrusca*, Rio Janeiro, p. 143, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Odonestis pruni* ab. *rosacea*, SCHULTZ, p. 185, Soc. ent. xviii.
- O. centralistrigata*, pl. iv, fig. 7, New Guinea, BETHUNE-BAKER, p. 397, Nov. Zool. xi, **n. sp.**
- Enosanda boisduvalii* ♀ = (*Lomatosticha nigrostriata* Motsch.), TURNER, p. 833, P. Linn. Soc. N. S. Wales 1904.
- Omichlis hamptoni*, pl. v, fig. 2, p. 375, *dinawa*, fig. 3, *ochracea*, fig. 6, p. 376, *griseola*, fig. 7, *pratti*, fig. 5, *rufofasciata*, pl. vi, fig. 17, p. 377, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Oeonistis bicolora*, New Guinea, pl. vi, fig. 34, BETHUNE-BAKER, p. 420, Nov. Zool. xi, **n. sp.**
- Opodiphthera papuana*, New Guinea, ROTHSCHILD, p. 601, Nov. Zool. xi, **n. sp.**
- Opsirhina aroa*, New Guinea, BETHUNE-BAKER, p. 395, Nov. Zool. xi, **n. sp.**
- Oreta angustipennis*, Niger, WARREN, p. 461, Nov. Zool. xi, **n. sp.**
- Orgyia splendida*, larva, CHAPMAN, pp. 195–198, Ent. Rec. xvi.
- Ormiscodes radama*, *O. ? choba*, Peru, DRUCE, p. 245, Ann. Nat. Hist. xiii **n. spp.**
- Osica glauca* = (*turneri* and *funerea* Bak.), TURNER, p. 834, P. Linn. Soc. N. S. Wales 1904.
- O. turneri*, pl. vi, fig. 31, *funerea*, New Guinea, BETHUNE-BAKER, p. 374, Nov. Zool. xi, **n. spp.**
- Othorene rubra*, *carisma*, p. 141, *subochreatea*, p. 142, Brit. Guiana, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Pais ansorgei*, Africa, JORDAN, p. 445, Nov. Zool. xi, **n. sp.**
- Paraceryx* **n. g.** *Syntomidae*, *P. aroa* **n. sp.**, New Guinea, BETHUNE-BAKER, p. 384, Nov. Zool. xi.
- Paradohertya* **n. g.** *Lithosiinae*, *P. trifascia*, pl. iv, fig. 36, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 421, t. c.
- Parasa toxoleuca*, Queensland, TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Parazeuzera* **n. g.** *Cossidae*, *P. celena*, pl. v, fig. 9, *aurea*, fig. 10, **n. spp.**, New Guinea, BETHUNE-BAKER, p. 384, Nov. Zool. xi.
- Peratodonta* **n. g.** *Notodontidae*, *P. brunnea* **n. sp.**, Cameroons, AURIVILLIUS, p. 6, Arkiv Zool. ii, No. 4, **n. spp.**
- Perophora bilinea*, Parana, SCHAUS, p. 141, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Phalera ? variegata*, Cameroons, AURIVILLIUS, p. 4, Arkiv Zool. i, No. 4, **n. sp.**
- Phassus schamyl*, natural history, DEGENER & SCHAPOSCHNIKOW (359).
- Phiala simplex*, pl. xxxiii, fig. 1, *marshalli*, fig. 2, Mashonaland, p. 695, *fuscodorsata*, fig. 3, *abyssinica*, fig. 4, E. Africa, p. 696, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. spp.**
- Philosamia cynthia*, variation and elimination, CRAMPTON, Biometrika iii, pp. 113–130.
- Phragmatobia fuliginosa*, habits, distribution, variation, TUTT, pp. 58–67, Ent. Rec. xvi; DOLLMAN, t. c. pp. 114–116; BACOT, t. c. pp. 176–182.
- P. urania*, *celestina*, Centr. Asia, PÜNGELER, p. 121, Soc. ent. xix; *P. ansorgei*, Angola, JORDAN, p. 442, Nov. Zool. xi: **n. spp.**
- Pielus apheges*, N. S. Wales, TURNER, p. 247, Tr. R. Soc. S. Austral. xxviii, **n. sp.**

- Poresta cossoides*, Brit. Guiana, SCHAUS, p. 144, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Porthesia*, parthenogenesis, GARBOWSKI, Zool. Anz. xxvii, p. 212.
- P. aroa*, p. 397, *alba*, *meeki*, *ekeikei*, pl. vi, fig. 22, p. 398, New Guinea, BETHUNE-BAKER, Nov. Zool. xi, **n. spp.**
- Porthetria dispar*, gynandromorph, KUSNEZOV, p. 203, Rev. Russe Ent. iv.
- Prolatoia sjostedti*, larva, cuts, AURIVILLIUS, p. 45, Arkiv Zool. ii, No. 4.
- Pselaphelia* **n. g.** for *Copaxa gemmifera* Butl., AURIVILLIUS, p. 13, cut, t. c.
- Pseudantheræa discrepans*, pupa, AURIVILLIUS, p. 12, t. c.
- Pseudapiconoma compsa*, *gloriosa*, p. 441, *fenestrata*, p. 442, Angola, JORDAN, Nov. Zool. xi, **n. spp.**
- Pseudilema* **n. g.** *Lithosinæ*, p. 418, *P. dinawa*, pl. v, figg. 17, 18, p. 419, **n. sp.**, New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Pseudoblabe oophora*, larva, p. 146, pl. x, fig. 5, PIEPERS, Tijdschr. Ent. xlvii.
- Pseudodreata* **n. g.** *Eupterotidæ*, *P. strigata* **n. sp.**, pl. v, fig. 45, New Guinea, BETHUNE-BAKER, p. 371, Nov. Zool. xi.
- Pseudodryas luteopunctata*, Peru, DOGNIN, p. 115, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Pseudogargetta* **n. g.** *Notodontidæ*, *P. diversa* **n. sp.**, pl. v, fig. 4, New Guinea, BETHUNE-BAKER, p. 373, Nov. Zool. xi.
- Pseudospiris jucunda*, Angola, JORDAN, p. 444, Nov. Zool. xi, **n. sp.**
- Pteroceroopsis* **n. g.** *Zygenidæ*, *P. unipuncta* **n. sp.**, Borneo, SWINHOE, p. 154, Tr. ent. Soc. London 1904.
- Pydna endophaea*, India, HAMPSON, p. 149, pl. d, fig. 1, J. Bombay Soc. xvi, **n. sp.**
- Pygæomorpha* **n. g.** *P. modesta*, pl. v, fig. 35, *brunnea*, fig. 34, New Guinea, **n. spp.**, BETHUNE-BAKER, p. 387, Nov. Zool. xi.
- Pygarcia neomexicana*, Texas, BARNES, p. 166, Canad. Ent. xxxvi, **n. sp.**
- Pyropsyche moncaunella*, fig., pl. ii, CHAPMAN, Ent. Rec. xvi, p. 67, **n. sp.**, also plate and explanation published in P. South London Soc. 1903 and pl. xvi, Tr. ent. Soc. London 1904.
- Rebelia plumella*, natural history, KLOS, pp. 607-609, Verh. Ges. Wien liv.
- Rhodia fugax*, sound-producing larva, PACKARD, p. 92, J. N. York Ent. Soc. xii; *R. fugax*, life-history, PACKARD, pp. 559-564, P. Amer. Ac. xxxix.
- Rhynchophalera* **n. g.** *Notodontidæ*, p. 1, *R. signata* **n. sp.**, Cameroons, p. 2, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Rifargia picta*, *guianensis*, Brit. Guiana, SCHAUS, p. 147, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Roeselia ustipennis*, larva, pl. x, fig. 2, p. 140, PIEPERS, Tijdschr. Ent. xlvii.
- R. basifusca*, New Guinea, pl. vi, fig. 24, BETHUNE-BAKER, p. 415, Nov. Zool. xi, **n. sp.**
- Rothia mariae*, Uganda, SWINHOE, p. 139, Tr. ent. Soc. London 1904, **n. sp.**
- Rothschildia*, characters, larva, PACKARD, p. 4, Ent. News Philad. xv; *R. jorulla*, pp. 552-554, *orizaba*, pp. 555, 556, *jacobæ*, pp. 557-559, partial life-histories, PACKARD, P. Amer. Ac. xxxix.
- R. steinbachi*, Tucuman, ROTHSCILD, p. 601, Nov. Zool. xi, **n. sp.**
- Sapelia flavipectus* ♂, SWINHOE, p. 131, Ann. Nat. Hist. xiv.
- S. sulphureivena*, Cameroons, p. 50, larva and pupa, cuts, p. 51, AURIVILLIUS, Arkiv Zool. ii, No. 4, **n. sp.**
- Sarosia meridensis*, Venezuela, SCHAUS, p. 135, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Saturnia pavonia* ab. *n. stefanelli*, ROSTAGNO, p. 122, Boll. Soc. zool. Ital. xii, p. 122.

- Scalmicauda? fuscinota*, Cameroons, AURIVILLIUS, p. 5, fig. 13, Arkiv Zool. ii, No. 4, **n. sp.**
- Scaptosyle thestias*, pl. xi, fig. 6, p. 149, *bifasciata*, fig. 7, p. 150, Java, SNELLEN, Tijdschr. Ent. xlvii; *S. aroa*, New Guinea, pl. vi, fig. 19, BETHUNE-BAKER, p. 422, Nov. Zool. xi : **n. spp.**
- Scepsis packardii* var. *n. cocklei*, DYAR, p. 792, P. U. S. Mus. xxvii.
- Schistophleps bicolora*, pl. 5, fig. 40, *aroa*, New Guinea, BETHUNE-BAKER, p. 426, Nov. Zool. xi, **n. spp.**
- Scoliacta aroa*, p. 416, *hampsoni*, pl. v, fig. 20 and pl. vi, fig. 23, p. 417, New Guinea, BETHUNE-BAKER, t. c. **n. spp.**
- Scopelodes tantula*, Khasia Hills, SWINHÖE, p. 132, Ann. Nat. Hist. xiv; *S. dinawa*, pl. v, fig. 48, p. 384, *nitens*, fig. 51, p. 385, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Scrancia nigra*, W. Africa, AURIVILLIUS, p. 7, Arkiv Zool. ii, No. 4, **n. sp.**
- Sibine boniierensis*, mode of emergence, KÜNCKEL, C.R. Ac. Sci. cxxxviii, p. 1624.
- Siccia tau* ♀, pl. xi, fig. 3, p. 155, SNELLEN, Tijdschr. Ent. xlvii.
- Slossonella* **n. g.** near *Heterogenea*, *S. tenebrosa* **n. sp.**, Florida, DYAR, p. 117, P. ent. Soc. Washington vi.
- Somatoxena* **n. g.** *Lymantriidae*, type *lasea* Druce, AURIVILLIUS, p. 66, Arkiv Zool. ii, No. 4.
- Somera oxoia*, Borneo, SWINHÖE, p. 152, Tr. ent. Soc. London 1904, **n. sp.**
- Spatialia argentifera* ♂, TURNER, p. 832, P. Linn. Soc. N. S. Wales 1904.
- Sphinta* **n. g.** *Lasiocampidae*, *S. cossoides* **n. sp.**, Parana, SCHAUS, p. 140, Tr. Amer. ent. Soc. xxx.
- Spilosoma fuliginosa*, digestive system of larva, BORDAS, C.R. Soc. Biol. lvi, pp. 1099, 1100; *S. mendica* and var. *rustica*, wing and spot development, mimicry, FEDERLEY, pp. 178–181, Allg. Zeitschr. Ent. ix.
- Sporostigena* **n. g.** *Lasiocampidae*, *S. uniformis*, pl. iv, fig. 11, **n. sp.**, New Guinea, BETHUNE-BAKER, p. 396, Nov. Zool. xi.
- Squamosala* **n. g.** *Limacodidae*, p. 392, *S. nigroscigmata*, pl. v, fig. 47, p. 393, **n. sp.**, New Guinea, BETHUNE-BAKER, t. c.
- Stauropus moides*, Assam, HAMPSON, p. 150, J. Bombay Soc. xvi; *S. viridissimus*, pl. iv, fig. 1, *kebea*, pl. v, fig. 52, p. 378, *dubiosus*, pl. vi, fig. 39, *bella*, pl. iv, fig. 14, *dinawa*, fig. 17, p. 379, *pratti*, fig. 18, p. 380, New Guinea, BETHUNE-BAKER, Nov. Zool. xi : **n. spp.**
- Stenoscapta phlogozona*, Townsville, TURNER, p. 212, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Stibolepis hologramma*, Mashonaland, pl. xxxiii, fig. 7, p. 697, AURIVILLIUS, Tr. ent. Soc. London 1904, **n. sp.**
- Stracena fuscivena* ♂, SWINHÖE, p. 144, Tr. ent. Soc. London 1904; *S. fuscivena* ♂ ♀, pl. i, figs. 1, 2, larva and pupa, p. 42, cuts, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Susica alpheia* (= *Lethocephala eremospila* Low.), *T. miltocosma* (= *Momopola cosmocalla* Low.), TURNER, p. 243, Tr. R. Soc. S. Austral. xxviii.
- Synogdoa* **n. g.** *Lymantriidae*, p. 52, *S. simplex* **n. sp.**, Cameroons, p. 53, AURIVILLIUS, Arkiv Zool. ii, No. 4.
- Syntomeida hampsonii*, Arizona, BARNES, p. 165, Canad. Ent. xxxvi, **n. sp.**
- Syntomidae*, revision of Australian, TURNER, pp. 834–858, P. Linn. Soc. N. S. Wales 1904.
- Syntomis phegea* varr. *n. krugari*, pl. i, fig. 2, *cyclopea*, fig. 3, RAGUSA, p. 20, Natural. Sicil. xvii; *S. phegea* var. *n. sexmaculata*, GIANELLI, t. c. p. 25.
- S. orphana*, Java, SNELLEN, p. 57, Tijdschr. Ent. xlvii; *S. xanthura*, p. 843, *choneutospila*, p. 844, *chromatica*, p. 845, *paradelpha*, *magistri*, p. 846, *prosomæa*, p. 850, *heptaspila*, p. 852, *melitospila*, p. 853, *dyschlæna*, p. 855, Australia, TURNER, P. Linn. Soc. N. S. Wales 1904 : **n. spp.**
- Taragama dinawa*, pl. iv, fig. 8, *rubiginea*, fig. 2, *prosperina*, fig. 9, New Guinea, BETHUNE-BAKER, p. 394, Nov. Zool. xi, **n. spp.**

- Tarsolepis sommeri*, *dinawensis* subsp. n., BETHUNE-BAKER, p. 373, t. c.
Telea, and other *Attaci*, spinning habits, WEBSTER, p. 133, FOSTER, t. c.
 p. 144, Canad. Ent. xxxvi; *T. polyphemus*, position of cocoons, COCKLE,
 p. 100, Canad. Ent. xxxvi; *T. polyphemus*, spinning habits, WEBSTER,
 p. 336, Canad. Ent. xxxvi.
Terphothrix lanaria, larva, AURIVILLIUS, p. 61, cuts, Arkiv Zool. ii, No. 4.
Thanatopsyche apicalis, Bahamas, HAMPSON, p. 180, Ann. Nat. Hist. xiv,
 n. sp.
Themerastis amalopa, Cairns, TURNER, p. 833, P. Linn. Soc. N. S. Wales
 1904, n. sp.
Theophila mandarina, cf. *Bombyx mori*.
Thoscora n. g. *Megalopygidae*, p. 139, *T. brugea* n. sp., Venezuela, p. 140,
 SCHAUS, Tr. Amer. ent. Soc. xxx.
Thosea bombycoides (= *erecta* Swinh. = *Doratiphora amphibrota* Low.),
 TURNER, p. 242, Tr. R. Soc. S. Austral. xxviii.
T. peralbida, Poona, SWINHÖE, p. 153, Tr. ent. Soc. London 1904, n. sp.
Tigrioides = (*Lexis* Hamps.), AURIVILLIUS, p. 35, Arkiv Zool. ii, No. 4.
Trochuda n. g. *Liparidae*, *T. bilinea* n. sp., Brit. Guiana, SCHAUS, p. 140,
 Tr. Amer. ent. Soc. xxx.
Tuerta hemicycla, Bahamas, HAMPSON, p. 166, Ann. Nat. Hist. xiv;
T. thomensis, St. Thomé, JORDAN, p. 445, Nov. Zool. xi : n. spp.
Viana, defined, p. 688, *V. crowleyi*, Sierra Leone, p. 699, pl. xxxiii, fig. 9,
 n. sp., AURIVILLIUS, Tr. ent. Soc. London 1904.
Virbia rotundata, Parana, SCHAUS, p. 138, Tr. Amer. ent. Soc. xxx, n. sp.
Xanthospilopteryx catori, Sierra Leone, JORDAN, p. 443, Nov. Zool. xi,
 n. sp.
Xylecata n. g. *Deilemerinae*, *X. druna* n. sp., Gaboon, and including
Nyctemera simplex Walk., SWINHÖE, p. 148, Tr. ent. Soc. London 1904.
Zeuzera eucalypti, note, LITTLER, p. 114, Entomologist 1904.
Zygæna scabiosa varr. n. *flaveola*, *hoffmanni*, *nigerrima*, p. 69, ZICKERT,
 Natural. Sicil. xvii; *Z. ephialtes*, *fausta*, *carniolica*, varr. and hybrids,
 pp. 43-52, pl. iii, OBERTHÜR, Études comp. i; *Z. fausta* and *hippo-*
crepidis, crossing, variation in Charente, DUPUY, pp. 11, 12, Feuille
 Natural. xxxv; *Z. minos* and *Syntomis phegea*, hybrid, VAN ROSSUM,
 p. 94, Ent. Ber. Nederl. i; *Z. trifolii* and *filipendulæ*, hybridisation,
 SOUTH, p. 15, Entomologist 1904; *Z. fausta*, *hippocrepidis*, coupled,
Z. fausta var., DUPUY, p. 226, Bull. Soc. ent. France 1904.

NOCTUIDÆ.

[Cf. ALPHÉRAKY (25), BARNES (88), BARTEL (91), BETHUNE-BAKER (116),
 DYAR (420, 422, 431, 432, 439), FUCHS (572), HAMPSON (653), HAVER-
 HORST (666), HERZ (680, 680A), HOLE (696), JOANNIS (763), MEYRICK
 (947, 948), OBERTHÜR (987), PÜNGELER (1110, 1111), REBEL (1122),
 SCHAUS (1225), SMITH (1312-1314), SWINHÖE (1361, 1364), THURAU
 (1386), TSCHETVERIKOV (1400), TURNER (1411).]

Remarks on the classification of *Noctuidæ* with table of subfam. and of
 phylogeny, and on Hampson's recent Catalogue, SMITH, J. N. York
 Ent. Soc. xii, pp. 93-104.

The head-shield of pupa, HAVERHORST (666).

Abrostola asclepiadis, var. n. *jagowi*, BARTEL, p. 160, Deutsche ent.
 Zeitschr. Iris xvii.

Acantholipes mesoscota, Bahamas, HAMPSON, p. 171, Ann. Nat. Hist. xiv
 n. sp.

Acontia ceyvestensis n. var., DYAR, p. 63, P. ent. Soc. Washington vi.

A. ? harmina, *medaliba*, Parana, SCHAUS, p. 163, Tr. Amer. ent. Soc. xxx,
 n. spp.

- Acronycta alni*, larvæ, the hairs and yellow mark, CHOLÓDKOVSKY, Zool. Jahrb. Syst. xix, p. 554, pl. xxxi, figg. 1, 2.
- A. albonigra*, Korea, HERZ, p. 269, pl. i, fig. 3, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Adelphagrotis prasina*, early stages, DYAR, p. 819, P. U. S. Mus. xxvii.
- Admetovis similaris*, N. America, BARNES, p. 200, Canad. Ent. xxxvi, **n. sp.**
- Agrophila labuana*, Borneo, SWINHÖE, p. 139, Tr. ent. Soc. London 1904, **n. sp.**
- Agrotis fimbriola* var. *n. leonhardi*, REBEL, p. 208, pl. v, fig. 13, Ann. Hofmus. Wien xix; *A. decora* var. *n. decorata*, NEUBURGER, p. 131, Soc. ent. xix; *A. fuceta*, life-history, PÜNGELER, pp. 65–67, Natural. Sicil. xvii; *A. baja* = (*smithii* Sn.), SNELLEN, p. 91, Tijdschr. Ent. xlv.
- A. (Euxoa) impeza*, *A. (Lycophotia) oreas*, p. 122, *A. (Episilia) posterva*, p. 130, Centr. Asia, PÜNGELER, Soc. ent. xix; *A. (Platagrotis) sajana*, Mongolia, TSCHETVERIKOV, p. 77, Rev. Russe Ent. iv; *A. aldani*, p. 6, *A. (Platagrotis) vega*, p. 7, Lena, HERZ, Ofv. Finska Forh. xlv No. 15; *A. hephaestæa*, Oahu, MEYRICK, p. 346, Fauna Hawaiënsis iii: **n. spp.**
- Alaria diffusa*, Arizona, BARNES, p. 238, Canad. Ent. xxxvi, **n. sp.**
- Amiana* **n. g.** p. 104, *A. niama* **n. sp.**, Arizona, p. 105, DYAR, P. ent. Soc. Washington vi.
- Ammocania parvispina*, Mongolia, TSCHETVERIKOV, p. 78, Rev. Russe Ent. iv, **n. sp.**
- Amphoraceras* **n. g.** p. 427, *A. rothschildi*, pl. v, fig. 1, p. 428, **n. sp.**, New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Anarta mausi*, Centr. Asia, PÜNGELER, p. 130, Soc. ent. xix, **n. sp.**
- Angitia pulchra*, *perplexa*, Venezuela, *A. ? viridans*, Parana, SCHAUS, p. 165, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Antaploga hachita*, Arizona, BARNES, p. 241, Canad. Ent. xxxvi, **n. sp.**
- Apatela*, varr. *n.*, DYAR, p. 29, Canad. Ent. xxxvi; *A. dactylina-hesperida*, p. 797, *felina*, p. 798, *leporina-mæsta*, p. 799, *innotata-griseor*, p. 801, *grisea-revellata*, p. 802, *distans-dolorosa*, p. 804, *perdita*, p. 805, *impleta-illita*, p. 807, early stages, DYAR, P. U. S. Mus. xxvii.
- Aplecta nebulosa* var. *n. thompsoni*, ARKLE, p. 180, Ent. Mag. xl; *A. thompsoni* is *robsoni*, TUTT, p. 255, Ent. Mag. xl, ARKLE, t. c. p. 278.
- Aplodes rubrifrontaria* var. *n. darwiniata*, DYAR, p. 903, P. U. S. Mus. xxvii.
- Apopestes spectrum* var. *n. koreana*, HERZ, p. 315, pl. i, fig. 11, Annuaire Mus. St. Petersb. ix.
- Axiolata glycychoa*, Thursday isld., TURNER, p. 218, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Baniana pannicula*, Borneo, SWINHÖE, p. 423, Ann. Nat. Hist. xiv, **n. sp.**
- Baptarma* **n. g.** *B. felicitæ* **n. sp.**, Arizona, SMITH, p. 59, Psyche xi.
- Behrensia hutsonii*, Arizona, SMITH, p. 60, t. c. **n. sp.**
- Bleptina cardinalis*, early stages, DYAR, p. 881, P. U. S. Mus. xxvii.
- Boana broda*, Trinidad, *aroalis*, Venezuela, SCHAUS, p. 168, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Bocana madida*, Borneo, SWINHÖE, p. 143, Tr. ent. Soc. London 1904, **n. sp.**
- Bomolocha nigrobasalis*, Korea, HERZ, p. 329, pl. i, fig. 13, Annuaire Mus. St. Petersb. ix; *B. chicagonis*, N. America, DYAR, p. 105, P. ent. Soc. Washington vi: **n. spp.**
- Bryophila simulatricula*, p. 59, pl. iv, fig. 2, OBERTHÜR, Études comp. i.
- B. algama*, Parana, SCHAUS, p. 151, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Busseola* **n. g.** *Agrotinæ*, p. 55, *B. sorghicida* **n. sp.**, E. Africa, p. 56, THURAU, Berlin. ent. Zeitschr. xlix.
- Callopietria (Eriopis) miracula*, Korea, HERZ, p. 284, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Caradrina albistigma*, Borneo, SWINHÖE, p. 139, Tr. ent. Soc. London 1904;

- C. nitens*, Brit. Columbia, DYAR, p. 30, Canad. Ent. xxxvi; *C. tacna*, Texas, BARNES, p. 167, Canad. Ent. xxxvi: **n. spp.**
- Carea annæ*, p. 140, *mathilda*, p. 141, Borneo, SWINHOE, Tr. ent. Soc. London 1904, **n. spp.**
- Casandria poliotis*, Bahamas, HAMPSON, p. 170, Ann. Nat. Hist. xiv, **n. sp.**
- Catocala obscura*, larva, *residua* distinct, DODGE, p. 115, Canad. Ent. xxxvi.
- Caularis lunata*, Bahamas, HAMPSON, p. 169, Ann. Nat. Hist. xiv, **n. sp.**
- Chamyla vecors*, Centr. Asia, PÜNGELER, p. 131, Soc. ent. xix, **n. sp.**
- Cleoceris*, discolor, New Mexico, SMITH, p. 55, Psyche xi, **n. sp.**
- Collusa ekeikei*, New Guinea, pl. vi, fig. 42, BETHUNE-BAKER, p. 429, Nov. Zool. xi, **n. sp.**
- Copablepharon sanctæmonicæ*, California, DYAR, p. 64, P. ent. Soc. Washington vi, **n. sp.**
- Corula delosticha*, Queensland, TURNER, p. 215, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Crypsotidia wollastoni*, figg., AURIVILLIUS, p. 9, Jägerskiöld exp., No. 8.
- Cucullia linosyridis* varr., larva, p. 32, pl. ii, figg. 3, 4, 12, *C. umbratica* var., p. 32, *anthemidis*, larva, p. 34, FUCHS, Jahrb. nassau. Ver. lvii.
- C. clarior*, Sarepta, FUCHS, p. 31, pl. ii, fig. 2, t. c.; *C. indicta*, Calgary, SMITH, p. 154, Canad. Ent. xxxvi; *C. aqua*, Arizona, BARNES, p. 203, Canad. Ent. xxxvi, *C. oribac*, Arizona, BARNES, p. 237, t. c.: **n. spp.**
- Cydosis punctistriga*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Cymatophora*, cf. *Geometridæ*.
- Cyrima muscosa*, Mexico, SCHAUS, p. 152, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Dargida procincta*, early stages, DYAR, p. 860, P. U. S. xxvii.
- Dasyampa rubiginea*, figg. 40-43, *staudingeri*, figg. 47-51, varr., pp. 62-65, OBERTHÜR, Études comp. i.
- Dianthæcia lypra*, Askhabad, PÜNGELER, p. 287, pl. vi, fig. 3, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Doryodes insularia*, Bahamas, HAMPSON, p. 174, Ann. Nat. Hist. xiv, **n. sp.**
- Epizeuxis (Helia) lunulata*, Korea, pl. i, fig. 12, p. 320, HERZ, Annuaire Mus. St. Petersb. ix.
- Erastria martjanovi*, Minussinsk, TSCHETVERIKOV, Rev. Russe Ent. iv; *E. rhapsina*, Thursday isld., TURNER, p. 217, Tr. R. Soc. S. Austral. xxviii; *E. panatela*, Winnipeg, SMITH, p. 60, Psyche xi; *E. cogela*, *mirabilis*, *oletta*, S. America, SCHAUS, p. 161, Tr. Amer. ent. Soc. xxx: **n. spp.**
- Ercheia abnormis*, Perak, SWINHOE, p. 424, Ann. Nat. Hist. xiv, **n. sp.**
- Eriopyga brachia*, Organ Mts., JOANNIS, p. 290, Bull. Soc. ent. France 1904, **n. sp.**
- Eublemma vestina*, Borneo, SWINHOE, p. 140, Tr. ent. Soc. London 1904, **n. sp.**
- Eupalindia magnifica*, p. 165, *rubescens*, p. 166, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Euplexia chloëropis*, Queensland, TURNER, p. 213, Tr. R. Soc. S. Austral. xxviii; *E. leucobasis*, Bahamas, HAMPSON, p. 167, Ann. Nat. Hist. xiv: **n. spp.**
- Eustrotia walta*, p. 153, *pensthis*, *editha*, Mexico, *lithodia*, *longena*, p. 154, *vicina*, *marmorata*, *thionaris*, *hermosilla*, p. 155, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Eutelia grabczewski*, Nikko, PÜNGELER, p. 289, pl. vi, fig. 5, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Euthisanotia magnifica*, Brazil, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Euxoa pestula*, Calgary, SMITH, p. 150, Canad. Ent. xxxvi, **n. sp.**

- Exyra semicrocea* var. n. *hubbardiana*, DYAR, p. 59, P. ent. Soc. Washington vi.
- Fagita parallela*, Bahamas, HAMPSON, p. 168, Ann. Nat. Hist. xiv; *F. niveigutta*, *marginata*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx: n. spp.
- Feltia vancouverensis*, p. 831, *æneipennis*, p. 832, early stages, DYAR, P. U. S. Mus. xxvii.
- Grammodes pulcherrima* Luc.=(*clementi* Swinh.), SWINHOE, p. 142, Tr. ent. Soc. London 1904.
- Graphiphora communis*, early stages, DYAR, p. 868, P. U. S. Mus. xxvii.
- Grotella blanca*, p. 239, *tricolor*, p. 240, Arizona, BARNES, Canad. Ent. xxxvi, n. spp.
- Gustiana guarda*, Mexico, SCHAUS, p. 168, Tr. Amer. ent. Soc. xxx, n. sp.
- Hadena ferrago* ab. n. *umbrata*, HERZ, p. 8, Ofv. Finska Forh. xlv, No. 15; *H. curvata*, p. 810, and *versuta*, p. 811, early stages, DYAR, P. U. S. Mus. xxvii.
- H. maida*, Brit. Columbia, DYAR, p. 30, Canad. Ent. xxxvi; *H. kyune*, Arizona, BARNES, p. 168, Canad. Ent. xxxvi; *H. multicolor*, Victoria, *geminimacula*, New Mexico, DYAR, p. 103, P. ent. Soc. Washington vi: n. spp.
- Heliophila oxygale*, p. 862, *roseola*, p. 863, *heterodoxa*, p. 865, early stages, DYAR, P. U. S. Mus. xxvii.
- Heliothis cora* ab. n. *odenwalli*, HERZ, p. 21, Ofv. Finska Forh. xlv, No. 15.
- H. dipsacea* var. n. *albida*, FUCHS, p. 38, Jahrb. nassau. Ver. lvii.
- Herminodes lignea*, *H. ? taltula*, Parana, SCHAUS, p. 167, Tr. Amer. ent. Soc. xxx, n. spp.
- Heterographa pungeleri*, Jordan, BARTEL, p. 161, Deutsche ent. Zeitschr. Iris xvii, n. sp.
- Himella infidelis*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi, n. sp.
- Hiptelia apfelbecki*, p. 228, ♂, pl. v, fig. 14, REBEL, Ann. Hofmus. Wien xix.
- Homohadena fifia*, p. 30, *cocklei*, p. 31, Brit. Columbia, DYAR, Canad. Ent. xxxvi, n. spp.
- Homoptera calycanthata*, early stage, DYAR, p. 879, P. U. S. Mus. xxvii.
- Hyblæa puera*, natural history, injuries to teak, HOLE, pp. 680-697, pls., J. Bombay Soc. xx.
- Hypena humuli*, early stages, DYAR, p. 882, P. U. S. Mus. xxvii.
- H. zarabena*, p. 168, *drucealis*, *tepicalis*, Mexico, *calistalis*, Trinidad, *castricalis*, p. 169, *purpuralis*, *freija*, *syllificalis*, S. America, *bergealis*, Jamaica, *rosealis*, Mexico, p. 170, *dasiatis*, *rivalis*, *jonesalis*, *perialis*, p. 171, *glumalis*, *gozuma*, *uvalis*, S. America, *queenealis*, *tossalis*, p. 172, *coatalis*, Mexico, *peruvialis*, *claxalis*, p. 173, *turalis*, *braziliensis*, *veltalis*, *demonalis*, *evanalis*, p. 174, *H. ? lignealis*, Rio Janeiro, *H. ? ricalis*, Costa Rica, p. 176, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Hyperodes separatalis*, Korea, HERZ, p. 331, pl. i, fig. 7, Annuaire Mus. St. Petersb. ix; *H. arrhecta*, Kauai, MEYRICK, p. 347, Fauna Hawaiiensis iii; *H. leptoxantha*, Molokai, MEYRICK, p. 130, Ent. Mag. xl: n. spp.
- Hyppa xylinoides* and *indistincta*, early stages, DYAR, pp. 814, 815, P. U. S. Mus. xxvii.
- Iphimorpha aroensis*, p. 152, *chucha*, *ethela*, p. 153, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, n. spp.
- Ischyia porphyrea*, Thursday isld., TURNER, p. 217, Tr. R. Soc. S. Austral. xxviii, n. sp.
- Isoclora leuconeura*, Centr. Asia, PÜNGELER, p. 131, Soc. ent. xix, n. sp.
- Koraia* n. g. near *Catocala*, p. 313, *K. pirata* sp. n., Korea, p. 314, pl. i, fig. 18, HERZ, Annuaire Mus. St. Petersb. ix.
- Lena* n. g. near *Hyptioxesta*, *L. poppiusi* n. sp., Lena, HERZ, p. 10, Ofv. Finska Forh. xlv.

- Lepidodes pectinata*, Rio Janeiro, SCHAUS, p. 167, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Leptina*? *petrovna*, Petropolis, SCHAUS, p. 152, t. c. **n. sp.**
- Leucania favicolor* varr. n., TUTT, pp. 252-254, Ent. Rec. xvi; *L. favicolor* var., BARRETT, p. 61, Ent. Mag. xl.
- L. jordana*, Palestine, BARTEL, p. 158, Deutsche ent. Zeitschr. Iris xvii, **n. sp.**
- Leucanitis sculpta*, Togus-torau, PÜNGELER, p. 292, pl. vi, fig. 8, Deutsche ent. Zeitschr. xvi, **n. sp.**
- Lithacodia castrensis*, Parana, SCHAUS, p. 161, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Lithocampa fatua*, Kuku-Noor, PÜNGELER, p. 288, pl. vi, fig. 4, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Lyncestis macrosticha*, Townsville, TURNER, p. 216, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Makupta argentescens*, Parana, SCHAUS, p. 166, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Mamestra crydina* var. n., DYAR, p. 32, Canad. Ent. xxxvi; *M.*, early stages of numerous N. American, DYAR, pp. 839-859, P. U. S. Mus. xxvii.
- M. obesula*, p. 151, *dodii*, p. 152, *acutetermina*, p. 153, Calgary, SMITH, Canad. Ent. xxxvi; *M. elsinora*, p. 197, *huevo*, p. 198, Arizona, BARNES, Canad. Ent. xxxvi; *M. (Discestra) eremistis*, Centr. Asia, PÜNGELER, p. 130, Soc. ent. xix; *M. isoloma*, Saravshan, PÜNGELER, p. 286, pl. vi, fig. 2, Deutsche ent. Zeitschr. Iris xvi: **n. spp.**
- Massala marmona*, p. 167, *carthia*, p. 168, Brazil, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Microcoelia parigana*, *farona*, *mastera*, S. America, SCHAUS, p. 151, t. c. **n. spp.**
- Megalodes hedychroa*, Queensland, TURNER, p. 218, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Moma tybo*, Arizona, BARNES, p. 166, Canad. Ent. xxxvi, **n. sp.**
- Mycterophora longipalpata*, early stages, DYAR, p. 877, P. U. S. Mus. xxvii.
- Nœnia marama*, Venezuela; SCHAUS, p. 165, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Noctua umbrosa* var. n., DYAR, p. 31, Canad. Ent. xxxvi; *N. perumbrosa* n. n. for the above, id. t. c. p. 102; *N. rosaria*, p. 825, *oblata*, p. 827, *sierræ*, p. 828, early stages, DYAR, P. U. S. Mus. xxvii.
- N. dislocata*, Calgary, SMITH, p. 149, Canad. Ent. xxxvi, **n. sp.**
- Nodaria aneliopis*, Thursday Isld., TURNER, p. 219, Tr. R. Soc. S. Austral. xxviii; *N. selenitis*, *diopis*, Bahamas, HAMPSON, p. 173, Ann. Nat. Hist. xiv: **n. spp.**
- Oncocnemis polingii*, Arizona, BARNES, p. 169, Canad. Ent. xxxvi; *O. laticosta*, p. 63, *tetrops*, p. 64, Arizona, DYAR, P. ent. Soc. Washington vi: **n. spp.**
- Ophiura analis* an sp. n.?, HERZ, p. 305, Annuaire Mus. St. Petersb. ix.
- Orthosia witzenmanni*, larva, LUCAS, p. 232, Bull. Soc. ent. France 1904; *O. witzenmanni*, metamorphosis, CHRÉTIEN, p. 269, Naturaliste 1904.
- O. verberata*, Calgary, SMITH, p. 153, Canad. Ent. xxxvi, **n. sp.**
- Oslaria n. g.* type *Zotheca viridifera* Grote, DYAR, p. 41, J. N. York Ent. Soc. xii.
- Oxyzenis subsimplex*, Arizona, DYAR, p. 42, t. c. **n. sp.**
- Pachetra leucophæa*, larva, etc., DOLLMAN, pp. 225-228.
- Pachnobia hyperborea* varr. p. 60, figg. 9-11, OBERTHÜR, Études comp. i.
- Palthis angularis*, early stages, DYAR, p. 881, P. U. S. Mus. xxvii.
- Parabasis n. g.* p. 428, *P. pratti*, pl. iv, fig. 26, p. 429, **n. sp.**, New Guinea, BETHUNE-BAKER, Nov. Zool. xi.
- Pericyma acrosticta*, pl. vi, fig. 6, *dispar*, fig. 7, Engeddi, PÜNGELER, p. 290, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Peridroma ypsilon* var. n. *albescens*, CLARK, p. 166, pl. viii, Ent. Rec. xvi;

- P. subjugata* var. n., DYAR, p. 31, Canad. Ent. xxxvi; *P. occulta*, p. 821 and *astricta subjugata*, p. 823, early stages, DYAR, P. U. S. Mus. xxvii.
- Perigrapha achsha*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi, **n. sp.**
- Photedes apicuta*, *virescens*, *costipuncta*, *stenelea*, p. 156, *marita*, *perigeta*, Brazil, *repanda*, *P. ? mochensis*, Mexico, p. 157, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Phyllodes enganensis*, Engano, SWINHOE, p. 424, Ann. Nat. Hist. xiv, **n. sp.**
- Platyja rufiscripta*, Borneo, SWINHOE, p. 141, Tr. ent. Soc. London 1904, **n. sp.**
- Plutypirigea anotha*, Brit. Columbia, DYAR, p. 29, Canad. Ent. xxxvi, **n. sp.**
- Pleroma cinerea*, Oregon, SMITH, p. 56, Psyche xi, **n. sp.**
- Plusia festucae* in New Zealand, PHILPOTT, p. 161, Tr. N. Zealand Inst. xxxvi.
- P. pterygota*, Oahu, MEYRICK, p. 348, Fauna Hawaiensis iii, **n. sp.**
- Polia maxima*, California, DYAR, p. 40, J. N. York Ent. Soc. xii, **n. sp.**
- Polychrysis formosa*, larva, KEARFOTT, p. 301, Ent. News Philad. xv.
- Polydesma ? striata*, Korea, HERZ, p. 303, pl. i, fig. 4, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Polyphænis sericata* var. n. *viridata*, RAGUSA, p. 18, pl. i, fig. 1, Natural. Sicil. xvii.
- Porosagrotis, thanatologia*, British Columbia, DYAR, p. 833, P. U. S. Mus. xxvii, **n. sp.**
- Praxis alampeta*, Brisbane, TURNER, p. 216, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Prodenia marima*, Parana, SCHAUS, p. 150, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Prometopus inaseuta* Gn. = (*Caradrina chromoneura* Turn. = *Erastroides lichnomima* Turn.), TURNER, p. 215, Tr. R. Soc. S. Austral. xxviii.
- P. rubrispersa*, Queensland, *xerampelina*, West Australia, p. 214, *nodynna*, Brisbane, p. 215, TURNER, t. c. **n. spp.**
- Propatria*, characters, TURNER, p. 213, t. c.
- Prothymia rosario*, Arizona, BARNES, p. 264, Canad. Ent. xxxvi, **n. sp.**
- Pseudaglossa shelfordi*, Borneo, SWINHOE, Tr. ent. Soc. London 1904, **n. sp.**
- Pseudina janeira*, Brazil, SCHAUS, p. 163, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Pseudoglaea lobata*, Arizona, BARNES, p. 237, Canad. Ent. xxxvi, **n. sp.**
- Pseudotamila avemensis*, Manitoba, DYAR, p. 41, J. N. York Ent. Soc. xii, **n. sp.**
- Rhaesna apicalis*, Borneo, SWINHOE, p. 143, Tr. ent. Soc. London 1904, **n. sp.**
- Rhizagrotis socorro*, p. 171, *salina*, p. 172, Arizona, BARNES, Canad. Ent. xxxvi, **n. spp.**
- Rhynchagrotis scopeops*, Brit. Columbia, DYAR, p. 31, Canad. Ent. xxxvi, **n. sp.**
- Sarrothripus revayana* var. n. *asiatica*, KRULIKOVSKY, p. 91, Rev. Russe Ent. iv.
- Simplicia rectalis*, autumnal var., FUCHS, p. 37, Jahrb. nassau. Ver. lvii.
- Spirama sumbana*, Sumba, p. 422, *kalaensis*, Flores, p. 423, SWINHOE, Ann. Nat. Hist. xiv, **n. spp.**
- Spragueia inversa*, *margarita*, p. 163, *taragma*, *tarasca*, p. 164, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Stellidia funerea*, *nivosita*, *diana*, Parana, SCHAUS, p. 166, t. c. **n. spp.**
- Stibadium ochoa*, Arizona, p. 241, *manti*, Texas, p. 242, BARNES, Canad. Ent. xxxvi; *S. viridescens*, Mexico, SCHAUS, p. 153, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Strabea punctilinea*, Parana, SCHAUS, p. 167, t. c. **n. sp.**
- Teniocampa communis*, Brit. Columbia, DYAR, p. 32, Canad. Ent. xxxvi; *T. terminatissima*, New Mexico, DYAR, p. 104, P. ent. Soc. Washington vi; *T. alamosa*, Arizona, BARNES, p. 201, Canad. Ent. xxxvi : **n. spp.**

- Tarache angularis, triangularis, mediana, puella*, p. 158, *praxina, caterva, villica, violetta*, p. 159, *viridans, T. ? benita*, p. 160, S. America, *T. ? pyralina*, Mexico, p. 159, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Thalpochares costagna*, p. 161, *guarama, grisella, T. ? nigripalpis, lorna*, S. America, *T. ? mirella*, Mexico, p. 162, SCHAUS, t. c. **n. spp.**
- Thermesia flavilineata*, Bahamas, HAMPSON, Ann. Nat. Hist. xiv, p. 170, **n. sp.**
- Thyria crassita, satana*, Parana, SCHAUS, p. 164, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tornacontia, mediatrix*, Arizona, DYAR, p. 62, P. ent. Soc. Washington vi, **n. sp.**
- Toxocampa moellendorffi*, Korea, HERZ, p. 318, pl. 1, fig. 1, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Toxophleps pallida, T. ? bilinia*, S. E. Brazil, SCHAUS, p. 160, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tricholita chipeta*, Colorado, BARNES, p. 202, Canad. Ent. xxxvi, **n. sp.**
- Trigonophora periculosa*, early stages, DYAR, p. 871, P. U. S. Mus. xxvii.
- Triphæna comes*, broods and varr., PROUT, pp. 1-5, Ent. Rec. xvi.
- Vestura n. g. V. adeba n. sp.*, Singapore and Borneo, SWINHOE, p. 142, Tr. ent. Soc. London 1904.
- Xerociris n. n.* for *Ciris* Gr., COCKERELL, p. 76, Ent. News Philad. xv.
- Xylina fletcheri*, p. 56, *ancilla*, p. 57, *vertina, merceda*, p. 58, Canada, Oregon, SMITH, Psyche xi, **n. spp.**
- Xylophasia unita, enigma*, p. 54, *rorulenta*, p. 55, Calgary, SMITH, t. c. **n. spp.**
- Zanclognatha ? punctalis*, Korea, HERZ, p. 324, pl. i, fig. 9, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Zosteropoda hirtipes*, early stages, DYAR, p. 866, P. U. S. Mus. xxvii.

GEOMETRIDÆ, EPIPLEMIDÆ, URANIIDÆ.

[Cf. CHRÉTIEN (275), DIETZE (380), DOGNIN (398, 399), DYAR (432), HAMPSON (653), HERZ (680, 680A), HIMSL (687), MEYRICK (947), OBERTHÜR (987), PEARSALL (1013), PROUT (1108), PÜNGELER (1110), REBEL (1122), ROTHSCHILD (1194), SWINHOE (1362, 1363), TAYLOR (1369), THIERRY-MIEG (1385), TURNER (1409, 1411), WARREN (1474-1477).]

Larvæ of French species, FRIONNET (555).

DYAR gives notes synonymical etc., on the Hulst collection for which reference must be made to P. ent. Soc. Washington vi, pp. 222-227.

Review, with changes and synonymy, of Hulst's classification of N. American *Geometridæ*, PEARSALL, pp. 208-210, Canad. Ent. xxxvi.

Revision of *Australian Geometridæ*, TURNER, P. Soc. Victoria xvi, synonymy not given in our pages.

Abraças geometraria var. *n. minor*, pl. i, fig. 17, p. 353, HERZ, Annuaire Mus. St. Petersb. ix; *A. marginata nigrounicolorata*, HAVERKAMPF, p. 187, pl. i, Ann. Soc. ent. Belgique xlviii.

A. macularia, Korea, HERZ, p. 354, pl. i, fig. 16, Annuaire Mus. St. Petersb. ix; *A. transvisata*, Peru, WARREN, p. 543, Nov. Zool. xi : **n. spp.**

Acidalia, varr. of European, FUCHS, p. 17, Soc. ent. xix; *A. deversaria* var. *laureata*, pl. ii, fig. 6, *A. difflata* distinguished, FUCHS, p. 38, Jahrb. nassau. Ver. lvii; *A. immutata* var. *n. syriacata*, NEUBURGER, p. 115, Soc. ent. xix; *A. emutaria*, egg and young larva, SICH, p. 108, Entomologist 1904; *A. metohiensis*, p. 248, pl. v, fig. 15, REBEL, Ann. Hofmus. Wien xix.

A. cajanderi, p. 13, *anaïtaria*, p. 14, Lena, HERZ, Ofv. Finska Forh. xlv, No. 15, **n. spp.**

- Acrosemia dichorda*, Bahamas, HAMPSON, p. 177, Ann. Nat. Hist. xiv, **n. sp.**
Acerotomodes lichenifera, Peru, WARREN, p. 564, Nov. Zool. xi, **n. sp.**
Æschropteryx flexilinea, olivata, Mexico, WARREN, p. 128, t. c.; *Æ. præcurvata*, Paraguay, WARREN, p. 564, t. c. **n. spp.**
Agathia elenaria, Old Calabar, SWINHÖE, p. 542, Tr. ent. Soc. London 1904; *A. pauper*, Warri, WARREN, p. 463, Nov. Zool. xi : **n. spp.**
Agia eborata? = *Cysteopteryx viridata*, TAYLOR & DYAR, pp. 46, 47, J. N. York Ent. Soc. xii.
Agraptochlora pallida, p. 463, *rubricaps*, p. 464, Angola, WARREN, Nov. Zool. xi, **n. spp.**
Alcis huamani, Peru, DOGNIN, p. 363, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Aletis rubricaput, Gold Coast, SWINHÖE, p. 578, Tr. ent. Soc. London 1904, **n. sp.**
Alex aurantiata, Obi, WARREN, p. 484, Nov. Zool. xi, **n. sp.**
Amaurinia expallidata, Trinidad, WARREN, p. 81, t. c.; *A. angulata, brunnea*, p. 525, *commixta*, p. 526, Peru, WARREN, t. c. : **n. spp.**
Ameria seminigra, Peru, WARREN, p. 81, t. c. **n. sp.**
Amraica superans var. *n. dubitans*, HERZ, p. 365, pl. i, fig. 14, Annuaire Mus. St. Petersb. ix.
Anapalta n. g. Hydriomeninae, p. 43, *perdecora, roseoliva*, Bolivia, p. 44, *sombreira*, Peru, *violetta*, Bolivia, p. 45, **n. spp.**, WARREN, Nov. Zool. xi; *A. subfusca*, Peru, WARREN, p. 576, t. c. **n. sp.**; *A. ruficoesia*, Argentina, DOGNIN, p. 359, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Anisodes aurantiata, bipunctata, p. 27, Peru, *flavidiscata*, Huatuxco, *hieroglyphica*, p. 28, *imparistigma*, Peru, *magrudiscata*, Bolivia, p. 29, *mediolineata*, Peru, *ochricomata*, Santa Marta, p. 30, *rhodostigma*, Bolivia, *subænescens*, Peru, p. 31, *torsivena*, Bolivia, p. 32, WARREN, Nov. Zool. xi; *A. decorata*, p. 507, *fulgurata, gigantula*, p. 508, *maculidiscata, multipunctata*, p. 509, *pomidiscata, rufistigma, rufulata*, p. 510, Peru, WARREN, t. c. **n. spp.**
Anisolasia n. g. Hydriomeninae, for *Cataclysmes napassa* Dogn., WARREN, p. 46, Nov. Zool. xi.
Anisoperas adulta, Colombia, *A. ? aurantiaca*, Ecuador, *A. latibrunnea*, Peru, WARREN, p. 129, t. c.; *A. dentilineata*, Mexico, p. 564, *olivata*, Bolivia, *undilinea*, Argentina, p. 565, WARREN, t. c. : **n. spp.**
Aphilopota ambusta, Angola, WARREN, p. 472, t. c. **n. sp.**
Apicia, distinguished from *Caberodes*, *A. fractilineata* ♂, *A. subfasciata* ab. nov. *obscurata*, WARREN, p. 130, t. c.; *A.*, cf. *Loxapicia, Mesedra*.
A. bottgeri, Peru, *citrina*, Venezuela, WARREN, p. 566, Nov. Zool. vi, **n. spp.**
Apiciopsis n. g. near *Apicia*, *A. angusta*, Peru, *obliquaria*, Bolivia, **n. spp.**, WARREN, p. 131, t. c.
Aplodes darwinata, life-history, DYAR, p. 121, Psyche xi.
A. punctata, Jamaica, WARREN, p. 19, Nov. Zool. xi, **n. sp.**
Aplogompha aurifera, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904, **n. sp.**
Aplorama n. g. type *Byssodes nazuda* Druce, WARREN, p. 91, Nov. Zool. xi.
Archichlora marcescens, Niger, WARREN, p. 465, t. c. **n. sp.**
Argyrotope ferruginea var. *n. albinata*, WARREN, p. 93, t. c.
Arhodina modesta, Townsville, WARREN, p. 485, t. c. **n. sp.**
Asestra ustularia, Bolivia, WARREN, p. 132, t. c. **n. sp.**
Asthena euthecta, Brisbane, TURNER, p. 243, P. Soc. Victoria xvi, **n. sp.**
Astyochia membranacea, Peru, WARREN, p. 545, Nov. Zool. xi; *A. subliturata*, Peru, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlvi : **n. spp.**
Atossa alpherakii, Korea, HERZ, p. 376, pl. i, fig. 8, Annuaire Mus. St. Petersb. ix, **n. sp.**
Axiodes, def. amended, WARREN, p. 480, Nov. Zool. xi.
A. ennomaria, S. Africa, id. l. c. **n. sp.**
Azelina nigra, Bolivia, p. 132, *ochriscripta*, Peru, p. 133, WARREN, t. c.; *A. albisepta*, p. 566, *coronata*, p. 567, Peru, WARREN, t. c.; *A. vulpecula*,

- Peru, DOGNIN, p. 369, Ann. Soc. ent. Belgique xlviii; *A. notodontina*, Peru, THIERRY-MIEG, p. 183, Naturaliste 1904 : **n. spp.**
- Bassania fortis*, Peru, WARREN, p. 567, Nov. Zool. xi, **n. sp.**
- Betulodes n. g.* for *Amphidasys crebraria* Gn., THIERRY-MIEG, p. 183, Naturaliste 1904.
- Biston calaria*, E. Africa, SWINHOE, p. 527, Tr. ent. Soc. London 1904, **n. sp.**
- Blechroma conflua*, *conspersa*, p. 502, *nigricincta*, p. 503, Peru, WARREN, Nov. Zool. xi, **n. spp.**
- Boarmia consortaria* var. *n. marginata*, HERZ, p. 372, pl. i, fig. 6, Annuaire Mus. St. Petersb. ix; *B. selenaria*, larval habits, STEBBING, p. 154, pl. xviii b, J. Linn. Soc. London xxix.
- B. dribaria*, Madagascar, p. 532, *ugandaria*, Africa, p. 533, SWINHOE, Tr. ent. Soc. London 1904; *B. cilicornaria*, Nikko, PÜNGELER, p. 296, pl. vi, fig. 15, Deutsche ent. Zeitschr. Iris xvi; *B. aroensis*, New Guinea, pl. iii, fig. 29, p. 322, ROTHSCILD, Nov. Zool. xi : **n. spp.**
- Bonatea viridilinea*, Peru, WARREN, p. 568, Nov. Zool. xi; *B. maculata*, Bolivia, DOGNIN, p. 367, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Bordeta aroensis*, New Guinea, pl. iii, fig. 37, p. 319, ROTHSCILD, Nov. Zool. xi, **n. sp.**
- Brachytenistis n. g. Ennominae*, p. 133, *B. undilinea n. sp.*, Peru, p. 134, WARREN, Nov. Zool. xi.
- Brachystichia n. g.* near *Apicia*, *B. nitida n. sp.*, Paraguay, WARREN, p. 134, t. c.
- Brachytrita n. g. Orthostixinae*, *B. cervinaria n. sp.*, E. Africa, SWINHOE, p. 576, Tr. ent. Soc. London 1904.
- Brabiroides n. g. Tephroclystiinae*, *B. peruviana n. sp.*, Peru, WARREN, p. 528, Nov. Zool. xi.
- Brachelia fumistrotata*, Peru, WARREN, p. 550, t. c. **n. sp.**
- Bryoptera bisignata*, p. 106, *canidentata*, p. 107, Peru, WARREN, t. c.; *B. ruficana*, *viridirufa*, Peru, WARREN, p. 551, t. c. : **n. spp.**
- Buttia n. g. Prosoplophinae*, *B. noctuodes n. sp.*, S. Africa, WARREN, p. 481, t. c.
- Cabira lignicolor*, Peru, WARREN, p. 125, t. c. **n. sp.**
- Callipia aurata*, Colombia, p. 79, *flagrans*, *occulta*, Peru, p. 80, WARREN, t. c.; *C. admirabilis*, p. 538, *languescens*, p. 539, Peru, WARREN, t. c.; *C. paradisea*, *rosetta*, Peru, THIERRY-MIEG, p. 140, Naturaliste 1904 : **n. spp.**
- Callipona n. g.* near *Xenographia*, *C. metabolis n. sp.*, Queensland, TURNER, p. 236, Tr. R. Soc. S. Austral. xxviii.
- Callipseustes strigosa*, *subsignata*, Bolivia, WARREN, p. 116, Nov. Zool. xi, **n. spp.**
- Callygris n. g.* for *junctilineata* and *compositata* Walk., THIERRY-MIEG, p. 141, Naturaliste 1904.
- Calocalpe mochica*, p. 361, *chimu*, p. 362, Peru, DOGNIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Calypotome conversa*, *fragmentata*, Brit. Guiana, p. 32, *inornata*, Venezuela, p. 33, WARREN, Nov. Zool. xi, **n. spp.**
- Cambogia anguinata*, *antiopata*, Bolivia, *bellissima*, p. 82, *delicatula*, *flaviflava*, p. 83, *funiculata*, *griseicosta*, p. 84, *lilacina*, Peru, *intacta*, Ecuador, p. 85, WARREN, t. c. **n. spp.**
- Campylona contingens*, Ecuador, WARREN, p. 14, t. c.; *C. brunnea*, Maripa, WARREN, p. 500, t. c. : **n. spp.**
- Caradrinopsis n. g. C. obscuraria n. sp.*, E. Africa, SWINHOE, p. 534, Tr. ent. Soc. London 1904.
- Caripeta interalbicans*, Colorado, WARREN, p. 135, Nov. Zool. xi, **n. sp.**
- Catascia haydenata* ab. nov. *obliterata*, WARREN, p. 115, t. c.
- Celerena substigmatica*, Obi, WARREN, p. 485, t. c. **n. sp.**
- Certima nummifera* to *Oenothalia*, WARREN, p. 559, t. c.

- C. canisparsa*, Peru, p. 135, *delectans*, *nubifera*, *pallidifrons*, Bolivia, p. 136, WARREN, t. c.; *C. ambusta*, p. 568, *bottgeri*, p. 569, Peru, WARREN, t. c. : **n. spp.**
- Chesias spartiata* var. n. *capriata*, PROUT, p. 60, Entomologist 1904.
- Chlorochetu* n. g. *Geometrine*, *C. longipennis* n. sp., Niger, WARREN, p. 464, Nov. Zool. xi.
- Chloroclystis fulminea* Dogn. to *Ischnopteris*, description, WARREN, p. 118, t. c.
- C. sierraria*, W. Africa, SWINHOE, p. 573, Tr. ent. Soc. London 1904 ; *C. metallospora*, p. 231, *cissocosma*, *mniochroa*, p. 232, *guttifera*, p. 233, *gonias*, *ablechra*, p. 234, Australia, TURNER, P. Soc. Victoria xvi ; *C. microptilota*, Peru, WARREN, p. 86, Nov. Zool. xi : **n. spp.**
- Chogada acaciaria* abb. n. *flavipeta*, *fumata*, WARREN, p. 474, t. c.
- Chrysocraspeda rothschildi* (1903), pl. iii, fig. 31, p. 322, ROTHSCILD, Nov. Zool. xi.
- C. leighata*, Durban, WARREN, p. 466, Nov. Zool. xi ; *C. latiflavaria*, p. 562, Nyassaland, *zearia*, *doricaria*, p. 563, *planaria*, p. 564, Madagascar, SWINHOE, Tr. ent. Soc. London 1904 : **n. spp.**
- Cidariophanes mamestrina*, Peru, WARREN, p. 556, Nov. Zool. xi, **n. sp.**
- Cimicodes ruptimacula*, Bolivia, WARREN, p. 137, t. c. **n. sp.**
- Cleora umbrosaria*, characters and position, TAYLOR, p. 135, Canad. Ent. xxxvi.
- C. gracilis*, Jamaica, WARREN, p. 107, Nov. Zool. xi, **n. sp.**
- Cnephora facula*, Peru, DOGNIN, p. 368, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Codonia quercimontaria* and *punctaria* varr., *C. porata* var. *visperaria*, FUCHS, p. 40, Jahrb. nassau. Ver. lvii.
- Cænina dentataria*, Abyssinia, SWINHOE, p. 513, Tr. ent. Soc. London 1905, **n. spp.**
- Cænocalpe elongata*, Peru, DOGNIN, p. 360, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Colpodontu phyllodontaria*, Peru, WARREN, p. 569, Nov. Zool. xi, **n. sp.**
- Comibæna flavidisca*, Peru, WARREN, p. 20, t. c. **n. sp.**
- Cophocerotis instar*, Peru, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii ; *C. argentistriga*, *ebria*, p. 539, *margaritacea*, *submuscosa*, p. 540, Peru, WARREN, Nov. Zool. xi : **n. spp.**
- Coptopteryx nigraria*, W. Africa, SWINHOE, p. 544, Tr. ent. Soc. London 1904, **n. sp.**
- Coremia ferrugata* var., WOODBRIDGE, p. 10, cut p. 9, Entomologist 1904.
- Cosymbia anandaria*, Trop. Africa, SWINHOE, p. 561, Tr. ent. Soc. London 1904, **n. sp.**
- Craspedia cymiphora*, Bahamas, HAMPSON, p. 179, Ann. Nat. Hist. xiv ; *C. atridiscata*, p. 33, *conduplicata*, Bolivia, *deaurata*, Ecuador, *dorsinigrata*, Peru, p. 34, *internexata*, Ecuador, *trias* with var. *tincta*, S. America, p. 35, *trygodata*, Bolivia, p. 36, WARREN, Nov. Zool. xi : **n. spp.**
- Cratoptera subcitrina*, Peru, WARREN, p. 137, t. c. **n. sp.**
- Crocopteryx aurora*, Peru, WARREN, p. 570, t. c. **n. sp.**
- Cryptoloba dentifascia*, India, WARREN, p. 489, t. c. **n. sp.**
- Cryptoseopa* n. g. *C. aprepes* n. sp., Queensland, TURNER, p. 238, Tr. R. Soc. S. Austral. xxviii.
- Cusiala? pulverosa*, Natal, WARREN, p. 472, Nov. Zool. xi, **n. sp.**
- Cyllopoda chibcha* ab. n. *cuneifera*, WARREN, p. 15, t. c.
- C. angustistriga*, Peru, WARREN, l. c. **n. sp.**
- Cymatophoru commaculata* Warren, to *Melanoscia*, WARREN, p. 555, Nov. Zool. xi.
- C. matilda*, British Columbia, DYAR, p. 907, P. U. S. Mus. xxvii ; *C.?* *chanchani*, Peru, DOGNIN, p. 364, Ann. Soc. ent. Belgique xlviii ;

- C. dislocata*, Peru, *muscosa*, Ecuador, WARREN, p. 108, Nov. Zool. xi;
C. modesta, Paraguay, p. 552, *reducta*, *striata*, Peru, p. 553, WARREN,
t. c. : **n. spp.**
- Darna rubriplaga*, Ecuador, *volitans*, Peru, WARREN, p. 15, t. c. ; *D. flam-*
mifera, p. 500, *prælatu*, p. 501, Peru, WARREN, t. c. : **n. spp.**
- Dasysterna* **n. g.** near *Dasyuris* for *Phytometra tristis* Butl., TURNER, p. 277,
P. Soc. Victoria xvi.
- Dasyuris cæsia*, p. 278, *hedylepta*, p. 279, Victoria, TURNER, t. c.
n. sp.
- Deilinia acrocossa*, Queensland, p. 236, *catharodes*, Hobart, p. 237, TURNER,
Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Deinopygia* **n. g.** near *Ptychopoda*, *D. caudata* **n. sp.**, Venezuela, WARREN,
p. 511, Nov. Zool. xi.
- Devara*, cf. *Emplocia*.
- Devarodes* **n. g.** *Braccinae*, *D. albibasis*, p. 96, *semialbata*, Peru, *vestigata*,
Bolivia, p. 97, **n. spp.**, WARREN, Nov. Zool. xi; *D. subtineta*, Peru,
WARREN, p. 544, t. c. **n. sp.**
- Diactinia albinodosa*, Peru, WARREN, p. 46, t. c. **n. sp.**
- Diceratucha* **n. g.** for *Ænone xenopis* Low., SWINHÖE, p. 133, Ann. Nat.
Hist. xiv.
- Dichorda obliquata*, *perpendicularata*, Mexico, WARREN, p. 503, Nov.
Zool. xi, **n. spp.**
- Dichromatopodia distans*, Santa Marta, WARREN, p. 36, t. c. **n. spp.**
- Diploctena* **n. g.** near *Xanthorhoe*, *D. argocyma* **n. sp.**, Victoria, TURNER,
p. 269, P. Soc. Victoria xvi.
- Dolichopyge canioparsa*, Ecuador, p. 46, *fulvistriga*, Bolivia, p. 47, WARREN,
Nov. Zool. xi, **n. spp.**
- Drepanodes fulvilinea*, Peru, WARREN, p. 138, t. c. **n. sp.**
- Drucina latimargo*, Peru, WARREN, p. 20, t. c. **n. sp.**
- Durbana* **n. g.** for *Fidonia setinata* Feld., WARREN, p. 470, t. c.
- Dyscia* Hub. = (*Scodionia* auctt.), WARREN, p. 476, t. c.
- D. incondita*, *perplexata*, S. Africa, id. l. c. **n. spp.**
- Dysphania chrysocraspedata*, p. 485, *deflavata*, p. 486, Sumatra, WARREN,
t. c. **n. spp.**
- Dyspteris parvula*, Brit. Guiana, WARREN, p. 527, t. c. **n. sp.**
- Ectropis subaurata* to *Myrioblephara*, WARREN, p. 475, t. c.
- E. nacaria*, Ashanti, SWINHÖE, p. 530, Tr. ent. Soc. London 1904; *E.?*
fulvitincta, Durban, WARREN, p. 474, Nov. Zool. xi; *E. hemiprosopa*,
Queensland, TURNER, p. 230, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Elphos picaria*, Celebes, WARREN, p. 490, Nov. Zool. xi, **n. sp.**
- Emmiltis* (*Craspedia*) *magnidiscata*, Angola, p. 466, *mombasæ*, E. Africa,
p. 467, WARREN, t. c. ; *E. (Craspedia) cinerosaria*, *convergens*, *per-*
fumosa, Peru, WARREN, p. 512, t. c. ; *E. fumosaria*, p. 554, *sinuaria*,
caducaria, *vitiosaria*, *peararia*, p. 556, Trop. Africa, *roezaria*, Mada-
gascar, p. 557, *cassaria*, Masai, p. 558, SWINHÖE, Tr. ent. Soc. London
1904 : **n. spp.**
- Emplocia* = (*Devara* Walk.), WARREN, p. 96, Nov. Zool. xi.
- E. coliadata*, Peru, WARREN, p. 97, t. c. **n. sp.**
- Encoma* **n. g.** *irisaria* **n. sp.**, Uganda, SWINHÖE, p. 523, Tr. ent. Soc.
London 1904.
- Encryphia* **n. g.** *argillina* **n. sp.**, Queensland, TURNER, p. 228, Tr. R. Soc.
S. Austral. xxviii.
- Ennomos*, cf. *Tmetomorpha*.
- Entogonia* **n. g.** *Enochrominæ*, *E. schistacea* **n. sp.**, Bolivia, WARREN, p. 12,
Nov. Zool. xi.
- Ephialtas fornax* ab. **n. latimargo**, WARREN, p. 16, t. c.
- Epiplema commixtata*, *pallifrons*, p. 2, *rectilinea*, p. 3, *rostrifera*, *scabra*,
p. 4, *vulpecula*, p. 5, Peru, WARREN, t. c. ; *E. dohertyi*, *semipicta*,

- Mombasa, WARREN, p. 462, t. c.; *E. lucisquamata*, Peru, WARREN, p. 494, t. c. : **n. spp.**
- Epirrhoë heliopharia*, Uganda, SWINHOE, p. 569, Tr. ent. Soc. London 1904; *E. limitata*, Peru, WARREN, p. 517, Nov. Zool. xi : **n. spp.**
- Episothalma kabaria*, W. Africa, SWINHOE, p. 541, Tr. ent. Soc. London 1904, **n. sp.**
- Erateina cæruleopicta*, Peru, WARREN, p. 536, Nov. Zool. xi, **n. sp.**
- Ereboclora ruficostaria* ab. n. *semifumata*, WARREN, p. 517, t. c.
- E. ruficostaria* with var. *pernigrata*, p. 47, *sublactea*, p. 48, Peru, WARREN, t. c. **n. spp.**
- Eriophodes indistincta*, Santa Marta, WARREN, p. 173, t. c. **n. sp.**
- Eriopygidia isolata* Kaye (as *Arima*)=(*engelkei* Warr.), p. 517, *E. rufivena* ♀, p. 518, WARREN, t. c.
- E. engelkei*, Santa Marta, *locuples*, p. 49, *rufivena*, p. 50, Peru, WARREN, t. c.; *E. nigrirubrata*, Peru, WARREN, p. 518, t. c.; *E. subigneæ*, p. 359, *flavisquamata*, p. 360, S. America, DOGNIN, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Erosia dilacerata* Guen. to *Gathynia*, WARREN, p. 495, Nov. Zool. xi.
- Eubolia semilutata* ab. n. *fuscata*, HERZ, p. 374, pl. i, fig. 15, Annuaire Mus. St. Petersb. ix.
- Eubordeta* **n. g.** *E. meeki*, pl. iii, fig. 27, *eichhorni*, figg. 32, 33, *miranda*, fig. 34, New Guinea, **n. spp.** and including *Bord. hypocala*, pl. iii, fig. 26, ROTHSCHILD, Nov. Zool. xi.
- Euestia neddaria*, Uganda, SWINHOE, p. 574, Tr. ent. Soc. London 1904, **n. sp.**
- Euchloris periphraeta*, p. 219, *argosticta*, *tanygona*, p. 220, *thalassica*, *leucospilata*, p. 221, *callisticha*, p. 222, Australia, TURNER, Tr. R. Soc. S. Austral. xxviii; *E. heterospila*, Bahamas, HAMPSON, p. 178, Ann. Nat. Hist. xiv : **n. spp.**
- Euchontha commixta*, *memor*, Peru, WARREN, p. 16, Nov. Zool. xi, **n. spp.**
- Eucymatoge peplodes*, p. 247, *scotodes*, p. 248, Queensland, TURNER, P. Soc. Victoria xvi; *E. ochrosoma*, Peru, WARREN, p. 86, Nov. Zool. xi; *E. albirivata*, p. 528, *decorata*, *longipennata*, p. 529, Peru, WARREN, t. c. : **n. spp.**
- Eudule flavinota*, *malefida*, S. America, WARREN, p. 81, t. c.; *E. arctiata*, *simulans*, Peru, WARREN, p. 541, t. c. : **n. spp.**
- Eugivira flavescens*, San Salvador, *gemina*, Merida, DOGNIN, p. 122, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Eulype albifusa*, Philippines, SWINHOE, p. 134, Ann. Nat. Hist. xiv, **n. sp.**
- Eumilonia* **n. g.** for *Milonia mediofasciata*, THIERRY-MIEG, p. 183, Naturaliste 1904.
- Euomæa carneata*, S. Africa, WARREN, p. 481, Nov. Zool. xi, **n. sp.**
- Eupagia nigerrima*, Abyssinia, SWINHOE, p. 526, Tr. ent. Soc. London 1904, **n. sp.**
- Eupithecia*; DIETZE figures and notices many varr. of Palæarctic, in addition to the n. spp. mentioned below, Deutsche ent. Zeitschr. Iris xvi, pp. 362–387, pls. iii, iv, v.
- E. cooptata*, pl. iv, figg. 24–27, South France, p. 335, *vacuata*, p. 336, pl. iii, fig. 2, *rubellata*, figg. 3–5, p. 337, Centr. Asia, *dæmoniata*, Japan, fig. 9, p. 339, *chesiata*, p. 340, figg. 13, 14, *diffisata*, p. 342, fig. 15, *vicariata*, p. 343, fig. 17, with var. *adjunctata*, p. 344, fig. 18, *relictata*, p. 345, fig. 19, *assectata*, p. 346, figg. 20, 21, Centr. Asia, *novata*, Taurus, p. 348, fig. 22, *recens*, p. 349, fig. 26, *scortillata*, p. 351, fig. 28, sp. ? fig. 29, p. 352, *extinctata*, p. 356, fig. 33, *illaborata*, fig. 34, p. 357, Centr. Asia, *dearmata*, Mesopotamia, p. 358, fig. 35, *laterata*, pl. iv, fig. 28, *concremata*, fig. 29, p. 360, Centr. Asia, DIETZE, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Eusenea castanea*, Peru, WARREN, p. 570, Nov. Zool. xi, **n. sp.**

- Eustroma nubilata*, life-history, DYAR, p. 29, Psyche xi.
- Eutomopepla fulgorifera*, Bolivia, WARREN, p. 139, Nov. Zool. xi; *E. brunnea*, Bolivia, DOGNIN, p. 367, Ann. Soc. ent. Belgique xlviii: **n. spp.**
- Exelis extorris*, Natal, WARREN, p. 482, Nov. Zool. xi; *E. fumida*, Colorado, WARREN, p. 581, t. c. **n. sp.**
- Fisera perplexata* = (*Criomacha belidearia* Feld.), WARREN, p. 492, Nov. Zool. xi.
- Fulguroides subnotata*, Peru, WARREN, p. 545, t. c. **n. sp.**
- Gabriola n. g. Ennominae*, p. 255, *G. dyari n. sp.*, Vancouver, p. 256, TAYLOR, Canad. Ent. xxxvi.
- Gagitodes plumbinotata*, Peru, WARREN, p. 519, Nov. Zool. xi, **n. sp.**
- Gastrina* Guen. = (*Passa* Walk.), *G. serrata* Walk. (as *Xylina*) = (*denticulata* Swinh.), SWINHOE, p. 133, Ann. Nat. Hist. xiv.
- G. catacticta*, Queensland, TURNER, p. 237, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Gelasma stigmatica*, Peru, WARREN, p. 20, Nov. Zool. xi, **n. sp.**
- Geolyces rufaria*, Old Calabar, SWINHOE, p. 519, Tr. ent. Soc. London 1904, **n. sp.**
- Gnophos obscurata* var. *n. mediorhenana*, pl. ii, fig. 13, p. 41, FUCHS, Jahrb. nassau. Ver. lvii; *G. lineolaria* ♀, pl. vi, fig. 21, p. 300, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi; *G. obfuscata*, *glaucinaria*, distinctions, PROUT, p. 121, Ent. Rec. xvi; *G. pentheri*, p. 282, pl. v, fig. 19, REBEL, Ann. Hofmus. Wien xix.
- G. orbicularia*, p. 297, pl. vi, fig. 16, *exsuctaria*, p. 298, fig. 17, Issyk-kul, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Gonanticlea subpilosa*, Batjan, WARREN, p. 488, Nov. Zool. xi, **n. sp.**
- Gonochlora n. g.* near *Iodis*, *G. minutaria n. sp.*, Sierra Leone, SWINHOE, p. 548, Tr. ent. Soc. London 1904.
- Gonodela leighi*, Durban, *interlineata*, p. 478, *transvisata*, p. 479, Angola, WARREN, Nov. Zool. xi, **n. spp.**
- Gonodontis bidentata* var. *n. exsul*, TSCHETVERIKOV, p. 78, Rev. Russe Ent. iv.
- G. azelinaria*, p. 526, *æmoniaria*, p. 527, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1904, **n. sp.**
- Grammicopteryx n. g.* for *Larentia anthocharidaria* Oberth., THIERRY-MIEG, p. 183, Naturaliste 1904.
- Gymnoscelis lophopus*, p. 224, *delocyma*, p. 226, *acidna*, p. 227, Australia, TURNER, P. Soc. Victoria xvi, **n. spp.**
- Gyostega n. g. Palyadinae*, p. 93, *G. floccosa n. sp.*, Peru, p. 94, WARREN, Nov. Zool. xi.
- Habrosyne scripta*, early stages, DYAR, p. 885, P. U. S. Mus. xxvii.
- Hæmalea atridiscata*, Peru, WARREN, p. 37, Nov. Zool. xi, **n. sp.**
- Haggardia n. g.* for part of *Eubyja*, with *H. melanostigma n. sp.*, Angola, WARREN, p. 473, t. c.
- Hamaptera æruginata*, Bolivia, *apicata*, p. 51, *nigrolineata*, Paraguay, *cacuminata*, Peru, p. 52, *subalbata*, Bolivia, p. 53, WARREN, t. c. **n. spp.**
- Hemerophila mailaria*, Congo, SWINHOE, p. 535, Tr. ent. Soc. London 1904; *H. brunnearia*, Korea, HERZ, p. 367, pl. i, fig. 5, Annuaire Mus. St. Petersb. ix; *H. alpinella*, p. 746, *kincaidiella*, p. 747, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii: **n. spp.**
- Hemicopsis n. g.* p. 525, *H. purpuraria n. sp.*, E. Africa, p. 526, SWINHOE, Tr. ent. Soc. London 1904.
- Hemigymnodes*, characters and position, WARREN, p. 17, Nov. Zool. xi.
- Hemioplisis ? alternata*, Peru, p. 5, *metallica*, Trinidad, p. 6, WARREN, t. c. **n. spp.**
- Hemithea sapoliaria*, Mombasa, SWINHOE, p. 547, Tr. ent. Soc. London 1904, **n. sp.**

- Hemixera* **n. g.** *Ennominae*, *H. orthosiodes* **n. sp.**, Peru, WARREN, p. 139, Nov. Zool. xi.
- Herbita* *amula*, *cervina*, Mexico, WARREN, p. 140, t. c. **n. spp.**
- Hetererannis* **n. g.** type *Boarmia obliquaria* Grote, WARREN, p. 106, t. c.
- Heterephyra* *pustulata*, Peru, WARREN, p. 37, t. c. **n. sp.**
- Heterorachis* *rubella*, Niger, WARREN, p. 465, t. c. **n. sp.**
- Heteroleuca* **n. g.** *Nephodiinae*, *H. albida* **n. sp.**, Peru, WARREN, p. 101, t. c.
- Heterolocha* *xerophilaria*, Ain-Dschidi, PÜNGELER, p. 295, pl. vi, fig. 13, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Heterusia* *amplificata*, Peru, *fractifascia*, *liturata*, Ecuador, p. 89, *ludisignata*, *subspurcata*, p. 90, *thyridata*, p. 91, Peru, WARREN, Nov. Zool. xi; *H. binotata* with var. *suffusa*, p. 536, Peru, *clarimargo*, Costa Rica, *tessellata*, Peru, p. 537, WARREN, t. c.; *H. picata*, Bolivia, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Heterusia*, see also *Bombyces*.
- Himeromima* **n. g.** for *Mecoceras aulis* Druce, WARREN, p. 141, Nov. Zool. xi.
- Hirasa*? *denticulata*, Natal, WARREN, p. 473, t. c. **n. sp.**
- Homospora* **n. g.** near *Arrhodia*, p. 229, *H. procrita* **n. sp.**, Townsville, p. 230, TURNER, Tr. R. Soc. S. Austral. xxviii.
- Hyalopola* **n. n.** for *Hyalospila* Warr., WARREN, p. 101, Nov. Zool. xi.
- Hyalorrhoe* **n. g.** near *Prohydata*, *H. stigmatica* **n. sp.**, Costa Rica, WARREN, p. 21, Nov. Zool. xi.
- Hydata* *diaphana*, Peru, WARREN, p. 86, t. c. **n. sp.**
- Hydatocapnia* *subapicaria*, Niger, WARREN, p. 469, t. c. **n. sp.**
- Hydatoscia* **n. g.** type *Trygodes ategna* Druce, WARREN, p. 101, t. c.
- Hydriomena*, cf. *Rhodomena*.
- Hydriomena* *psarodes*, p. 253, *callima*, p. 257, *trissophrica*, p. 259, *crocota*, p. 261, *plagiocausta*, p. 263, *arachnitis*, p. 264, *plesia*, *loxocyma*, p. 265, Australia, TURNER, P. Soc. Victoria xvi; *H. ochreiplaga*, Colombia, WARREN, p. 53, Nov. Zool. xi; *H. scalata*, Oregon, WARREN, p. 519, t. c. : **n. spp.**
- Hygrochroma* *flexilinea*, p. 141, *subusta*, p. 142, Peru, WARREN, t. c.; *H. catenulata*, Bolivia, WARREN, p. 571, t. c. : **n. spp.**
- Hylemera* *auridisca*, p. 471, *capitifera*, p. 472, Niger, WARREN, t. c. **n. spp.**
- Hymenomima* *carneata*, *rufata*, p. 109, *schisticolor*, p. 110, Peru, WARREN, t. c. **n. spp.**
- Hyperitis* *trianguliferata*, p. 64, *H. amicaria*, p. 65, life-histories, DYAR, Psyche xi.
- Hyperythra* *rubricata* not a var. of *lutea*, ab. *n. decolor*, WARREN, p. 491, Nov. Zool. xi.
- Hyphedyle* *subornata*, Peru, WARREN, p. 499, t. c. **n. sp.**
- Hyphenophora* *amonia*, Uganda, SWINHOE, p. 498, Tr. ent. Soc. London 1904, **n. sp.**
- Hypochrosis* *ationaria*, Madagascar, SWINHOE, p. 522, t. c. **n. sp.**
- Hypolepis* **n. g.** near *Psaliodes*, *H. albistriga*, p. 54, *castanea*, *conspersata*, *plumbescens*, p. 55, *prunicolor*, *sordida*, p. 56, *strigosa*, p. 57, **n. spp.**, Peru, WARREN, Nov. Zool. xi; *H. brunneata*, *completa*, Peru, WARREN, p. 520, t. c. **n. spp.**
- Hypometalla* **n. g.** for *Acidalia mimetaria* Feld., WARREN, p. 563, t. c.
- Hyposidra* *smithi*, Congo, WARREN, p. 480, t. c. **n. sp.**
- Ira* *dislocata*, p. 142, *funerea*, *igniplaga*, p. 143, *ochriplaga*, *opalizaas*, p. 144, Peru, *somnolenta*, Colombia, *viridirufa*, Peru, p. 145, WARREN, t. c. **n. spp.**
- Iridopsis* *schistacea* ab. *n. radiata*, WARREN, p. 554, t. c.
- I. alternata*, p. 553, *striata*, p. 554, WARREN, t. c.; *I. candidata*, Bolivia, p. 110, *schistacea*, Peru, p. 111, WARREN, t. c.; *I. commixtata*,

- Tucuman, DOGNIN, p. 121, Ann. Soc. ent. Belgique xlviii; *I. rectura*, p. 363, *obliquata*, p. 364, Argentina, DOGNIN, t. c. : **n. spp.**
- Ischnopteris abnormipalpis*, p. 116, *albiguttata*, *fidelis*, p. 117, *oppositata*, p. 118, Peru, WARREN, Nov. Zool. xi; *I. albipennis*, p. 556, *discolor*, *festiva*, p. 557, *prælutata* with ab. n. *albirupta*, *viridifascia*, p. 558, Peru, WARREN, t. c. : **n. spp.**
- Ischnopteryx viriosa*, Peru, DOGNIN, p. 365, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Isochromodes atristicta* with ab. *dissipata*, p. 146, *auxilians* with var. *denotata*, p. 147, *crassa*, *fraterna*, p. 148, *grisea*, *latifascia*, p. 149, *pallidifimbria*, *palumbata*, p. 150, *terminata*, *vestigata*, p. 151, Peru, WARREN, Nov. Zool. xi; *I. duplicata*, *maculosata*, p. 572, *miniata*, p. 573, Peru, WARREN, t. c. : **n. spp.**
- Isodiscodes n. g. Hydriomeninæ*, *I. polycyma* **n. sp.**, Peru, WARREN, p. 521, t. c.
- Josia erectistria*, *longistria*, Ecuador, p. 17, *vulturata*, Peru, p. 18, WARREN, t. c. **n. spp.**
- Lampropteryx trilineata*, Colorado, WARREN, p. 57, t. c. **n. sp.**
- Larentiidae*, review of variation in, PROUT, pp. 151–156, Entomologist 1904.
- Larentia multistrigaria* varr., TUTT, pp. 303–305, Ent. Rec. xvi; *L. corydalara* var. n. *bogumilaria*, REBEL, p. 267, pl. v, figg. 16, 17, Ann. Hofmus. Wien xix; *L. badiata* var. n. *alpestris*, NEUBURGER, p. 20, Soc. ent. xix; *L. corylata* var. n. *albida*, HERZ, p. 17, Ofv. Finska Forh. xlv, No. 15; *L. infidaria*, pl. iii, figg. 33–35, p. 68, *letaria*, fig. 36, *larentiaria*, p. 71, fig. 37, *cyanata*, figg. 38, 39, OBERTHÜR, Études comp. i.
- L. expiata*, Aksu, p. 292, pl. vi, fig. 9, *defricata*, Nikko, p. 293, fig. 10, *occata*, fig. 11, *querulata*, fig. 12, p. 294, Centr. Asia, PÜNGELER, Deutsche ent. Zeitschr. Iris xvi, **n. spp.**
- Lasiops ? puechi*, Peru, DOGNIN, p. 368, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Leucoctenorrhoe n. g.* near *Amaurinia*, p. 526, *L. quadrilinea* **n. sp.**, Peru, p. 527, WARREN, Nov. Zool. xi.
- Leucolithodes n. g.* for *Bryoptera pantherata* Feld., WARREN, p. 582, t. c.
- Leucothoa persordida*, Bolivia, WARREN, p. 6, t. c. **n. sp.**
- Leucoreus n. g. Enochrominæ*, p. 12, *L. rhodosticta* **n. sp.**, Peru, p. 13, WARREN, t. c.
- Leuculopsis bilineata*, Peru, WARREN, p. 101, t. c.; *L. approximans*, Peru, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Lignyopectera thaumastaria*, p. 278, pl. v, fig. 18, REBEL, Ann. Hofmus. Wien xix.
- Ligonia bottgeri*, Peru, WARREN, p. 513, Nov. Zool. xi, **n. sp.**
- Lipomelia scintillans*, Brit. Guiana, p. 37, *subfuscata*, Bolivia, p. 38, WARREN, t. c. **n. spp.**
- Lissochlora flavilimes*, Peru, WARREN, p. 21, t. c.; *L. punctata*, St. Lucia, WARREN, p. 504, t. c. : **n. spp.**
- Lomographa acutipennis*, *albifrons*, S. America, WARREN, p. 92, t. c. **n. spp.**
- Lophochorista n. g.* near *Hydata*, for *Racheospila calliope* Druce, WARREN, p. 22, t. c.
- Lophopygia n. g.* near *Lophotosoma*, *L. griseata* **n. sp.**, Peru, WARREN, p. 495, t. c.
- Lophotosoma n. g.* near *Epiplema*, *L. ustanalisis* **n. sp.**, Peru, WARREN, p. 7, t. c.
- Loxapicia n. g.* for part of *Apicia*, *L. humerata*, Bolivia, *straminea*, Ecuador, **n. spp.**, WARREN, p. 152, t. c.
- Loxaspilates bluethgeni*, Nikko, PÜNGELER, p. 299, pl. vi, fig. 19, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Lozogamma carneata*, *erubescens*, *sinuata*, Colorado, WARREN, p. 561, Nov. Zool. xi, **n. spp.**

- Luxiaria pudens*, Niger, SWINHOE, p. 504, Tr. ent. Soc. London 1904, **n. sp.**
Lycauges dapharia, p. 552, *sevandaria*, *erinaria*, *commaria*, p. 553, Trop. Africa, SWINHOE, t. c. **n. spp.**
Lygris prunata var. n. *digna*, THIERRY-MIEG, p. 141, Naturaliste 1904.
Macaria minorata var. n. *incolorata*, DYAR, p. 906, P. U. S. Mus. xxvii.
M. bifilaria, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv, **n. sp.**
Malacodea regelaria at St. Petersburg, characters, KUSNEZOV, pp. 40-43, cuts, Rev. Russe Ent. iv, & BLOECKER, p. 210, t. c.
Marmopteryx elongata, Peru, THIERRY-MIEG, p. 141, Naturaliste 1904, **n. sp.**
Mecoceras, cf. *Himeromima*.
Melanchroia geometroides, larva, DYAR, p. 77, P. ent. Soc. Washington vi.
Melanippe rivata, *fluctuata* varr., WOODBRIDGE, p. 9, cuts, Entomologist 1904.
Melanoscia n. g. near *Iridopsis*, p. 111, *M. albimacula*, *felina*, p. 112, *occlusa*, p. 113, **n. spp.**, Peru, WARREN, Nov. Zool. xi.
Melanolophia canadaria var. n. *subgenericata*, DYAR, p. 910, P. U. S. Mus. xxvii.
Melinodes contacta, Bolivia, WARREN, p. 153, Nov. Zool. xi; *M. subapicata*, Peru, p. 573, WARREN, t. c. : **n. spp.**
Melochlora intermedia, Peru, WARREN, p. 22, t. c. : *M. albiceps*, Peru, WARREN, p. 504, t. c. : **n. spp.**
Merocausta purpuraria, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv, **n. sp.**
Mesedra n. g. including *Apicia venusta* Dogn., *M. confinis*, p. 153, *juvenis*, *munda*, p. 154, *subsequea*, *violacea*, p. 155, **n. spp.**, WARREN, Nov. Zool. xi.
Mesoleuca simulata var. n. *otisi*, DYAR, p. 898, P. U. S. Mus. xxvii.
Metallochloa circumscripta, Solomon islds., WARREN, p. 486, Nov. Zool. xi, **n. sp.**
Metanema quercivoria and *Endropia tetrinaria* queried as one, TAYLOR, p. 134, Canad. Ent. xxxvi; *M. quercivoraria* and *tetrinaria* are one, PEARSALL, p. 162, Canad. Ent. xxxvi; *M. fuliginosa* to *Mimogonodes*, WARREN, p. 576, Nov. Zool. xi.
M. fuliginosa, Peru, WARREN, p. 156, Nov. Zool. xi, **n. sp.**
Miantonota decorata, Huatuxco, WARREN, p. 22, Nov. Zool. xi; *M. nigri-squama*, Peru, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii : **n. spp.**
Microdes diplodonta, Tasmania, TURNER, p. 239, P. Soc. Victoria xvi, **n. sp.**
Microgonia affinis ♀, *siccifolia* ♂, p. 574, *umbrosa* var. n. *interclarata*, p. 575, WARREN, Nov. Zool. xi.
M. distans and ab. *confusa*, p. 156, Bolivia, *guenei*, p. 157, Mexico, *siccifolia*, *subdecorata* with ab. *prunicolor*, p. 158, Peru, *subdentilinea*, Ecuador, *subductaria*, R. Cachabi, p. 159, *versilinea*, Bolivia, p. 169, WARREN, t. c.; *M. particolor*, Paramaribo, p. 574, *subumbrata*, Peru, p. 575, WARREN, t. c.; *M. diluta*, Paraguay, DOGNIN, p. 366, Ann. Soc. ent. Belgique xlviii : **n. spp.**
Microxydia? colorata, p. 160, *M. fulvicollis*, p. 161, Peru, WARREN, Nov. Zool. xi; *M. rufijimbriata*, p. 575, *strigosa*, p. 576, Peru, WARREN, t. c. : **n. spp.**
Milionia aroensis, pl. iii, fig. 41, *ventralis*, fig. 38, *parva*, fig. 30, *diva*, figg. 39, 40, New Guinea, ROTHSCHILD, p. 321, Nov. Zool. xi, **n. spp.**
Milocera n. g. near *Psilocladia*, *M. horaria n. sp.*, Madagascar, SWINHOE, p. 522, Tr. ent. Soc. London 1904.
Mimandria insularis, Madagascar, SWINHOE, p. 541, t. c. **n. sp.**
Mimoprora n. g. near *Isochromodes*, *M. rubra n. sp.*, Peru, WARREN, p. 161, Nov. Zool. xi.
Mimosema flexa, *rufa*, Peru, WARREN, p. 162, t. c. **n. spp.**
Micopsis leodorata Guen. (as *Cirsodes*) = (*Laudosia typtaria* Feld.), WARREN, p. 576, t. c.

- M. bella*, Peru, WARREN, p. 162, t. c.; *M. pulverata*, Peru, WARREN, p. 576, t. c. : **n. sp.**
- Monroa* **n. g.** for *Cymatophora*, *quinquelinearia* Pack., WARREN, p. 555, t. c.
- Morphomima* **n. g.** near *Celura*, p. 7, *M. fulvitacta* **n. sp.**, Colombia, p. 8, WARREN, t. c.
- Nearcha prosedra*, p. 226, *nephocrossa*, p. 227, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Nelo versicolor*, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904, **n. sp.**
- Nematocampa completa*, Ecuador, WARREN, p. 163, Nov. Zool. xi; *N. ? confusa*, *N. cuprina*, Peru, WARREN, p. 577, t. c. : **n. spp.**
- Nemoria afflictaria*, Sierra Leone, SWINHOE, p. 549, Tr. ent. Soc. London 1904, **n. sp.**
- Neobapta* **n. g.** *Deiliniinæ*, p. 92, *N. indecora* **n. sp.**, Demarara, p. 93, WARREN, Nov. Zool. xi.
- Neocrasis heterograpta*, Peru, WARREN, p. 23, t. c. **n. sp.**
- Neodirades* **n. g.** *N. spurcata* **n. sp.**, Peru, WARREN, p. 8, t. c.
- Neodezia* **n. g.** for *Odezia albovittata*, WARREN, p. 541, t. c.
- Neofidonia* **n. g.** *Ascotince*, *N. nigristigma* **n. sp.**, Peru, WARREN, p. 113, t. c.; *N. olivescens*, Ecuador, WARREN, p. 555, t. c. : **n. sp.**
- Neonemoria* **n. g.** near *Neocrasis*, p. 23, *N. plana* **n. sp.**, Bolivia, p. 24, WARREN, t. c.
- Neoplema* **n. g.** near *Epiplema*, *N. candidata* **n. sp.**, Peru, WARREN, p. 496, t. c.
- Neopolita* **n. g.** *Deiliniinæ*, *N. bisecta* **n. sp.**, Angola, WARREN, p. 470, t. c.
- Neotaxia* **n. g.** p. 365, *N. plana* **n. sp.**, Tucuman, p. 366, DOGNIN, Ann. Soc. ent. Belgique xlviii.
- Nipteria apicilineata* Dogn. to *Heteroleuca*, WARREN, p. 545, Nov. Zool. xi.
- N. astychooides*, *flaviplaga*, *febilis*, p. 102, *oblitaria*, Peru, *subocellata*, Bolivia, p. 103, *transducta*, *turpis*, p. 104, Peru, WARREN, Nov. Zool. xi.; *N. basiplaga*, *dispansa*, p. 546, *exclamationis*, *nigrisignata*, *occulta*, p. 547, *pallida*, *partita*, p. 548, *sibylla*, *trisepta*, p. 549, *unilinea vestigiata*, p. 550, Peru, WARREN, t. c.; *N. rotundata*, Ecuador, DOGNIN, p. 362, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Nyssia lapponaria*, COCKAYNE, pl. vi, pp. 149, 150, Entomologist 1904; *N. lapponaria*, variation, COCKAYNE, p. 249, cuts, t. c.
- Ochyria thorenaria*, Madagascar, SWINHOE, p. 570, Tr. ent. Soc. London 1904, **n. sp.**
- Odontopera integraria* Guen. to *Colotois*, WARREN, p. 479, Nov. Zool. xi.
- Odontoptila marginata*, Bolivia, WARREN, p. 38, t. c. **n. sp.**
- Edicentra gerydaria*, Ashanti, SWINHOE, p. 530, Tr. ent. Soc. London 1904, **n. sp.**
- Enone xenopis* cf. *Diceratucha*.
- Enoptila costata*, *filata*, *leprosata*, p. 120, *prunicolor*, p. 121, Peru, WARREN, Nov. Zool. xi; *Æ. ignea*, Peru, WARREN, p. 559, t. c. : **n. spp.**
- Oligopleura biplagiata*, Peru, WARREN, p. 58, t. c. **n. sp.**
- Oospila atroviridis*, Peru, WARREN, p. 24, t. c.; *O. restricta*, p. 504, *rufiplaga*, p. 505, Peru, WARREN, t. c. : **n. spp.**
- Ophthalmodes albata*, Sumatra, WARREN, p. 490, t. c. **n. sp.**
- Ophthalmophora contrariata*, p. 94, *lineata*, *orion*, p. 95, *transversata*, p. 96, Peru, WARREN, t. c. **n. spp.**
- Opisthoxia casta*, Mexico, *laticlava*, Peru, p. 542, *vigilans*, Ecuador, p. 543, WARREN, t. c. **n. spp.**
- Oreonoma* **n. g.** near *Heterusia*, *O. submarmorata* **n. sp.**, Peru, WARREN, p. 538, t. c.
- Orsonoba zapluta*, *luteola*, p. 234, *leucoprepes*, p. 235, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**

- Ortholitha bipunctaria* ab. n. *grisescens*, NEUBURGER, Soc. ent. xix, p. 44 ;
O. coarctata, early stages, habits, BRANTS, pp. 63-68, Tijdschr. ent. xlvii.
- Paracomistis subtractata* ♀, WARREN, p. 163, Nov. Zool. xi.
- P. plumosa*, Peru, WARREN, p. 578, t. c. **n. sp.**
- Paracomucha* **n. g.** near *Entephria*, for *Cidaria chalybearia* Moore, WARREN, p. 488, t. c.
- Paradoxodes* **n. g.** near *Pseustoplaca*, *P. subdecora* **n. sp.**, Peru, WARREN, p. 164, t. c.
- Paraplodes* **n. g.** near *Aplodes*, p. 24, *P. aurata* **n. sp.**, Ecuador, p. 25, WARREN, t. c.
- Paromala* **n. g.** near *Perizoma*, *P. elongata* **n. sp.**, Ecuador, p. 58, WARREN, t. c.
- Parourapteryx* **n. g.** for *Metrocampa sulphuraria* Maassen, THIERRY-MIEG, p. 183, Naturaliste 1904.
- Pergama semiusta* var.? *latifascia*, WARREN, p. 165, Nov. Zool. xi.
- P. plenilunata*, Peru, WARREN, l. c. **n. sp.**
- Peribolodes* **n. g.** *Fidoniinae*, *P. bicolorata* **n. sp.**, Brit. Guiana, WARREN, p. 126, t. c.
- Perigramma nigricosta*, p. 104, *semipleata*, p. 105, Bolivia, WARREN, t. c. **n. spp.**
- Perixera sublutina*, W. Africa, SWINHOE, p. 560, Tr. ent. Soc. London 1904 ; *P. impudens*, Galápagos, *P. ? longidiscata*, Townsville, WARREN, p. 487, Nov. Zool. xi : **n. spp.**
- Perizoma aspersa*, Ecuador, DOGNIN, p. 359, Ann. Soc. ent. Belgique xlviii ; *P. amplata, aureoviridis*, p. 59, *mirifica*, p. 60, Peru, WARREN, Nov. Zool. xi : **n. spp.**
- Pero olivacea*, Tucuman, WARREN, p. 578, t. c. **n. sp.**
- Perusia complicata*, p. 165, *graphica, superstes*, p. 166, Peru, WARREN, t. c. ; *P. subsordida*, Peru, WARREN, p. 579, t. c. : **n. spp.**
- Petelia anagogaria, binigrata*, p. 122, *purpurea*, p. 123, Peru, WARREN, t. c. ; *P. glabra*, Niger, WARREN, p. 476, t. c. : **n. spp.**
- Petrodava marginata*, Abyssinia, SWINHOE, p. 503, Tr. ent. Soc. London 1904, **n. sp.**
- Phæochlæna bialbifera*, Ecuador, WARREN, p. 18, Nov. Zool. xi, **n. sp.**
- Phellinodes leucophasiata*, Peru, THIERRY-MIEG, p. 182, Naturaliste 1904 ; *P. interrupta, obstructa, uniformis*, Bolivia, WARREN, p. 14, Nov. Zool. xi ; *P. absentimacula*, Ecuador, *albifascia*, Peru, WARREN, p. 499, t. c. : **n. spp.**
- Phlebosphales* **n. g.** near *Anticlea*, p. 60, *P. engelkei*, Santa Marta, **n. sp.**, p. 61, WARREN, t. c.
- Phorodesma triangularia*, Madagascar, SWINHOE, p. 551, Tr. ent. Soc. London 1904, **n. sp.**
- Phrygonis modesta*, Minas Geraës, WARREN, p. 91, Nov. Zool. xi ; *P. argyrosticta*, Bahamas, HAMPSON, p. 176, Ann. Nat. Hist. xiv : **n. spp.**
- Phyllodonta songaria*=(*semicava* Warr.) var. n. *obscura*, DOGNIN, p. 366, Ann. Soc. ent. Belgique xlviii.
- P. carneata*, p. 166, *puritana*, p. 167, *semicava, vivida*, p. 168, Peru, WARREN, Nov. Zool. xi ; *P. pseudonyma*, Peru, WARREN, p. 579, t. c. : **n. spp.**
- Pigia semicostata*, Peru, WARREN, p. 39, t. c. **n. sp.**
- Pisoraca sanguinata*, Durban, WARREN, p. 467, t. c. **n. sp.**
- Plerocymia multilinearia*, E. Africa, SWINHOE, p. 567, Tr. ent. Soc. London 1904, **n. sp.**
- Pleurotopha* **n. g.** near *Selidosema*, *P. nebridota* **n. sp.**, Brisbane, TURNER, p. 233, Tr. R. Soc. S. Austral. xxviii.
- Pæcilochlora* **n. g.** *Geometrinae*, p. 505, *P. minor* **n. sp.**, Peru, p. 506, and *Neocrasis heterograptæ* Warr., WARREN, Nov. Zool. xi.

- Polla quadrilineata* to *Sphacelodes*, WARREN, p. 172, t. c.
- Polyplocia flavicornis haverkampfi*, p. 187, pl. i, HAVERKAMPF, Ann. Soc. ent. Belgique xlviii.
- Polypoetes picaria*, Peru, WARREN, p. 18, Nov. Zool. xi; *P. fuliginosa*, Bolivia, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Porona fidoniata*, Peru, WARREN, p. 560, Nov. Zool. xi, **n. sp.**
- Prasinocyma ampla, pictifimbria*, Angola, WARREN, p. 465, t. c. **n. spp.**
- Prasinocyma pulchra*, W. Africa, p. 544, *asyllaria*, Madagascar, p. 545, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Problepsis flavistigma*, Trop. Africa, SWINHÖE, p. 564, t. c. **n. sp.**
- Probolosceles punctaria*, Madagascar, SWINHÖE, p. 550, t. c. **n. sp.**
- Procypha sillaria*, p. 514, *informis*, p. 515, W. Africa, SWINHÖE, t. c. **n. spp.**
- Prorocrania n. g.*, p. 225, *argyritis n. sp.*, W. Australia, p. 226, TURNER, Tr. R. Soc. S. Austral. xxviii.
- Prostoma n. g. Scotopteryginae, P. fragilis n. sp.*, WARREN, p. 123, Nov. Zool. xi.
- Provola n. g.* for *Aletis postica* Walker, SWINHÖE, p. 538, Tr. ent. Soc. London 1904.
- Psaliodes serratilinea* to *Hypolepis*, WARREN, p. 521, Nov. Zool. xi.
- P. acutangula*, p. 61, *albidulata, aurativena*, p. 62, *citrinata, clathrata*, p. 63, *fractilinea*, p. 64, *ignivenata, inferna*, p. 65, *miniata* (with varr. *fuscata, pallida*), *nevilinea*, p. 66, *nititans, ossicolor*, p. 67, *pervasata, picta*, p. 68, Peru, *planiplaga*, Costa Rica, *semivasa*, p. 69, *serratilinea, siennata*, p. 70, Peru, *subfulvescens*, Ecuador, *trilunata*, Bolivia, p. 71, *tripartita*, p. 72, *vinosata*, p. 73, Peru, WARREN, t. c.; *P. analiplaga, lilacina*, p. 522, *nodosa, vulpina*, p. 523, Peru, WARREN, t. c.; *P. luticlara*, Peru, DOGNIN, p. 120, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Psamathia impunctata*, Peru, WARREN, p. 496, Nov. Zool. xi, **n. sp.**
- Pseudapicia muscivaria*, p. 169, *sororcula*, p. 170, Peru, WARREN, t. c. **n. spp.**
- Pseudasellodes n. g.* near *Asellodes*, p. 39, *P. constellata n. sp.*, Peru, p. 40, WARREN, t. c.
- Pseudocrociniis n. g.* type *Crociniis plana* Butl., SWINHÖE, p. 518, Tr. ent. Soc. London 1904.
- Pseudosterrha lucidaria*, Trop. Africa, SWINHÖE, p. 566, t. c. **n. sp.**
- Pseudoteryna bryophanes*, p. 222, *myriosticta*, p. 223, Queensland, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Psilocerea vestitaria*, Madagascar, *umbrosaria*, Uganda, p. 520, *ancaria, dysonaria*, Madagascar, p. 521, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Psodopsis n. g. P. incommoda n. sp.*, Bolivia, WARREN, p. 560, Nov. Zool. xi.
- Psodos alticolaria faucium*, p. 66, fig. 44, OBERTHÜR, Études comp. i.
- Pterocypha abbreviata*, Paraguay, WARREN, p. 73, Nov. Zool. xi, **n. sp.**
- Ptochophyle subumbata*, Niger, WARREN, p. 467, t. c. **n. sp.**
- Ptychopoda lalasaria, fylloidaria*, Trop. Africa, SWINHÖE, p. 559, Tr. ent. Soc. London 1904; *P. circumsticta, torrida*, Angola, *minimaria*, Mombasa, WARREN, p. 468, Nov. Zool. xi; *P. curtaria*, Jamaica, *griseocostata*, Ecuador, p. 40, *inanis*, Jamaica, *lignicolor*, Colombia, *nepticulata*, Venezuela, p. 42, *nigricosta*, Peru, p. 42, WARREN, t. c.; *P. interalbulata*, N. W. Australia, p. 487, *muricolor*, Tonkin, p. 488, WARREN, t. c.; *P. tæniolata*, Peru, WARREN, p. 513, t. c. : **n. spp.**
- Pycnoneura turpis*, Bolivia, WARREN, p. 13, t. c.; *P. convergens*, Inambari, WARREN, p. 493, t. c. : **n. spp.**
- Pyrinia formosa*, Peru, p. 170, *junctaria*, Bolivia, p. 171, WARREN, t. c.; *P. derasata*, Peru, WARREN, p. 580, t. c. : **n. spp.**
- Racheospila dependens*, p. 25, *molliculata, promontoria*, p. 26, Peru, WARREN, t. c.; *R. conflua*, Peru, WARREN, p. 506, t. c. : **n. spp.**

- Rambara syllaria*, p. 575, *thearia*, p. 576, W. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Rhinura* **n. g.** for *Plemyriopsis variegata* Warr., WARREN, p. 74, Nov. Zool. xi.
- Rhodochlora albigmacula*, St. Lucia, WARREN, p. 506, t. c. **n. sp.**
- Rhodomene* **n. g.** for part of *Hydriomena*, *R. lichenosa*, p. 74, *roseoviridis*, p. 75, **n. spp.**, Peru, WARREN, t. c.
- Rhodophthitus castus*, Angola, WARREN, p. 471, t. c. **n. sp.**
- Rhopalista dismutata*, Tucuman, WARREN, p. 75, t. c. **n. sp.**
- Rhopalodes perfusa*, Peru, WARREN, p. 527, t. c. **n. sp.**
- Sabulodes arcasaria*, life-history, SEIFERT, pp. 103–105, Canad. Ent. xxxvi.
- Saccoploca* **n. g.**, p. 8, *S. consimilis*, *excisa* **n. spp.**, Peru, p. 9, WARREN, Nov. Zool. xi; *S. ? divergens*, p. 496, *S. sordida*, p. 497, Peru, WARREN, t. c. : **n. spp.**
- Sangala aenea*, *regia*, Peru, WARREN, p. 98, t. c. **n. spp.**
- Sangalopsis curvifera*, Ecuador, *crecens*, *ficifera*, Peru, p. 99, *flaviplaga*, *signigera*, Bolivia, *luteiplaga*, Ecuador, *fulvimedia*, Peru, p. 100, WARREN, t. c.; *S. velutina*, Peru, WARREN, p. 544, t. c. : **n. spp.**
- Sarracena brevilinea*, Peru, WARREN, p. 524, t. c. **n. sp.**
- Scea semifulva*, Ecuador, WARREN, p. 19, t. c. **n. sp.**
- Sciagraphia gilletteata*, Colorado, DYAR, p. 105, P. ent. Soc. Washington vi, **n. sp.**
- Scioglyptis emmelodes*, Queensland, TURNER, p. 232, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Scordylia emporias*, Brisbane, TURNER, p. 245, P. Soc. Victoria xvi; *S. pacifica*, Bolivia, *amica*, Peru, THIERRY-MIEG, p. 183, Naturaliste 1904 : **n. spp.**
- Scotocyma* **n. g.** for *Scotosia albinotata* Walk., TURNER, p. 245, P. Soc. Victoria xvi.
- Scotorythra dissotis*, p. 351, *metacrossa*, p. 352, *paratactis*, p. 353, *leptias*, p. 354, Hawaiian islands, MEYRICK, Fauna Hawaiiensis iii, **n. spp.**
- Selidosema humarium* var. *n. emasculatum*, DYAR, p. 910, P. U. S. Mus. xxvii.
- S. combustaria*, Palestine, PÜNGELER, p. 298, pl. vi, fig. 18, Deutsche ent. Zeitschr. Iris xvi; *S. crassata*, Durban, *pinguis*, Angola, WARREN, p. 477, Nov. Zool. xi; *S. symmorpha*, *leucodesma*, Queensland, TURNER, p. 231, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Semaepus signifer*, Bolivia, WARREN, p. 42, Nov. Zool. xi; *S. carnearia*, p. 513, Peru, *incolorata*, Bolivia, p. 514, WARREN, t. c.; *S. micropsis*, Bahamas, HAMPSON, p. 179, Ann. Nat. Hist. xiv : **n. spp.**
- Semiothisa sherrata*, Congo, p. 505, *cararia*, p. 507, *tatturia*, *instructaria*, p. 508, *avidaria*, *arhoparia*, p. 509, *butaria*, p. 510, E. Africa, SWINHÖE, Tr. ent. Soc. London 1904; *S. natalensis*, Durban, WARREN, p. 479, Nov. Zool. xi; *S. indentata*, *intensata*, Peru, *nigricomma*, Guadalajara, WARREN, p. 127, t. c.; *S. formosa*, Peru, WARREN, p. 562, t. c. : **n. spp.**
- Sicya ennomaria*, Mexico, WARREN, p. 171, t. c. **n. sp.**
- Simopteryx obliterata*, Bolivia, WARREN, p. 172, t. c. **n. sp.**
- Sinoa nubilaria* var. *knapfferi*, HOYNINGEN-HUENE, p. 30, Berlin. ent. Zeitschr. xlix.
- Somatina accraria*, W. Africa, SWINHÖE, p. 565, Tr. ent. Soc. London 1904, **n. sp.**
- Spargania दौरa* Dr. (as *Epirrhoë*)=*bellipicta* Warr., WARREN, p. 76, Nov. Zool. xi.
- S. intensa*, p. 76, *rufifimbria*, *schistacea*, p. 77, *semipallida*, p. 78, Peru, WARREN, t. c. **n. spp.**
- Spilocraspeda* merged in *Isochromodes*, WARREN, p. 146, t. c.
- Spododes basipunctata*, Mexico, WARREN, p. 580, t. c. **n. sp.**
- Stamnodes mirifica*, Peru, THIERRY-MIEG, p. 140, Naturaliste 1904, **n. sp.**

- Stegania minutissima*, E. Africa, p. 500, *rubida*, Madagascar, p. 501, SWINHOE, Tr. ent. Soc. London 1904, **n. spp.**
- Stenalcidia latimedia* ab. n. *circumfumata*, WARREN, p. 556, Nov. Zool. xi.
- S. fumibrunnea, guttata*, Bolivia, p. 114, *latimedia*, Peru, p. 115, WARREN, t. c. ; *S. invenusta*, Tucuman, DOGNIN, p. 121, Ann. Soc. ent. Belgique xlviii : **n. spp.**
- Stenoplastis albifrons*, Bolivia, p. 501, *semimaculata*, Peru, p. 502, WARREN, Nov. Zool. xi, **n. spp.**
- Stenoplastis spumata*, Bolivia, WARREN, p. 19, Nov. Zool. xi, **n. sp.**
- Sterrhia hispidata*, Angola, WARREN, p. 469, t. c. **n. sp.**
- Stilbia failleæ*, fig. 22, *philopalis*, fig. 23, *calberlæ*, fig. 24, PÜNGELER, pl. vi, p. 300, Deutsche ent. Zeitschr. Iris xvi.
- Synelys impunctata*, Colorado, WARREN, p. 514, t. c. **n. sp.**
- Syngria candidata*, Peru, WARREN, p. 497, t. c. **n. sp.**
- Synneuria ditissima*, Peru, THIERRY-MIEG, p. 141, Naturaliste 1904, **n. sp.**
- Syrtodes* limited and redescribed, WARREN, p. 124, Nov. Zool. xi.
- Systatica* **n. g.** for *Monoctenia xanthastis* Low., TURNER, p. 229, Tr. R. Soc. S. Austral. xxviii.
- Tachyphyle subaurata*, Peru, WARREN, p. 27, Nov. Zool. xi ; *T. æretincta*, Peru, WARREN, p. 507, t. c. : **n. spp.**
- Tallegda montanata* var. n. *magnoliatoidata*, DYAR, p. 889, P. U. S. Mus. xxvii.
- Tanaorhinus humidaria*, Madagascar, SWINHOE, p. 542, Tr. ent. Soc. London 1904, **n. sp.**
- Taxeotis acrothecta*, p. 223, *orphanina, adelpha*, p. 224, *epigæa*, p. 225, Australia, TURNER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Tephрина presbitaria*, p. 511, *olindaria*, p. 512, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1905 ; *T. disparata*, Colorado, WARREN, p. 562, Nov. Zool. xi : **n. spp.**
- Tephriopsis fragilis*, Peru, WARREN, p. 562, t. c. **n. sp.**
- Tephrocystia breviculata*, natural history, CHRÉTIEN, pp. 5-7, Naturaliste 1904.
- T. tomillata*, Segovia, CHRÉTIEN, p. 133, Bull. Soc. ent. France 1904 ; *T. orbaria*, p. 571, *mendosaria, perculsaria*, p. 572, *lugubriaria*, p. 573, Trop. Africa, SWINHOE, Tr. ent. Soc. London 1904 ; *T. niphadophilata, cootenaiata*, p. 890, *casloata, columbiata, bifasciata*, p. 891, *subfoveata*, p. 892, British Columbia, DYAR, P. U. S. Mus. xxvii ; *T. curvifascia*, Jamaica, *costivallata, rubellicincta*, p. 87, *trigenuata*, Peru, *spurcata*, Chile, p. 88, WARREN, Nov. Zool. xi ; *T. brunneicosta, casta*, p. 530, *cupreata, densicauda, erectinota*, p. 531, Peru, *magnipuncta*, Bolivia, *nigrithorax*, p. 532, *pallidicosta*, p. 533, *seminigra, suffecta, triangulifera*, p. 534, Peru, WARREN, t. c. : **n. spp.**
- Tephronia? novella*, Ecuador, WARREN, p. 115, t. c. **n. sp.**
- Tetracis inquinata*, Peru, WARREN, p. 581, t. c. **n. sp.**
- Thalaina angulosa*, larva and pupa, GOUDIE, p. 111, Victorian Natural. xxi.
- Thalassodes nivestrata* (1903), pl. iii, fig. 36, ROTHSCHILD, Nov. Zool. xi.
- T. salutaria*, Uganda, SWINHOE, p. 544, Tr. ent. Soc. London 1904, **n. sp.**
- Thalera? turpisaria*, W. Africa, SWINHOE, p. 546, t. c. **n. sp.**
- Thamnonoma nubilata*, Colorado, WARREN, p. 563, Nov. Zool. xi, **n. sp.**
- Therina somniaria*, larva, DYAR, p. 76, P. ent. Soc. Washington vi.
- Thyatira dinawa*, pl. v, fig. 43, p. 381, *ekeikei*, pl. iv, fig. 31, p. 382, New Guinea, BETHUNE-BAKER, Nov. Zool. xi ; *T. godalma*, Mexico, SCHAUS, p. 152, T. Amer. ent. Soc. xxx : **n. spp.**
- Thysanocraspeda* **n. g.** *Epipleminæ*, p. 9, *T. geminipuncta, inornata, semicastanea*, p. 10, *squamiplaga*, p. 11, **n. spp.**, Peru, WARREN, Nov. Zool. xi.
- Thysanoctena* **n. g.** for *dormita* Schaus, WARREN, p. 535, t. c.

- Thysanopyga fulvifascia*, Ecuador, p. 124, *suffecta*, Bolivia, p. 125, WARREN, t. c. **n. spp.**
- Tithraustes aliena*, Bolivia, DOGNIN, p. 119, Ann. Soc. ent. Belgique xlviii; *T. subalbata*, Bolivia, DOGNIN, p. 358, t. c. : **n. spp.**
- Tmetomorpha* **n. g.** for *Ennomos bitias* Druce, WARREN, p. 173, Nov. Zool. xi.
- Tracheops bolteri* ♀, DYAR, p. 106, P. ent. Soc. Washington vi.
- Traminda variegata*, Trop. Africa, SWINHÖE, p. 562, Tr. ent. Soc. London 1904, **n. sp.**
- Trichoclystis* **n. g.** near *Tephroclystia*, *T. peregrina* **n. sp.**, Peru, WARREN, p. 535, Nov. Zool. xi.
- Trichosterrha* **n. g.** near *Sterrha*, *T. ? brunneofasciata*, *dentatilinea*, Venezuela, *T. olivata*, Peru, **n. spp.**, WARREN, p. 515, t. c.
- Trigonomelea* **n. g.** *Ascotinæ*, *T. semifusca* **n. sp.**, Durban, WARREN, p. 475, t. c.
- Triphosa ochricostata*, *uniplaga*, Peru, WARREN, p. 524, t. c. **n. sp.**
- Trotorhombia* **n. g.** for *Erosia metachromata* Walk., WARREN, p. 498, t. c.
- Uliura* **n. g.** near *Pæcilaicis*, *U. pallidimargo* **n. sp.**, Tonkin, WARREN, p. 491, t. c.
- Urocalpe* **n. g.** near *Plemyriopsis*, p. 78, *U. nigriplaga* **n. sp.**, Peru, p. 79, WARREN, t. c.
- Venilia pulcheraria*, Korea, HERZ, p. 362, pl. i, fig. 2, Annuaire Mus. St. Petersb. ix, **n. sp.**
- Xanthomima isabellina*, Isabel Isld., WARREN, p. 489, Nov. Zool. xi, **n. sp.**
- Xanthorhoe agelasta*, p. 272, *clascia*, p. 275, Australia, TURNER, P. Soc. Victoria xvi, **n. spp.**
- Xenostega sinna*, *tyana*, Old Calabar, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Zamacra diaphanaria*, Askhabad, PÜNGELER, p. 295, pl. vi, fig. 14, Deutsche ent. Zeitschr. Iris xvi, **n. sp.**
- Zamarada ilaria*, *rufilinearia*, p. 516, *ixiaria*, *phrontisaria*, p. 517, Trop. Africa, SWINHÖE, Tr. ent. Soc. London 1904, **n. spp.**
- Zeuctoneura subviridis*, Peru, WARREN, p. 43, Nov. Zool. xi, **n. sp.**
- Zeuctophebia tapinodes*, Queensland, TURNER, p. 228, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Zeuctostyla* **n. g.** near *Perigramma*, *Z. rubricollis* **n. sp.**, Peru, WARREN, p. 105, Nov. Zool. xi.

PYRALIDÆ, THYRIDIDÆ.

[Cf. DOGNIN (398), DYAR (424, 432, 434, 436, 438), HAMPSON (653), HOLE (696), JORDAN (771), MEYRICK (947, 948), PETRY (1039), REBEL (1122), SAUBER (1212), SCHAUS (1225), SWINHÖE (1361, 1364), TURNER (1410), VAN DEVENTER (1428), WARREN (1474-1477).]

Revision of Australian *Pyralidæ* and *Thyrididæ*, TURNER, P. Soc. Queensland xviii. The synonymy and taxonomical changes of this memoir are not dealt with below.

DYAR gives notes on the *Phycitinae* of the Hulst collection, for which reference must be made to P. ent. Soc. Washington vi, pp. 227-229.

Ambesa busckella, Maryland, DYAR, p. 108, P. ent. Soc. Washington vi, **n. sp.**

Ampycophora haploschema, Queensland, TURNER, p. 117, P. Soc. Queensland xviii, **n. sp.**

Anaclastus **n. g.** for *Crambus apicistrigellus* Meyr., TURNER, p. 164, t. c.

Anerastria eurysticha, Queensland, TURNER, p. 119, t. c. **n. sp.**

Anerastidia ebenopasta, Queensland, TURNER, p. 122, t. c. **n. sp.**

- Anisothrix grenadensis*, Grenada, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Arnatura tympanophora*, Queensland, TURNER, p. 193, P. Soc. Queensland xviii, **n. sp.**
- Asopia manihotalis*, early stages, VAN DEVENTER, p. 79, pl. ix, fig. 1, Tijdschr. Ent. xlv.
- Atascosa quadricolorella*, New Mexico, DYAR, p. 116, P. ent. Soc. Washington vi, **n. sp.**
- Azochis rufidiscalis*, Bahamas, HAMPSON, p. 186, Ann. Nat. Hist. xiv, **n. sp.**
- Banisia salmo*, Borneo, WARREN, p. 483, Nov. Zool. xi, **n. sp.**
- Bonchis magnalis*, Mexico, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Bostra disticha*, Queensland, TURNER, p. 190, P. Soc. Queensland xviii, **n. sp.**
- Bradina opacusalis*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Cabnia n. g. C. myronella n. sp.*, Washington, DYAR, p. 108, J. N. York Ent. Soc. xii.
- Cacotherapia n. g. for Aurora nigrocinereella* Hulst, DYAR, p. 160, P. ent. Soc. Washington vi.
- Caphys titana*, Mexico, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Catadupa viridiplaga*, Parana, SCHAUS, p. 177, t. c. **n. sp.**
- Caudellia n. g. near Unadilla, C. apyrella, albovitella n. spp.*, N. America, DYAR, p. 116, P. ent. Soc. Washington vi.
- Cecidipta abnormalis*, Bolivia, DOGNIN, p. 123, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Ceroprepes mniaropis*, Queensland, TURNER, p. 151, P. Soc. Queensland xviii, **n. sp.**
- Chilo oxyprora*, Victoria, TURNER, p. 167, t. c. **n. sp.**
- Chrysauge jonesalis*, Parana, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Corcya asthenitis*, Townsville, TURNER, p. 155, P. Soc. Queensland xviii, **n. sp.**
- Crambus lithargyrellus* var. *n. domaviellus*, pl. v, fig. 20, p. 304, REBEL, Ann. Hofmus. Wien xix.
- C. xerces*, Anklam, SAUBER, p. 108, Verh. Ver. Hamburg Unterh. xii; *C. plumbifimbrialis, murellus*, British Columbia, DYAR, p. 919, P. U. S. Mus. xxvii : **n. spp.**
- Cryptoblates plagiroleuca, adoceta*, Queensland, TURNER, p. 150, P. Soc. Queensland xviii, **n. spp.**
- Desmia microstictalis*, Bahamas, HAMPSON, p. 184, Ann. Nat. Hist. xiv, **n. sp.**
- Diptychophora stenura*, p. 168, *molydocrossa*, p. 169, *alypophanes, dialeuca*, p. 170, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Dysodia flammata*, Zomba, WARREN, p. 461, Nov. Zool. xi, **n. sp.**
- Ecletodes n. g. near Homæosoma*, p. 124, *E. psephenias n. sp.*, Brisbane, p. 125, TURNER, P. Soc. Queensland xviii.
- Endotricha chionocosma*, p. 182, *psammitis*, p. 183, *hemicausta*, p. 184, Australia, TURNER, t. c. **n. spp.**
- Ephesia cahiritella*, early stage, VAN DEVENTER, p. 80, pl. ix, fig. 2, Tijdschr. Ent. xlv.
- E. nonparilella*, Arizona, DYAR, p. 113, P. ent. Soc. Washington vi; *E. amarella*, British Columbia, DYAR, p. 921, P. U. S. Mus. xxvii : **n. spp.**
- Ephesiodes benjaminella*, British Columbia, DYAR, p. 922, t. c. **n. sp.**
- Epipaschia superantalis*, p. 249, *zelleri*, p. 250, early stages, DYAR, J. N. York Ent. Soc. xii.
- E. crypserythra*, Tasmania, TURNER, p. 198, P. Soc. Queensland xviii, **n. sp.**
- Eurhythmia n. g. for Platytes latifasciella* Hamps., TURNER, p. 168, t. c.

- Eurypta viridis*, Parana, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. sp.**
Eutrichocera n. g. Phycitinae for *paurolepidalis n. sp.*, Bahamas, HAMPSON, p. 182, Ann. Nat. Hist. xiv.
Euzophera gigantella=(*cinerella* Hulst), DYAR, p. 158, P. ent. Soc. Washington vi.
Euzopherodes leptocosma, Townsville, TURNER, p. 127, P. Soc. Queensland xviii; *E. megalopalidis*, Bahamas, HAMPSON, p. 181, Ann. Nat. Hist. xiv : **n. spp.**
Gephyra costinotata, Peru, *gulgula*, Parana, SCHAUS, p. 175, Tr. Amer. ent. Soc. xxx, **n. spp.**
Glyphodes intermedialis, Paraguay, DOGNIN, p. 129, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Herculia acerasta, Queensland, TURNER, p. 189, P. Soc. Queensland xviii, **n. sp.**
Heterobella n. g. near *Macalla*, p. 193, *H. triglochis n. sp.*, Queensland, p. 194, TURNER, t. c.
Heteromicta polioctola, Queensland, TURNER, p. 158, t. c. **n. sp.**
Homœosoma stenopsis, Victoria, *farinaria*, Tasmania, TURNER, p. 126, t. c.; *H. reliquellum*, New Hampshire; DYAR, p. 112, P. ent. Soc. Washington vi : **n. spp.**
Hymenia exodias, Molokai, MEYRICK, p. 150, Ent. Mag. xl, **n. sp.**
Hyperectis n. g., p. 356, near *Stenia, dioctias n. sp.*, Maui, p. 357, MEYRICK, Fauna Hawaiiensis iii.
Hyphantidium apodectum, seminivale, p. 129, *pamphæes*, p. 130, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
Hypolamprus tessellata, Sumatra, SWINHOE Ann. Nat. Hist. xiv, **n. sp.**
Hypolophota n. g. Gallerianæ, H. oödes, p. 155, *amydrastis*, p. 156, **n. spp.**, Queensland, TURNER, P. Soc. Queensland xviii.
Hypsotropa pleurosticha, p. 115, *icasmopis, rhodosticha*, p. 116, *zophopleura, acidrias*, p. 117, Australia, TURNER, t. c. **n. spp.**
Laetilia=(*Laosticha* Rag.), DYAR, p. 159, P. ent. Soc. Washington vi.
L. fiskeella, N. Carolina, DYAR, p. 221, t. c. **n. sp.**
Lepidomys sobria, Paraguay, DOGNIN, p. 126, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Leucinodes labefactalis, Borneo, SWINHOE, p. 158, Tr. ent. Soc. London 1904, **n. sp.**
Leucochroma neutralis, Ecuador, DOGNIN, p. 127, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Loxiorkiza n. g. for *Zeuzerodes cervinalis* Pag., WARREN, p. 494, Nov. Zool. xi.
Lygropia fusalis, Bahamas, HAMPSON, p. 186, Ann. Nat. Hist. xiv, **n. sp.**
Macalla zophera, p. 196, *ebenina*, p. 197, Queensland, TURNER, P. Soc. Queensland xviii; *M. admotalis*, p. 122, *albulatalis*, p. 123, S. America, DOGNIN, Ann. Soc. ent. Belgique xlvi : **n. spp.**
Margaronia amicalis, E. Africa, *cleonadalis*, Borneo, SWINHOE, p. 157, Tr. ent. Soc. London 1904, **n. spp.**
Megasis caudellella, piperella, N. America, DYAR, p. 110, P. ent. Soc. Washington vi, **n. spp.**
Meroptera liquidambarella, Washington, DYAR, p. 108, t. c. **n. sp.**
Mesolia scythrastis, Queensland, TURNER, p. 164, P. Soc. Queensland xviii, **n. sp.**
Mestolobes antichora, Oahu, MEYRICK, p. 361, Fauna Hawaiiensis iii; *M. scaria*, Molokai, MEYRICK, p. 131, Ent. Mag. xl : **n. spp.**
Mimorista longidentalis, Peru, *pellucidalis*, Ecuador, DOGNIN, p. 128, Ann. Soc. ent. Belgique xlvi, **n. spp.**
Morova? innotata, Townsville, WARREN, p. 483, Nov. Zool. xi, **n. sp.**
Nachaba fluella, aromalis, arouva, p. 176, *N.? violascens*, p. 177, S. America, SCHAUS, Tr. Amer. ent. Soc. xxx, **n. spp.**

- Nacoleia albicinctalis*, p. 184, *infuscalis*, *binocularis*, p. 185, Bahamas, HAMPSON, Ann. Nat. Hist. xiv, **n. spp.**
- Nephopteryx syntaractis*, p. 145, *epicrypha*, p. 147, Queensland, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Niphostola punctata*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Noorda candidalis*, Ecuador, DOGNIN, p. 131, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Nyctereutica* **n. g.** type *N. asbolopsis* **n. sp.**, Queensland, TURNER, p. 192, P. Soc. Queensland xviii.
- Ollia* **n. g.**, p. 107, *O. santaritella* **n. sp.**, Arizona, p. 108, DYAR, J. N. York Ent. Soc. xii.
- Omiodes accepta*, larva, DYAR, p. 65, P. ent. Soc. Washington vi.
- O. antidoxa*, Oahu, MEYRICK, p. 358, Fauna Hawaiensis iii, **n. sp.**
- Omphaloptera virginalis*, *completalis*, p. 126, *O. ? stigmatalis*, p. 127, S. America, DOGNIN, Ann. Soc. ent. Belgique xlvi, **n. spp.**
- Orthaga orchidivora*, Queensland, TURNER, p. 199, P. Soc. Queensland xviii, **n. sp.**
- Ortholepis gillettella*, Colorado, DYAR, p. 107, P. ent. Soc. Washington vi, **n. sp.**
- Pachyzancla fimbrialis*, Ecuador, DOGNIN, p. 130, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Parabæra* **n. g.** near *Abæra*, *P. nitidalis* **n. sp.**, Ecuador, DOGNIN, p. 125, t. c.
- Paralipsa stenopepla*, Queensland, TURNER, p. 156, P. Soc. Queensland xviii, **n. sp.**
- Passadena* and *Getulia*, synonymy, DYAR, p. 114, P. ent. Soc. Washington vi.
- Pectinigera ardifera* Hulst, synonymy, DYAR, p. 159, t. c.
- Peoria discostrigella*, Arizona, DYAR, p. 115, t. c. **n. sp.**
- Phlyctænia tiliialis*, British Columbia, DYAR, p. 916, P. U. S. Mus. xxvii; *P. lampadias*, Hawaiian islands, MEYRICK, p. 359, Fauna Hawaiensis iii : **n. spp.**
- Phlyctænodes darwinialis*, Anklam, SAUBER, p. 109, Verh. Ver. Hamburg Unterh. xii, **n. sp.**
- Phryganodes hypoxantha*, Ecuador, DOGNIN, p. 128, Ann. Soc. ent. Belgique xlvi, **n. sp.**
- Phycita corethropus*, p. 138, *adiacritis*, p. 140, *trachystola*, *mixoleuca*, p. 142, *recondita*, *atimeta*, p. 143, Australia, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Pioneer arabescalis*, natural history, CHRÉTIEN, pp. 89–92, Naturaliste 1904.
- P. illineatalis*, *viridalis*, Ecuador, DOGNIN, p. 131, Ann. Soc. ent. Belgique xlvi, **n. spp.**
- Polygrammodes interpunctalis*, Peru, DOGNIN, p. 129, t. c. **n. sp.**
- Polyocha rhabdota*, *achrosta*, Queensland, TURNER, p. 122, P. Soc. Queensland xviii, **n. spp.**
- Poujadia callirhoda*, p. 120, *holochra*, p. 121, Australia, TURNER, t. c. **n. spp.**
- Psorosina* **n. g.** near *Psorosa*, *P. angulella* **n. sp.**, Iowa, DYAR, p. 113, P. ent. Soc. Washington vi.
- Pyla hanhamella*, *rainierella*, N. America, DYAR, p. 109, t. c.; *P. pallidella*, Utah, DYAR, p. 107, J. N. York Ent. Soc. xii : **n. spp.**
- Pyrallis costalis* var., THURNALL, p. 15, Ent. Mag. xl.
- Pyrausta machoeralis*, natural history, injuries to teak, HOLE, pp. 680–697, J. Bombay Soc. xv; *P. æralis*, Algerian var., CHRÉTIEN, p. 45, Naturaliste 1904.
- P. pyropsalis*, Bahamas, HAMPSON, p. 187, Ann. Nat. Hist. xiv, **n. sp.**

- Rhectosomia? longistrialis*, Ecuador, DOGNIN, p. 130, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Rhodoneura cypholoma*, Queensland, TURNER, p. 112, P. Soc. Queensland xviii, **n. sp.**
- Salebria triplagiella*, Manitoba, DYAR, p. 109, P. ent. Soc. Washington vi, **n. sp.**
- S. bakerella*, p. 105, *furciferella*, *vetustella*, p. 106, N. America, DYAR, J. N. York Ent. Soc. xii, **n. spp.**
- Salobrena phyrea*, Brazil, SCHAUS, p. 175, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Saluria rhodoessa*, Queensland, TURNER, p. 120, P. Soc. Queensland xviii, **n. sp.**
- Sanguesa dyopsata*, Mexico, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Sarata rhoiella*, Colorado, DYAR, p. 105, J. N. York Ent. Soc. xii, **n. sp.**
- Scenidiopis* **n. g.** for *Persicoptera chionozyga* Low., TURNER, p. 184, P. Soc. Queensland xviii.
- Scirpophaga holophæalis*, Bahamas, HAMPSON, p. 181, Ann. Nat. Hist. xiv, **n. sp.**
- Scoparia liebmanni*, Corsica, PETRY, p. 245, Stettin Ent. Zeit. lxxv; *S. torniplagalis*, Washington, DYAR, p. 105, J. N. York Ent. Soc. xii; *S. normalis*, p. 71, *fernaldalis*, *tricoloralis*, *cinereomedia*, p. 72, N. America, DYAR, Ent. News Philad. xv; *S. gymnopsis*, p. 131, *isophæa*, p. 132, Molokai, MEYRICK, Ent. Mag. xl; *S. gonodecta*, p. 362, *catactis*, p. 363, *religiosa*, p. 365, Hawaiian islds, MEYRICK, Fauna Hawaiiensis iii : **n. spp.**
- Selagia lithosella*=(*Honora luteella* Hulst), DYAR, p. 160, P. ent. Soc. Washington vi.
- Semnia mexicanalis*, Mexico, *S.? mirma*, Brazil, SCHAUS, p. 178, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Semniomima mediana*, Parana, SCHAUS, p. 178, t. c. **n. sp.**
- Siculodes triumphans*, Peru, WARREN, p. 1, Nov. Zool. xi; *S. figurata*, *lacteguttata*, Peru, WARREN, p. 493, t. c. **n. spp.**
- Sindris magnifica*, Angola, JORDAN, p. 447, Nov. Zool. xi, **n. sp.**
- Spatulipalpia sophronica*, Queensland, TURNER, p. 149, P. Soc. Queensland xviii, **n. sp.**
- Staudingeria olivacella*, *perluteella*, N. America, DYAR, p. 111, P. ent. Soc. Washington vi, **n. spp.**
- Stenia hieralis*, Borneo, SWINHOE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
- Stericta multicolor*, *nigrisquama*, S. America, DOGNIN, p. 124, Ann. Soc. ent. Belgique xlviii, **n. spp.**
- Sthenobela* **n. g.** near *Phycita*, p. 135, *S. niphostibes* **n. sp.**, Queensland, p. 136, TURNER, P. Soc. Queensland xviii.
- Striglina divisata*, Natuna Ids., WARREN, p. 484, Nov. Zool. xi, **n. sp.**
- Symphonistis* **n. g.** type *Nephoptyx monospila* Low., TURNER, p. 135, P. Soc. Queensland xviii.
- Tacoma*; characters and components, DYAR, p. 112, P. ent. Soc. Washington vi.
- T. nyssæcolella*, N. America, DYAR, p. 112, t. c. **n. sp.**
- Talis isodeta*, *xiphosema*, p. 175, *eucraspeda*, *orthotypa*, p. 176, *haplotypa*, p. 177, Australia, TURNER, P. Soc. Queensland xviii, **n. spp.**
- Tetrastichis leucogramma*, Bahamas, HAMPSON, p. 183, Ann. Nat. Hist. xiv; *T. paula*, Brazil, SCHAUS, p. 177, Tr. Amer. ent. Soc. xxx : **n. spp.**
- Titanoceros poliochyta*, Queensland, TURNER, p. 191, P. Soc. Queensland xviii, **n. sp.**
- Tolima cincaidella*, Wyoming, DYAR, p. 115, P. ent. Soc. Washington vi, **n. sp.**
- Tosale grandis*, Mexico, SCHAUS, p. 176, Tr. Amer. ent. Soc. xxx; *T. filata*, Ecuador, DOGNIN, p. 125, Ann. Soc. ent. Belgique xlviii : **n. spp.**

- Trissonea epiterpes*, p. 132, *capnoëssa*, p. 133, Australia, TURNER, P. Soc. Queensland xviii, **n. sp.**
Tylochares sceptucha, Queensland, TURNER, p. 130, t. c. **n. sp.**
Ubidia holomochla, Queensland, TURNER, p. 165, t. c. **n. sp.**
Ulophora brunneella, p. 106, *tephrosiella*, p. 107, N. America, DYAR, P. ent. Soc. Washington vi, **n. spp.**
Varneria n. g. p. 114, *V. postremella n. sp.*, Kentucky, p. 115, DYAR, t. c.
Vitula serratilineella, generic position, DYAR, p. 158, t. c.
Xanthomelaina quinquepuncta, Borneo, SWINHÖE, p. 156, Tr. ent. Soc. London 1904, **n. sp.**
Zeuzerodes subfulvata, Ecuador, WARREN, p. 1, Nov. Zool. xi, **n. sp.**
Zophodia orobanchella, Washington, DYAR, p. 111, P. ent. Soc. Washington vi; *Z. aureomaculella*, Texas, DYAR, p. 107, J. N. York Ent. Soc. xii : **n. spp.**

PTEROPHORIDÆ.

- Platyptilia ochrodactyla* var. *n. bosniaca*, REBEL, p. 323, Ann. Hofmus. Wien xix; *P. rhododactyla*, metamorphosis, MURTFELDT, p. 334, Canad. Ent. xxxvi.

TORTRICIDÆ.

- [Cf. DOGNIN (398), DYAR (430, 437), KEARFOTT (776, 777), PETRY (1039).]
 Instructions for collecting and preparing, KEARFOTT (778).
 Notes for popular use on the divisions of *Tortricidæ*, ROSTAGNO, Boll. Soc. zool. Ital. xii, pp. 70-76.
Acalla decosseana, pl. ii, figg. 10, 11, p. 41, FUCHS, Jahrb. nassau. Ver. lvii.
Acleris britannia, p. 138, *fragariana*, p. 140, British Columbia, KEARFOTT, Canad. Ent. xxxvi, **n. spp.**
Ancylis maritima, Rhode island, DYAR, p. 221, P. ent. Soc. Washington vi, **n. sp.**
Atteria purpurea, p. 132, *unciana*, *fumipennis*, p. 133, S. America, DOGNIN, Ann. Soc. ent. Belgique xlvi, **n. spp.**
Commophila fuscodorsana, British Columbia, KEARFOTT, p. 141, Canad. Ent. xxxvi, **n. sp.**
Conchylis altocorsicana, Corsica, PETRY, p. 248, Stettin Ent. Zeit. lxx, **n. sp.**
Cydia arctostaphylana, p. 109, *pseudotsugana*, p. 110, British Columbia, KEARFOTT, Canad. Ent. xxxvi, **n. spp.**
Enarmonia cockleana, British Columbia, KEARFOTT, p. 137, t. c. **n. sp.**
Gynandrosoma n. g. near *Pseudogalleria*, *G. punctidiscanum n. sp.*, N. America, DYAR, p. 60, P. ent. Soc. Washington vi.
Hastula hyperana, larval habits, CHAPMAN, p. lxx, P. ent. Soc. London 1904.
Olethreutes betulatana, food-plant, HAVERHORST, p. 97, Ent. Ber. Nederland i.
Opogona fumiceps, early stages, VAN DEVENTER, p. 83, pl. x, fig. 1, Tijdschr. Ent. xlv.
Setomorphia tineoides, early stages, VAN DEVENTER, p. 81, pl. ix, fig. 3, t. c.
Thiodia artemisiana var. *n. infimbriana*, DYAR, p. 927, P. U. S. Mus. xxvii.
Tortrix raptimacula, Ecuador, DOGNIN, p. 132, Ann. Soc. ent. Belgique xlvi, **n. sp.**
Polychrosis viteana, distinctions, natural history, SLINGERLAND, Bull. Cornell exp. Stat. No. 223, illustrations.
Proteopteryx willingana, Assinaboia, KEARFOTT, p. 306, Canad. Ent. xxxvi; *P. columbia*, p. 112, with varr. *albidorsana*, p. 113, and *mediostriana*, p. 114, British Columbia, KEARFOTT, t. c. : **n. spp.**

TINEIDÆ, s. l.

[Cf. BUSCK (203–206), CHRÉTIEN (276), DOGNIN (398), FERNALD (497), FUCHS (572), FYLES (576), LOWER (888), MEYRICK (946), PETRY (1038–1040), REBEL (1122), REUTER (1158), SAUBER (1212), TURNER (1411), VAN DEVENTER (1428, 1429), WALSINGHAM (1469, 1470).]

Remarkable larval cases and habits, GREEN, p. 158, *Spolia Zeylan.* ii.

Annotated list of Finland *Tineidæ*, REUTER, *Acta Soc. Faun. Fenn.* xxvi, No. 1, pp. 4–66.

Notes for popular use on the classification of *Tineidæ*, ROSTAGNO, pp. 68–87, *Boll. Soc. zool. Ital.* xiii.

Achoria **n. g.** *A. inopina* **n. sp.**, Sydney, MEYRICK, p. 405, *P. Linn. Soc. N. S. Wales* xxix.

Acompsia dimorpha, Pyrenees, PETRY, p. 4, *Deutsche ent. Zeitschr. Iris* xvii, **n. sp.**

Adela collicolella, Tangier, WALSINGHAM, p. 7, *Ent. Mag.* xl, **n. sp.**

Æoloscelis aulacosema, *euphædra*, p. 172, *petrosarca*, *hemicroca*, Australia, LOWER, *Tr. R. Soc. S. Austral.* xxviii, **n. spp.**

Allocota **n. g.**, p. 419, *A. simulacrella* **n. sp.**, Sydney, p. 420, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Allonymyna **n. n.** for *Orchemia* Fernald, BUSCK, p. 745, *P. U. S. Mus.* xxvii.

Anacamptis linella, Basses Alpes, CHRÉTIEN, p. 151, *Naturaliste* 1904; *A. fragariella*, Washington, BUSCK, p. 760, *P. U. S. Mus.* xxvii : **n. spp.**

Anaptilora **n. g.** *A. isocosma*, p. 390, *cremias*, p. 391, **n. spp.**, Queensland, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Anarsia trichodeta, p. 415, *molybdota*, *leucophora*, p. 417, *epiula*, p. 418, **n. spp.**, Australia, MEYRICK, t. c.

Apotistatus **n. g.** near *Symmoca*, *A. leucostictus* **n. sp.**, Algeria, WALSINGHAM, p. 271, *Ent. Mag.* xl.

Argyresthia prenjjella, pl. v, fig. 21, p. 347, REBEL, *Ann. Hofmus. Wien* xix.

Aristotelia sinistra, p. 287, *macrothecta*, *furtiva*, p. 288, *thetica*, *tetracosma*, p. 289, *antipala*, *pamphæa*, *epimetalla*, p. 290, Australia, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix; *A. natalella*, *harrisonella*, *Brit. Columbia*, BUSCK, p. 756, *P. U. S. Mus.* xxvii : **n. spp.**

Arotria **n. g.** *A. iophæa* **n. sp.**, Queensland, MEYRICK, p. 387, *P. Linn. Soc. N. S. Wales* xxix.

Aulacomima **n. g.** *A. trinervis* **n. sp.**, Sydney, MEYRICK, p. 395, t. c.

Batrachedra zonochra, p. 169, *stenosema*, *hypoleuca*, *B. ? lygropis*, Australia, p. 170, LOWER, *Tr. R. Soc. S. Austral.* xxviii, **n. spp.**

Borkhausenia amphixantha, Melbourne, *B. ? erythrocephala*, N. S. W., LOWER, p. 169, t. c. **n. spp.**

Brachodes Gn. = (*Atychia* Latr. nec Ochs.), WALSINGHAM, p. 7, *Ent. Mag.* xl.

Calicotis microgalopsis, Queensland, LOWER, p. 171, t. c. **n. sp.**

Cerostoma indecorella, characters, variation, WALSINGHAM, p. 319, *Ent. Mag.* xl.

Chaliniastis **n. g.**, p. 301, *C. astrapæa* **n. sp.**, Queensland, p. 302, MEYRICK, *P. Linn. Soc. N. S. Wales* xxix.

Choreutis balsamorhizella, p. 748, *piperella*, p. 749, Washington, BUSCK, *P. U. S. Mus.* xxvii, **n. spp.**

Clymene egerifasciella to *Trichoptera*, BANKS, p. 116, *Ent. News Philad.* xv.

Coleophora tiliaefoliella Clem., description, KEARFOTT, p. 324, *Canad. Ent.* xxxvi; *C. limosipennella*, natural history, HOOVER, pp. 54–56, *Ent. News Philad.* xv; *C.*, cases, habits, TURNER, pp. xxxiv–xxxvi, *P. ent. Soc. London* 1904; *C.*, cases, TURNER, pp. xlix, l, t. c., and t. c. pp. lx–lxiii; *C.*, notes on, eggs etc., TURNER, pp. 32–34, *Ent. Rec.* xvi.

C. benedicteella, Basses Alpes, CHRÉTIEN, p. 163, *Naturaliste* 1904; *C. persimilis*, Prenj, REBEL, p. 365, *Ann. Hofmus. Wien* xix; *C. neviusiella*, China, BUSCK, p. 45, *J. N. York ent. Soc.* xii : **n. spp.**

- Colobodes* **n. g.** *C. insomnis* **n. sp.**, Sydney, MEYRICK, p. 297, P. Linn. Soc. N. S. Wales xxix.
- Coptodisca arbutiella*, Washington, BUSCK, p. 769, P. U. S. Mus. xxvii, **n. sp.**
- Coptotelia nigriplaga*, Ecuador, DOGNIN, p. 134, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Cosmopteryx vellella*, Washington, BUSCK, p. 768, P. U. S. Mus. xxvii, **n. sp.**
- Craspedotis* **n. g.** *C. soloeca*, p. 326, *pragmatica*, *thinodes* **n. spp.**, Australia, p. 327, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Crocantes diula*, p. 398, *halurga*, p. 399, *glycina*, p. 400, *perigrapta*, p. 402, *zonias*, p. 403, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Crasopola* **n. g.** for *Atasthalistis euchroa* Low., MEYRICK, p. 410, t. c.
- Cryptolechia sesamaculata*, Ecuador, DOGNIN, p. 133, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Cryptophasa alphetodes*, *themerodes*, Queensland, TURNER, p. 244, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Cymatomorpha* **n. g.**, p. 411, *C. euplecta* **n. sp.**, Australia, p. 412, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Dectobathra* **n. g.**, p. 299, *D. choristis*, *amethystina*, p. 300, *insignis*, p. 301, **n. spp.**, Australia, MEYRICK, t. c.
- Depressaria heracleana*, food-plant, HAVERHORST, p. 97, Ent. Ber. Nederland. i.
- D. pentheri*, Prenj, REBEL, p. 360, pl. v, fig. 26, Ann. Hofmus. Wien xix ; *D. rosaciliella*, p. 763, *canella*, p. 764, *pallidella*, *alienella*, p. 765, N. America, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Deuteroptila* **n. g.**, p. 418, *D. sphenophora* **n. sp.**, Queensland, p. 419, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Dorata lineata* Wals. (as *Pterolonche*)=(*virgatella* Busck), DYAR, p. 178, J. N. York Ent. Soc. xii.
- Dorata* **n. g.** ? near *Chimabache*, *D. virgatella*, p. 123, *inornatella*, p. 124, **n. spp.**, Arizona, BUSCK, P. ent. Soc. Washington vi.
- Doryphora palustrella*, larva, BARRETT, p. 278, Ent. Mag. xl.
- Dysmasia petrinella*, habits, CHRÉTIEN, p. 119, Bull. Soc. ent. France 1904.
- Ephelictis* **n. g.**, p. 387, *E. megalarthra*, *neochalca*, p. 368, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Epibrontis* **n. g.** for *Gelechia hemichlæna* Low., MEYRICK, p. 324, t. c.
- Epidoca albidella* Reb. to *Symmoca*, WALSINGHAM, p. 272, Ent. Mag. xl.
- Epimastis* **n. g.** for *Gelechia porphyroloma* Low., MEYRICK, p. 325, P. Linn. Soc. N. S. Wales xxix.
- Epiphthora megalornis*, *balonodes*, p. 261, *drosias*, *thyellias*, *lemurella*, p. 262, *niphaula*, *psychrodes*, *miarodes*, p. 263, *isonira*, *autoleuca*, p. 264, *cryolopha*, *leucomichla*, p. 265, *phantusta*, *acknius*, *spectrella*, p. 266, *coniombra*, *microtima harpastis*, p. 267, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Epithectis delminiella*, Balkans, REBEL, p. 353, Ann. Hofmus. Wien xix, **n. sp.**
- Eremica* **n. g.** near *Symmoca*, *E. saharae*, p. 270, *lithochroma* **n. spp.**, Algeria, p. 271, WALSINGHAM, Ent. Mag. xl.
- Eriocrania chrysolepidella*, p. 42, *sangii*, *kaltenbachii*, p. 43, notes, FUCHS, Jahrb. nassau. Ver. lvii.
- E. argyrolepidella*, Bornich, id. p. 43, t. c. **n. sp.**
- Ethmia zelleriella*, larva, DYAR, p. 3, P. ent. Soc. Washington vi ; *E. longimaculella*, larva, DYAR, p. 178, J. N. York Ent. Soc. xii.
- E. caliginosella*, Colorado, BUSCK, p. 44, t. c. **n. sp.**
- Eucalantica* **n. g.** for *Calantica polita* Walsingh., BUSCK, p. 750, P. U. S. Mus. xxvii.
- Eumasia* **n. g.** for *Dysmasia parietariella*, CHRÉTIEN, p. 119, Bull. Soc. ent. France 1904.
- Gelechia pyrenaica*, Pic du Midi, PETRY, p. 3, Deutsche ent. Zeitschr. Iris

- xvii; *G. montivaga*, p. 221, *lacertella*, p. 222, *sinuatella*, p. 223, *erubescens*, p. 265, *cerostomatella*, *nigrorosea*, p. 266, *heligmatodes*, p. 267, Algeria, WALSINGHAM, Ent. Mag. xl; *G. limitanella*, p. 349, pl. v, fig. 22, *G. (Lita) lakatensis*, p. 351, fig. 24, Bosnia, REBEL, Ann. Hofmus. Wien xix; *G. nephelombra*, p. 309, *bathropis*, p. 310, *epactæa*, p. 312, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix; *G. mandella*, *monella*, p. 759, *ceanothiella*, p. 760, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Glyphidocera septentrionella*, Brit. Columbia, BUSCK, p. 762, t. c. **n. sp.**
- Gnorinoschema bucolica*, p. 317, *petrinodes*, *pyrrhauthes*, p. 318, *marina*, p. 319, *xerophylla*, p. 320, *eschatopis*, p. 321, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix; *G. washingtoniella*, p. 757, *radiatella*, *splendoriferella*, p. 758, Washington, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Gracilaria elongella* varr., BUSCK, p. 770, t. c.
- G. cramerella*, Java, SNELLEN, p. 84, early stages, VAN DEVENTER, l. c. pl. 10, fig. 2, Tijdschr. Ent. xlv; *G. eugeniella*, p. 11, pl. i, fig. 4, *barringtoniella*, p. 14, fig. 5, *diffuella*, p. 17, fig. 6, *glutella*, p. 20, fig. 7, *soyella*, p. 22, pl. ii, fig. 1, *protiella*, p. 25, fig. 2, *grisella*, p. 27, pl. ii, fig. 3, Java, VAN DEVENTER, Tijdschr. Ent. xlvii; *G. murtfeldtella*, N. America, BUSCK, p. 771, P. U. S. Mus. xxvii : **n. spp.**
- Heliozela præustella*, pl. i, fig. 3, p. 7, *sobrinella*, p. 9, Java, VAN DEVENTER, Tijdschr. Ent. xlvii, **n. spp.**
- Hemerophila* BUSCK, **n. spp.**, see *Geometridæ*.
- Hemiarcha* **n. g.** type *Gelechia thermochroa*, MEYRICK, p. 331, P. Linn. Soc. N. S. Wales xxix.
- Holcoecera glandulella*, metamorphosis, CHITTENDEN, p. 38, Bull. U. S. Dep. Agric. Ent. xlv.
- Hyodectis* **n. g.** *H. crenoides* **n. sp.**, Australia, MEYRICK, p. 411, P. Linn. Soc. N. S. Wales xxix.
- Idiophantis* **n. g.** *I. habrias* **n. sp.**, Brisbane, MEYRICK, p. 298, t. c.
- Incurvaria piperella*, Washington, BUSCK, p. 775, P. U. S. Mus. xxvii, **n. sp.**
- Iulota* **n. g.** near *Aristotelia*, *I. ithyxyla*, Australia, p. 283, *triglossa*, Tasmania, p. 284, **n. spp.**, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Kearfottia* **n. g.** *Choreutinae*, p. 130, *K. albifusciella* **n. sp.**, N. America, p. 131, FERNALD, Canad. Ent. xxxvi.
- Leucoptera pachystimella*, Brit. Columbia, BUSCK, p. 774, P. U. S. Mus. xxvii, **n. sp.**
- Leobatus* **n. g.** near *Gelechia*, p. 220, *L. fagoniæ* **n. sp.**, Algeria, p. 221, WALSINGHAM, Ent. Mag. xl.
- Leptogeneia* **n. g.**, p. 412, *L. bicristata* **n. sp.**, Sydney, p. 413, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Lichenaula callispora*, Australia, TURNER, p. 245, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Limnoecia heterozona*, *isodesma*, *anisodesma*, Australia, LOWER, p. 174, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Lita nitentella*, natural history, PETRY, pp. 176–179, Stettin Ent. Zeit. lxy.
- L. oreocyrniella*, Corsica, PETRY, p. 249, t. c. **n. sp.**
- Lithocolletis suaveolentis*, Corsica, PETRY, p. 252, t. c. **n. sp.**
- Litodonta hydromeli*, larva, DYAR, p. 3, P. ent. Soc. Washington vi.
- Lyonetia simplella*, Java, SNELLEN, p. 86, early stages, VAN DEVENTER, l. c. pl. x, fig. 3, Tijdschr. Ent. xlv; *L. saliciella*, Brit. Columbia, BUSCK, p. 773, P. U. S. Mus. xxvii : **n. spp.**
- Macrenches* **n. g.**, p. 306, *M. eurybatis* **n. sp.**, W. Australia, p. 307, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Macrotona* **n. g.**, p. 405, *M. terrigena*, p. 406, *cyamitis*, *sobria*, p. 407, **n. spp.**, Australia, MEYRICK, t. c.
- Marmara arbutiella*, Washington, BUSCK, p. 772, P. U. S. Mus. xxvii, **n. sp.**

- Megacraspedus platyleuca*, p. 274, *astempbella*, *centrosema*, p. 275, *oxyphanes*, *chalcoscia*, *melitopis*, p. 276, *euxena*, *hoplitis*, *inficeta*, p. 277, *pityritis*, p. 278, *sclerotricha*, p. 279, *aphileta*, *isotis*, p. 280, *coniodes*, p. 281, *ischnota*, *popularis*, p. 282, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Metzneria incognita*, Algeria, WALSINGHAM, p. 220, Ent. Mag. xl, **n. sp.**
- Nemotois constantinella*=(*demaisoni* Rgt.), WALSINGHAM, p. 217, Ent. Mag. xl.
- Nepticula bleonella*, Basses Alpes, CHRÉTIEN, p. 164, Naturaliste 1904 ; *N. thuringiaca*, Germany, PETRY, p. 179, Stettin Ent. Zeit. lxxv ; *N. tingitella*, Tangier, WALSINGHAM, p. 8, Ent. Mag. xl : **n. spp.**
- Nothris sulcella*, Prenj, REBEL, p. 356, pl. x, fig. 25, Ann. Hofmus. Wien xix ; *N. chloristis*, p. 421, *centrothetis*, p. 422, *crocina*, p. 423, *mylicotis*, p. 426, *tephrastis*, *dentata*, p. 427, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Ocystola heliotricha*, Tasmania, LOWER, p. 168, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Onebala* to be compared with *Trichotaphe*, *O. lamprostoma* Z.=(*zulu* Wals.), WALSINGHAM, p. 267, Ent. Mag. xl.
- Ornix sauberiella* (Sorh.), Hamburg, SAUBER, p. 46, Verh. Ver. Hamburg. Unterh. xii, **n. sp.**
- Orthoptila* **n. g.** for *Æcophora abruptella* Walk., MEYRICK, p. 392, P. Linn. Soc. N. S. Wales xxix.
- Paltodora stalactis*, p. 271, *sciopola*, *actias*, p. 272, Australia and Tasmania, MEYRICK, t. c. **n. spp.**
- Pancoenia* **n. g.** *P. periphora*, p. 389, *pelota*, p. 390, **n. spp.**, Sydney, MEYRICK, t. c.
- Paraclemensia* **n. n.** for *Brackenridgia* Busck 1903, BUSCK, p. 177, J. N. York Ent. Soc. xii.
- Phlæograptis* **n. g.**, p. 393, *P. macrynta*, *brachynta*, *zopherota*, p. 394, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Phlæopola sciaspila*, Queensland, LOWER, p. 168, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Phyllocnistis minimella*, p. 34, pl. ii, fig. 6, *humiliella*, p. 38, fig. 7, *exiguella*, p. 40, fig. 8, Java, VAN DEVENTER, Tijdschr. Ent. xlvii ; *P. minutella*, Java, SNELLEN, p. 87, early stages, VAN DEVENTER, l. c. pl. x, fig. 4, op. cit. xlvii : **n. spp.**
- Plutella notabilis*, Washington, p. 752, *poulella*, Brit. Columbia, p. 753, BUSCK, P. U. S. Mus. xxvii, **n. spp.**
- Proactica* **n. g.** near *Anaphaula*, p. 268, *P. halimilignella* **n. sp.**, Algeria, p. 269, WALSINGHAM, Ent. Mag. xl.
- Procometis aplegiopa*, Queensland, TURNER, p. 245, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Prodosiarcha* **n. g.** *P. loxodesma* **n. sp.**, Australia, MEYRICK, p. 330, P. Linn. Soc. N. S. Wales xxix.
- Prototechia* **n. g.**, p. 332 for 85 species Australian *Gelechiidæ*, most of them new, viz., *tetraploa*, *telopis*, p. 338, *exarista*, p. 339, *acroleuca*, *camionopis*, p. 340, *temenitis*, *voluta*, p. 341, *pacifica*, p. 342, *trachyphanes*, *prisca*, p. 343, *diplonesa*, *crypsibatis*, p. 344, *flexilis*, *frugalis*, p. 345, *microdora*, *invalida*, *cladara*, p. 346, *sciodes*, *trichosema*, p. 347, *aclera*, *autopis*, p. 348, *elpistis*, p. 349, *argocentra*, *liota*, p. 350, *hypoleuca*, *cosmotis*, p. 351, *psephias*, *actinota*, p. 352, *nyctias*, *iochlaema*, p. 353, *xestolitha*, *nephelota*, p. 354, *anthracina*, *phlæodes*, *thyridota*, p. 355, *sarisias*, p. 356, *englypta*, p. 357, *obeliscota*, p. 358, *sisyræa*, *chenias*, p. 359, *mechanistis*, p. 360, *xuthias*, p. 361, *ceramica*, p. 362, *hormodes*, *plinthactis*, p. 363, *stratifera*, *catarrhacta*, p. 366, *tabulata*, *pelogramma*, p. 367, *amblopis*, p. 368, *æolopis*, *hylas*, p. 369, *compsocroa*, p. 370, *odorifera*, *micropa*, p. 371, *diplanetis*, *cephalota*, p. 373, *scytina*, *ananeura*, p. 374, *xanthocephala*, p. 376, *trichalina*, *arganthes*, p. 377,

- selenia*, p. 378, *gorgonias*, *chiradia*, p. 380, *thyrsoptera*, p. 381, *phasianis*, p. 382, *loemias*, p. 383, *megalommata*, *banausodes*, p. 384, *crotalodes*, *molyntis*, p. 385, *aspetodes*, p. 386, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Pyroderces albimaculella*, p. 30, pl. ii, fig. 4, *albilineella*, p. 33, fig. 5, Java, VAN DEVENTER, Tijdschr. Ent. xlv; *P. argyrozona*, Queensland, LOWER, p. 173, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Rhinosisa pullidipulchra*, Algeria, WALSINGHAM, p. 269, Ent. Mag. xl, **n. sp.**
- Scarisophora* **n. g.**, p. 403, *S. leptoglypta*, *chlænota* **n. spp.**, Australia, p. 404, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Sarotorna* **n. g.**, p. 322, *S. eridora* **n. sp.**, Australia, p. 323, MEYRICK, t. c.
- Scardia burkerella*, Washington, BUSCK, p. 777, P. U. S. Mus. xxvii, **n. sp.**
- Scythris magnatella*, Brit. Columbia, BUSCK, p. 768, t. c. **n. sp.**
- Smenodoca* **n. g.**, p. 302, *S. erebenna* **n. sp.**, Australia, p. 303, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Spatularia* **n. g.** near *Tinea*, *S. fuligineella* **n. sp.**, Java, with early stages, VAN DEVENTER, p. 1, pl. i, fig. 1, Tijdschr. Ent. xlvii.
- Sphaleractis* **n. g.** *S. parasticta*, p. 328, *eurysema*, p. 329, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Stigmatophora fiordalisa*, Corsica, PETRY, p. 250, Stettin Ent. Zeit. lxxv, **n. sp.**
- Stathmopoda trichopeda*, *holobapta*, Australia, LOWER, p. 171, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Stegasta* **n. g.**, p. 313, *S. variana*, *allactis*, p. 314, **n. spp.**, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Symbolistis* **n. g.**, p. 413, *S. orophota*, *argyromitra* **n. spp.**, Australia, p. 414, MEYRICK, t. c.
- Symmoca sericiella*, Algeria, WALSINGHAM, p. 273, Ent. Mag. xl, **n. sp.**
- Styloceros* **n. g.** *S. trigonias*, p. 408, *tychnocentra*, *cyclonitis*, p. 409, **n. spp.**, Australia and Tasmania, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Syntomactis decalopha*, *argoscia*, p. 175, *gnophodes*, *perinephes*, *polychroa*, p. 176, *melamydra*, p. 177, Australia, LOWER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Thalamarchis* **n. g.** for *Cryptolechia alveola* Feld., MEYRICK, p. 436, P. Linn. Soc. N. S. Wales xxix.
- Thiotricha* **n. g.**, p. 292, type *thorybodes* Meyr., with *T. chrysopa*, *oxytheces*, p. 293, *margarodes*, *leucothona*, p. 294, *paraconta*, *arthrodes*, p. 295, *bullata*, *niphastis*, *anticentra*, p. 296, *parthenica*, p. 297, **n. spp.**, Australia and Tasmania, MEYRICK, t. c.
- Tinea leucocapitella*, Washington, BUSCK, p. 776, P. U. S. Mus. xxvii, **n. sp.**
- Trachydora leucobathra*, p. 177, *polyzona*, *zophopepla*, p. 178, *molybdimera*, *anthrascopa*, *centromela*, p. 179, *microleuca*, *argoneura*, p. 180, Australia, LOWER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Trichotaphe levisella*, Quebec, FYLES, p. 211, Canad. Ent. xxxvi; *T. simplicella*, p. 761, *leuconotella*, p. 762, Washington, BUSCK, P. U. S. Mus. xxvii : **n. spp.**
- Tritadelpha* **n. g.** *T. microptila* **n. sp.**, Brisbane, p. 323, MEYRICK, P. Linn. Soc. N. S. Wales xxix.
- Xylorycta cirrhodes*, Queensland, TURNER, p. 244, Tr. R. Soc. S. Austral. xxviii, **n. sp.**
- Xystophora modicella*, Java, with early stage, VAN DEVENTER, p. 4, pl. i, fig. 2, Tijdschr. Ent. xlvii, **n. sp.**
- Yponomeuta*; synonymy, GUIGNON, pp. 219, 220, Feuille Natural. xxxiv : LOISELLE, t. c. p. 235.
- Ipsolophus ammxanthus*, *zygophorus*, p. 430, *peristylis*, p. 431, *achlyodes*, *iodorus*, p. 432, *plasticus*, p. 433, *capnites*, p. 435, Australia, MEYRICK, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Zelleria gracilariella*, p. 753, *ribesella*, p. 754, Brit. Columbia, BUSCK, P. U. S. Mus. xxvii, **n. spp.**

(D.) DIPTERA.

- Brief history of North American *Dipterology*, COQUILLETT (312).
 The mouth-parts of *Diptera*, WIMMER, Rozp. Ceske Ak. Praze ii, xiii, No. 1, pp. 4-10, pl. 2.
 WESCHÉ has an important paper on the comparative anatomy of the trophi, and their bearing on classification, J. R. Micr. Soc. 1904, pp. 28-47, pls. iii-viii.
 The palpi, WESCHÉ, Tr. Linn. Soc. London 1904, pl. 4, pp. 219-230, pls. viii-x.
Diptera of Alaska, COQUILLETT (320).
 Brief note on *Diptera* of Rome, TUCCIMEI, pp. 218-222, Boll. Soc. zool. Ital. xi-xiii.
 Study of the reduced head, *Chironomus*, *Phalacroceræ*, *Microdon*, *Musca*, HOLMGREN, pp. 343-355, cuts, Zool. Anz. xxvii.
 Sense-organs in *Diptera*, WESCHÉ, J. Quekett Club (2), ix, pp. 91-104, pls. vi, vii.
 List of types of *Diptera* in the American Museum Natural History, BEUTENMÜLLER (121).

CECIDOMYIIDÆ.

- [Cf. BEZZI (128), COCKERELL (287), COLLIN (298), KIEFFER (792), MARCHAL (906, 910, 911), MEUNIER (942), SLINGERLAND & JOHNSON (1309), TROTTER (1396), WEBSTER (1499).]
 Cecid. gall on *Arthrocnemum*, Marocco, TROTTER, p. 14, cut, Marcellia iii.
Cecidomyiidae in amber, n. spp. cf. Palæoentomology, p. 124.
 Catalogue of British *Cecidomyiidae*, COLLIN, pp. 93-99, Ent. Mag. xl.
Cecidomyia destructor, history of its parasite *Polygnotus* (*Platygaster*), MARCHAL, Arch. Zool. exp. xxxii, pp. 300 etc.; *C. gleditchiæ*, galls, BRITTON, p. 212, pl. ii b, Rep. Connecticut exp. Stat. 1904; *C. nigra*, and others in pears, FERRAUT, pp. 298-303, Allg. Zeitschr. Ent. ix.
C. perocculta, Colorado, COCKERELL, p. 156, Canad. Ent. xxxvi; *C. ? johnsoni*, N. America, SLINGERLAND, p. 72, Bull. Cornell Exp. Stat. No. 224 : n. spp.
Clinodiplosis dahliæ, Vallombrosa, KIEFFER, p. 92, Marcellia iii, n. sp.
Diplosis resinicola, parasites, ECKEL, p. 325, Biol. Bull. vi.
D. coloradella, Colorado, COCKERELL, p. 155, Canad. Ent. xxxvi, n. sp.
Neocerata rhodophaga (? = *Cecid. rosarum*) metamorphoses, WEBSTER, pp. 15-25, Bull. Illinois Lab. vii.
Perrisia turionum, Italy on *Asparagus*, TROTTER, p. 6, Marcellia iii; *P. vallisumbrosæ*, Italy, KIEFFER, p. 91, Marcellia iii : n. spp.
Rhabdophaga porterae, New Mexico, COCKERELL, p. 155, Canad. Ent. xxxvi, n. sp.
Schizomyia gennadii, Cyprus, MARCHAL, p. 272, Bull. Soc. ent. France 1904, n. sp.; *S. gennadii*, natural history, MARCHAL, pp. 561-566, t. c.

MYCETOPHILIDÆ.

- [Cf. CHAPMAN (260), COQUILLETT (313, 315), MEUNIER (942).]
Mycetophilidae and *Sciaridae* in amber, relations of divisions of *Mycetophilidae*, MEUNIER (942) and Palæoentomology, p. 124.

- Mycetophilid* cocoons, GREEN, p. 158, Spolia Zeylan. ii.
Acnemia varipennis, California, COQUILLETT, p. 169, P. ent. Soc. Washington vi, n. sp.
Ceroplastus sesioides, *tipuloides*, in Finland, POPPIUS, pp. 144-146, Medd. Soc. Faun. Fenn. 1902/03.
Celosia pygophora, California, COQUILLETT, p. 170, P. ent. Soc. Washington vi, n. sp.
Eugnoriste brevisrostris, Colorado, COQUILLETT, p. 169, t. c. n. sp.
Lasiosoma hirta, structure of eggs and pupa, CHAPMAN, pp. 103-107, Ent. Mag. xl.
Phronia tenebrosa, California, COQUILLETT, p. 170, P. ent. Soc. Washington vi, n. sp.
Platyura pullata, California, COQUILLETT, p. 171, t. c. n. sp.
Sciara trifusciata, Nicaragua, COQUILLETT, p. 90, t. c. n. sp.

CHIRONOMIDÆ.

- [Cf. CHEVREL (262), COQUILLETT (313, 315, 317, 319), HOLMGREN (699), MEUNIER (942).]
Ceratopogon medius, New Jersey, COQUILLETT, p. 166, P. ent. Soc. Washington vi; *C. terminalis*, Nicaragua, COQUILLETT, p. 90, t. c.; *C. guttatus*, Brazil, COQUILLETT, p. 35, J. N. York Ent. Soc. xii: n. spp.
Chironomus, anatomy of larva, head, HOLMGREN (699); *C. plumosus*, great dancing swarin, SCHUSTER, p. 344, Zool. Garten xlv.
Hydrobæus lugubris, larva and habits, GIARD, pp. 164, 165, Bull. Soc. ent. France 1904.
Metriocnemus knabi, Massachusetts, COQUILLETT, p. 11, Canad. Ent. xxxvi, n. sp.
Tanypus dyari, pupa and its habits, GIRAULT, p. 81, Psyche xi.
Thalassomyia; *Scopelodromus* is the same genus, but *T. frauenfeldi* and *S. isemerinus* are different species, CHEVREL, pp. xxix-xxxv, Arch. zool. exp. Notes 1904.

CULICIDÆ.

- [Cf. BALFOUR (77A), CHRISTOPHERS (277), COGGI & CECCHERELLI (296), COLLEDGE (297), COQUILLETT (315, 316, 317), DUTTON (418), DYAR (421, 423, 425, 426, 429), DYAR & KNAB (442), DYÉ (443, 444), FELT (495), FELT & YOUNG (495A), GILES (601-604), GOELDI (615), GROSSBECK (637, 638), JAMES (758, 759), JAMES & LISTON (760), KERTÉSZ (790), KNAB (821, 822), LEACH (865), LEBREDO (867), LEON (874, 875), LUDLOW (891, 892), MCCracken (931), MEUNIER (943), PAZOS (1012), SCHAUDINN (1224), SCHNEIDER (1233), SMITH (1315-1317, 1319), STEFANI-PEREZ (1339), THEOBALD (1371, 1373, 1374, 1376), WAHLGREN (1463), WIMMER (1534).]

- The genera criticised, GILES, pp. 365 etc., J. trop. Medicine vii.
 Mosquito, anatomy, LEBREDO (867).
 The structure of proboscis in *Anopheles*, LEON, Zool. Anz. xxvii, pp. 730-732, cut.
 The alimentary system and mode of ingestion of *Culex pipiens*, SCHAUDINN (1224).
Culicidæ and their parasites, general account, DYÉ, Arch. parasit. ix, pp. 5-77.
 Notes on habits and distribution of *Culicidæ* in Italy, COGGI & CECCHERELLI, pp. 55-57, Bull. Soc. ent. Ital. xxxvi.

- Hungarian *Culicidæ*, treatise on in Hungarian, KERTÉSZ, Allatt. Kozl. Magyar Tars. iii, pp. 1-75.
- Culicidæ* of Egypt, Sudan and Abyssinia, THEOBALD, pp. 62-83, pls. i-vi, 1st Rep. Wellcome Lab.
- Culicidæ* of the Nile region, BALFOUR (77A).
- Culicidæ* of Tchad and of Chari, LAVERAN, pp. 1069, 1070, Soc. Biol. lvi.
- Culicidæ* in Guinea, LAVERAN, p. 555, C.R. Soc. Biol. lvi.
- General account of mosquitoes, and monograph of *Anopheles* of India and their larvæ, JAMES & LISTON, *Anopheles* of India, 30 pls.
- Culicidæ* of Upper Tonkin, LAVERAN, pp. 1070, 1071, C.R. Soc. Biol. lvi.
- Monograph of *Culicidæ* of New York, with natural history observations, larvæ, and descriptions of spp. n. and genn. n., FELT, Bull. N. York Mus. No. 79, pp. 241-400, 57 pls. and many cuts.
- Notes on *Culicidæ* and larvæ in British Columbia, DYAR, pp. 37-41, P. ent. Soc. Washington vi.
- Rearing *Culicidæ* larvæ and importance of larvæ for distinction of species, FELT & YOUNG, p. 312, Science xx.
- Larvæ, epistomal appendages of, KNAB, pp. 175-177, pl. x, J. N. York Ent. Soc. xii.
- Presumed parthenogenesis of *Culex*, KELLOGG, p. 59, Allg. Zeitschr. Ent. ix.
- Experiments as to feeding, oviposition, etc. with reference to medical point of view, *Stegomyia fasciata* and *Culex fatigans*, GOELDI (615).
- Mosquito-control in New Jersey, with account, and descriptions, of the species occurring there, their habits and life-histories, SMITH (1315).
- Mosquitoes and mosquito control, Connecticut, BRITTON & VIERECK, pp. 253-310, pls. x-xvii, Rep. Connecticut exp. Stat. 1904.
- Protection against *Anopheles* among the ancients, MANZI, pp. 88-109, Arch. parasit. viii.
- Anopheles*, classification discussed, the Indian forms described and figured, their larvæ, JAMES & LISTON, *Anopheles* of India; *A. costalis* var. n. *melas*, p. ii, *A. funestus* varr. n. *umbrosus* and *subumbrosus*, p. iv, THEOBALD, Thompson Yates Lab. Rep. v, Mem. x App.; *A.*, at Siena, COGGI & CECCHERELLI, pp. 53, 54, Bull. Soc. ent. Ital. xxxvi; *A.*, in Sicily, similarity of larva to that of *Dixa*, STEFANI-PEREZ, pp. 9, etc., Natural. Sicil. xvii; *A.* in Madagascar, DYÉ, C.R. Soc. Biol. lvi, pp. 544, 545; *A.* in India, habits, larvæ, JAMES, Sci. Mem. India n. s. No. 2 (1902), pp. 27-59, unnamed spp. allied to *A. jamesii*, pp. 40-43, t. c.; *A.* in Victoria, LEACH, Victorian Natural. xxi, pp. 9-12; *A. maculipennis* and malaria, LAVERAN, pp. 325, 326, C.R. Soc. Biol. lvi; *A. vincenti*, characters, LAVERAN, p. 1072, t. c.; *A. barberi*, predaceous larva, DYAR, p. 243, J. N. York Ent. Soc. xii; *A. claviger*, natural history, seasons, SCHNEIDER, pp. 41-45, KB. Ver. Riga xlvii; *A. crucians*, larva, SMITH, p. 150, pl. xii, Ent. News Philad. xv; *A.*, biting apparatus of, LEON, pp. 97, 98, Bull. Soc. Jassy xviii.
- A. wellcomei*, Nile, THEOBALD, p. 64, pl. iii, fig. 4, and pl. v, fig. 5, 1st Rep. Wellcome Lab.; *A. culiciformis*, Bombay, JAMES & LISTON, p. 122, larva plate xv, *Anopheles* of India; *A. fluviatilis*, p. 31, *jeyporiensis*, p. 32, *immaculata*, p. 35, *stephensi*, p. 45, *pulcherrimus*, p. 48, India, JAMES [in 1902], Sci. Mem. India (n. s.), No. 2; *A. franciscanus*, California, McCracken, p. 12, pl. ii, Ent. News Philad. xv: n. spp.
- Catageomyia* n. g. near *Stegomyia*, *senegalensis* n. sp., Africa, THEOBALD, pp. i, Thompson Yates Lab. Rep. v, Mem. xi App.
- Cellia pharoensis*, p. 70, pl. v, fig. 1, THEOBALD, 1st Rep. Wellcome Lab.
- Conchyliastes varipes*, Mexico, COQUILLETT, p. 10, Canad. Ent. xxxvi, n. sp.

- Corethra*, mode of colouring living larva, KOLMER (832); *C. rufa* Zett. to *Mochlonyx*, *C. culiciformis* (Th. nec De Geer), synonymy, WAHLGREN, pp. 14, 15, Arkiv Zool. ii, No. 7.
- C. ceratopogones*, Gambia, THEOBALD, p. x, Thompson Yates Lab. Rep. v, Mem. x App.; *C. indica*, Moradabad, GILES, p. 49, J. trop. Medicine vii; *C. karnerensis*, p. 347, *lintneri*, p. 353, New York, FELT, Bull. N. York Mus. No. 79 : **n. spp.**
- Culex annulioris* var. **n. gambiensis**, THEOBALD, p. v, Thompson Yates Lab. Rep. v, Mem. x App.; *C. luteolateralis* varr. **n. pallida** and *albothorax*, THEOBALD, p. ii, op. cit. Mem. xi App.; *C. pëus* **n. n.** for *affinis* Ad., SPEISER, p. 148, Ins. Börse 1904; *C. fuscus* Wied., Asia minor, characters, GILES, p. 384, J. trop. Medicine vii; *C. fuscus*, characters, WAHLGREN, p. 14, Arkiv Zool. ii, No. 7; *C. mimeticus*, habitat, characters, COGGI, pp. 49-52, Bull. Soc. ent. Ital. xxxvi; *C. trichurus* = (*cinereoborealis* Felt), DYAR, p. 244, J. N. York Ent. Soc. xii; *C. punctor* = (*Culex abserratus* Felt & Young, *C. fitchii* and *cantans* queried, DYAR, pp. 245, 246, t. c.; *C. cantans*, life-history, DYAR, pp. 36-38, pl. i, t. c.; *C. mucidus alternans*, life-history, anatomical details, COLLEDGE, P. Soc. Queensland xviii, pp. 67-80, pls. iii-vii; *C. varipalpus*, life-history, DYAR, pp. 90-92, pl. iii, J. N. York Ent. Soc. xii; *C. punctor* and *trichurus*, early stages, pl. ix, pp. 169, 170, notes on various N. American larvæ and their enormous numbers, pp. 172-174, DYAR, J. N. York Ent. Soc. xii; *C. cantans restuans*, *impiger*, larval variation, DYAR & KNAB, pp. 143, 144, P. ent. Soc. Washington vi; *C. dupreei*, larva and pupa, SMITH, p. 49, pl. vii, Ent. News Philad. xv; *C. perturbans*, eggs and young larva, DYAR & CURRIE, pp. 218, 219, cuts, P. ent. Soc. Washington vi; *C. trivittatus*, pl. ix, p. 145, *discolor*, pl. x, p. 147, *aurifer*, pl. xi, p. 148, larvæ, SMITH, Ent. News Philad. xv; *C. territans*, oviposition and eggs, KNAB, pp. 246-248, J. N. York Ent. Soc. xii; *C.*, anatomy, PAZOS Y CABALLERO (1012); *C. pipiens*, movements in swarm, W. SCHUSTER, p. 349, Zool. Garten xlv; *C.* parasitised by a worm, SMITH, pp. 657, 658, Rep. New Jersey exp. Stat. 1903.
- C. pallidocephala*, Nile, p. 73, *dentatus*, Abyssinia, p. 74, pl. vi, fig. 3, THEOBALD, 1st Rep. Wellcome Lab.; *C. anarmostus*, p. vi, *thalassius*, p. vii, *euclastus*, p. viii, Gambia, THEOBALD, Thompson Yates Lab. Rep. v, Mem. x App.; *C. tæniorhynchoides*, Angola, GILES, p. 368, J. trop. Medicine vii; *C. nivitarsus*, *pullatus*, N. America, COQUILLETT, p. 168, P. ent. Soc. Washington vi; *C. dupreei*, N. America, COQUILLETT, p. 10, Canad. Ent. xxxvi; *C. cinereoborealis*, *lazarensis*, *abserratus*, *fitchii*, United States, FELT & YOUNG, p. 312, Science xx; *C. æstivalis*, N. America, DYAR, p. 245, J. N. York Ent. Soc. xii; *C. pretans*, p. 332, *inconspicuus*, p. 333, New Jersey, GROSSBECK, Ent. News Philad. xv; *C. salinarius*, New Jersey, COQUILLETT, p. 73, Ent. News Philad. xv; *C. siphonalis*, New Jersey, GROSSBECK, p. 332, Canad. Ent. xxxvi; *C. onondagensis*, p. 305, *absobrinus*, p. 318, *magnipennis*, p. 322, *abfitchii*, p. 381, New York, FELT, Bull. N. York Mus. No. 79 : **n. spp.**
- Culicada* **n. g.** for numerous *Culex*, FELT, p. 391b, t. c.
- Culicella* **n. g.** type *dyari* Coq., FELT, p. 391c, t. c.
- Culicelsa* **n. g.** type *tæniorhynchus* Wied., FELT, p. 391b, t. c.
- Culiseta* **n. g.** type *absobrinus* Felt, FELT, p. 391c, t. c.
- Danielisia* **n. g.** *Culicina*, THEOBALD, p. 78, *D. albotaniata* **n. sp.**, Kuala Lumpur, LEICESTER, p. 111; Entomologist 1904.
- Desvoidea fusca* var. **n. joloensis**, LUDLOW, p. 236, Canad. Ent. xxxvi.
- Ecculex* **n. g.** type *sylvestris* Theob., FELT, p. 391c, Bull. N. York Mus. No. 79.
- Etorleptomyia* **n. g.** *mediolineata* **n. sp.**, Nile, THEOBALD, p. 71, 1st Rep. Wellcome Lab.

- Finlayia*, modified, to include *Orthopomyia*, GILES, p. 366, J. trop. Medicine vii.
- F. albipes*, hab. ?, *flavipennis*, p. 366, *melanoptera*, p. 367, Philippines, GILES, t. c. **n. spp.**
- Grahamia jamaicensis* in Missouri, larva, pupa, HERRICK, pp. 81-84, pl. viii, Ent. News Philad. xv.
- G. deniedmannii*, Philippines, LUDLOW, p. 234, Canad. Ent. xxxvi, **n. sp.**
- Hodgesia* sp., Philippines, p. 368, cut, GILES, J. trop. Medicine vii.
- Howardina himalayana*, Naini Thal, GILES, p. 384, t. c. **n. sp.**
- Hulecoetomyia* **n. g.** *Culicina*, THEOBALD, *H. trilineata* **n. sp.**, Kuala Lumpur, LEICESTER, p. 165, Entomologist 1904.
- Lasiocnops* **n. g.** near *Culex*, p. viii, *poicilipes* **n. sp.**, West Africa, p. ix, THEOBALD, Thompson Yates Lab. Rep. v, Mem. x App.
- Leicesteria* **n. g.** near *Eretmapodites*, THEOBALD, p. 211, *L. longipalpis* **n. sp.**, Kuala Lumpur, LEICESTER, p. 211, Entomologist 1904.
- Lophoscelomyia* **n. g.** *Anopheina*, THEOBALD, p. 12, *L. asiatica* **n. sp.**, Kuala Lumpur, LEICESTER, p. 13, Entomologist 1904.
- Mansonia uniformis*, pl. vi, fig. 5, p. 76, THEOBALD, 1st Rep. Wellcome Lab.
- Megarhinus rutilus*, *portoricensis*, larvæ, DYAR, p. 20, P. ent. Soc. Washington vi.
- M. lewaldii*, Philippines, LUDLOW, p. 233, Canad. Ent. xxxvi, **n. sp.**
- Mimomyia uniformis*, Nile, THEOBALD, p. 80, 1st Rep. Wellcome Lab. ; *M. chamberlaini*, Philippines, LUDLOW, p. 297, Canad. Ent. xxxvi : **n. spp.**
- Mochlonyx velutinus*, metamorphosis, WIMMER, Rozp. Ceske Ak. Praze ii, xiii, No. 1, pl. 1.
- Myzomyia rossii* var., GILES, p. 1, J. trop. Medicine vii.
- M. nili*, Nile, THEOBALD, p. 66, pl. v, fig. 3, 1st Rep. Wellcome Lab. ; *M. thorntoni*, Philippines, LUDLOW, p. 69, Canad. Ent. xxxvi : **n. spp.**
- Myzorhynchus sinensis*?, larva, GILES, p. 51, J. trop. Medicine vii ; *M. pseudobarbirostris*, correction, LUDLOW, p. 72, Canad. Ent. xxxvi.
- Nyssorhynchus jamesii* and *fuliginosus*, queried as one species, also *N. theobaldi* and *maculipennis*, GILES, p. 22, J. trop. Medicine vii.
- Orthopodomia* **n. g.** near *Finlaya*, THEOBALD, p. 236, *O. albipes* **n. sp.**, Kuala Lumpur, LEICESTER, p. 237 ; Entomologist 1904.
- Protoculex* **n. g.** type *serratus* Theob., FELT, p. 391d, Bull. N. York Mus. No. 79.
- Psorophora ciliata*, larval habits, DYAR, p. 244, J. N. York Ent. Soc. xii.
- Runchomyia philippinensis*, Philippines, GILES, p. 368, J. trop. Medicine vii, **n. sp.**
- Sayomyia rotundifolia*, p. 366, *hudsoni*, p. 371, New York, FELT, Bull. N. York Mus. No. 79, **n. spp.**
- Scutomyia* **n. g.** *Culicina*, *S. albolineata* **n. sp.**, Kuala Lumpur, THEOBALD, p. 77, Entomologist 1904.
- Stegomyia scutellaris* var. *samarensis*, LUDLOW, p. 71, Canad. Ent. xxxvi.
- S. albocephala*, Gambia, THEOBALD, p. iv, Thompson Yates Lab. Rep. v, Mem. x App. ; *S. desmotes*, *leucomeres*, *striocrura*, Philippines, GILES, p. 367, J. trop. Medicine vii : **n. spp.**
- Tæniorhynchus*, revised, species tabulated, GILES, pp. 381-383, J. trop. Medicine vii ; *T.* var. *n. maculipes*, pl. vi, fig. 4, p. 79, THEOBALD, 1st Rep. Wellcome Lab.
- T. cristatus*, Nile, THEOBALD, p. 78, t. c. ; *T. whitmorei*, Philippines, GILES, p. 367, J. trop. Medicine vii ; *T. nigricans*, Panama, p. 166, *signipennis*, Mexico, p. 167, COQUILLETT, P. ent. Soc. Washington vi ; *T. niger*, *antiquæ*, Antigua, GILES, p. 384, J. trop. Medicine vii : **n. spp.**
- Theobaldia spathipalpis*, pl. vi, fig. 1, p. 73, THEOBALD, 1st Rep. Wellcome Lab.

- Toxorhynchites leicesteri*, THEOBALD, p. 36, *metallicus*, LEICESTER, p. 37, Malay States, Entomologist 1904, **n. spp.**
Uranotenia balfouri, Nile, pl. vi, fig. 6, p. 82, THEOBALD, 1st Rep. Wellcome Lab.; *U. nitidoventer*, Philippines, GILES, p. 368, J. trop. Medicine vii: **n. spp.**

PSYCHODIDÆ.

[Cf. EATON (445), WAHLGREN (1463).]

- Clytocybus* **n. g.** for part of *Pericoma*, EATON, p. 59, Ent. Mag. xl.
Logima **n. g.** Type *Psychoda erminea* Eat., EATON, p. 58, t. c.
Pericoma albomaculata, Småland, WAHLGREN, p. 16, Arkiv Zool. ii, No. 7, **n. sp.**
Philosepedon **n. g.** for *P. humeralis* Meig., EATON, p. 57, Ent. Mag. xl.
Phlebotomus and allies, characters, EATON, pp. 55, 56, t. c.
Telmatoscopus **n. g.** for part of *Pericoma*, EATON, p. 58, t. c.
Threticus **n. g.** *T. gemina*, England, *compar*, Britain, Algeria, Madeira, **n. spp.**, EATON, p. 57, t. c.
Xenapates **n. g.** for part of *Pericoma*, EATON, l. c.

TIPULIDÆ and RHYPHIDÆ.

[Cf. DE MEIJERE (934), SNODGRASS (1323), WAHLGREN (1463).]

- Revision of Zetterstedt's types of Scandinavian *Tipulidæ*, WAHLGREN, pp. 1-13, Arkiv Zool. ii, No. 7.
 SNODGRASS describes figures and compares the male genitalia in a large number of N. American *Tipulidæ*, Tr. Amer. ent. Soc. xxx, pp. 179-236, pls. viii-xviii.
Ctenophora ornata and *fluveolata*, habits, GIARD, p. 87, Bull. Soc. ent. France 1904.
Eriocera nigripennis, Java, MEIJERE, p. 92, Bijdr. Dierk. xviii, **n. sp.**
Dicranomyia modesta, egg-masses, GIARD, p. 107, Feuille Natural. xxxiv.
D. aperta, Scandinavia, WAHLGREN, p. 8, Arkiv Zool. ii, No. 7; *D. kobusi*, Java, MEIJERE, p. 91, pl. viii, figg. 5, 6, Bijdr. Dierk. xviii: **n. spp.**
Pachyrhina dorsalis, p. 89, *fallax*, *scurroides*, Java, *dimidiata*, New Guinea, p. 90, pl. viii, fig. 4, MEIJERE, t. c. **n. spp.**
Pselliophora insignis, *nigrithorax*, p. 87, *stigmatica*, p. 88, pl. viii, fig. 1, Java, MEIJERE, t. c. **n. spp.**
Rhipidia pulchra, Java, MEIJERE, p. 92, pl. viii, fig. 7, t. c. **n. sp.**
Rhyphus minor Zett., not valid, WAHLGREN, p. 17, Arkiv Zool. ii, No. 7.
Tipula tibetana, Ta-tsienslu, MEIJERE, p. 89, t. c. **n. sp.**

SIMULIIDÆ.

- Simulium*, criticism of Zetterstedt's species, WAHLGREN, pp. 17-19, Arkiv Zool. ii, No. 7; *S. tephrodes* n. n. for *cinereum* Bell., SPEISER, p. 148, Ins. Börse 1904.
S. notatum, Arizona, ADAMS, p. 434, Kansas Univ. Sci. Bull. ii, **n. sp.**

BIBIONIDÆ.

[Cf. COQUILLETT (313, 315), DE MEIJERE (934).]

- Bibio obscuripennis*, Darjiling, MEIJERE, p. 87, Bijdr. Dierk. xviii, **n. sp.**
Bibiodes **n. g.** *B. halteralis* **n. sp.**, California, COQUILLETT, p. 171, P. ent. Soc. Washington vi.
Dilophus fumosus, *rhynchops*, Nicaragua, COQUILLETT, p. 91, t. c. **n. spp.**
Plecia lugubris, Ta-tsienslu, MEIJERE, p. 86, Bijdr. Dierk. xviii, **n. sp.**

STRATIOMYIIDÆ and SCENOPINIDÆ.

[Cf. ADAMS (8), COQUILLETT (318), HINE (688), DE MEIJERE (934), MELANDER (936).]

Stratiomyidæ, tables of N. American, MELANDER, Canad. Ent. xxxvi, pp. 14-24.

Cyphomyia schæfferi, S. Texas, COQUILLETT, p. 32, J. N. York Ent. Soc. xii, n. sp.

Eudmeta brunnea, Darjiling, MEIJERE, p. 94, pl. viii, fig. 19, Bijdr. Dierk. xviii, n. sp.

Euparyphus obliquus, British Columbia, HINE, p. 87, Canad. Ent. xxxvi, n. sp.

Hermetia fenestrata, Palembang, pl. viii, fig. 9, *læta*, Bengal, p. 93, MEIJERE, Bijdr. Dierk. xviii, n. spp.

Macrosargus texanus, N. America, MELANDER, p. 19, Canad. Ent. xxxvi, n. sp.

Nemotelus abdominalis, *bellulus*, *kansensis*, *trinotatus*, characters, MELANDER, pp. 33, 34, Psyche xi.

Ptecticus tricolor, Java, MEIJERE, p. 95, pl. viii, fig. 11, Bijdr. Dierk. xviii, n. sp.

Rosapha bimaculata, Java, MEIJERE, p. 96, pl. viii, figg. 13, 14, t. c. n. sp.

Scenopinus mirabilis electa, Arizona, ADAMS, p. 445, Kansas Univ. Sci. Bull. ii, n. spp.

TABANIDÆ.

[Cf. ADAMS (8), BRUMPT (136), HINE (689, 691), JOHNSON (765), RICARDO (1172), VILLENEUVE (1459), WHITNEY (1525).]

Revision of *Tabaninæ*, RICARDO, Ann. Nat. Hist. xiv, pp. 349-372.

Tabanidæ of N. America, HINE, pp. 217-249, Ohio Natural. v.

Tabanidæ, *Chrysops* etc., as transmitters of sleeping sickness, BLANCHARD, Arch. parasit. viii, pp. 573-589.

Tabanidæ injurious to stock, N. America, HINE, pp. 57-60, Bull. U. S. Dep. Agric. Ent. xlv, and xlv, pp. 23-25, habits, oviposition.

Chrysops pachycera ♀, ADAMS, p. 442, Kansas Univ. Sci. Bull. ii.

C. lupus, *pikeri*, N. America, WHITNEY, p. 205, Canad. Ent. xxxvi; *C. fulvistigma*, *brimleyi*, N. Carolina, HINE, p. 55, Canad. Ent. xxxvi; *C. coquillettii*, California, HINE, p. 220, Ohio Natural. v : n. spp.

Diachlorus ferrugatus, "yellow-fever fly," BANKS, p. 290, Ent. News Philad. xv.

Dichelacera grandis, Brit. Honduras, RICARDO, p. 371, Ann. Nat. Hist. xiv, n. sp.

Nemorius vitripennis, habits, VILLENEUVE, p. 235, Bull. Soc. ent. France 1904.

Snowiellus n. g. *S. atratus* n. sp., Arizona, HINE, p. 230, Ohio Natural. v.

Tabanus hinei n. n. for *politus* Johns., JOHNSON, p. 15, Psyche xi; *T. 4-punctatus* Wied. to *Theriopectes*, SPEISER, p. 148, Ins. Börse 1904.

T. benedictus, *T. (Theriopectes) typhus*, N. America, WHITNEY, p. 206, Canad. Ent. xxxvi; *T. (Theriopectes) whitneyi*, Massachusetts, JOHNSON, p. 15, Psyche xi; *T. flavidus*, Texas and Mexico, p. 236, *laticeps*, California, *laticornis*, Arizona and Mexico, p. 239, *osburni*, Brit. Columbia, p. 241, *productus*, Wyoming, p. 242, HINE, Ohio Natural. v : n. spp.

Udenocera n. g. *Tabaninæ*, p. 354, for *U. brunneus* n. sp., Ceylon, p. 355, RICARDO, Ann. Nat. Hist. xiv.

LEPTIDÆ, incl. XYLOPHAGIDÆ.

[Cf. ADAMS (8), COQUILLET (315), DE MEIJERE (934), VILLENEUVE (1459).]

Chrysopila simplex, Java, MEIJERE, p. 97, Bijdr. Dierk. xviii; *C. lucifera*, p. 437, *bella*, *flavibarbis*, p. 438, North America, ADAMS, Kansas Univ. Sci. Bull. ii : **n. spp.**

Leptis pluralis, p. 441, *palpalis*, p. 442, Washington, ADAMS, t. c. **n. spp.**

Symphoromyia flavipalpes, Colorado, ADAMS, p. 439, t. c.; *S. securifera*, California, COQUILLET, p. 171, P. ent. Soc. Washington vi : **n. spp.**

Xylophagus nitidus, New Hampshire, ADAMS, p. 435, Kansas Univ. Sci. Bull. ii, **n. sp.**

THEREVIDÆ.

[Cf. ADAMS (8), COQUILLET (313, 315), VILLENEUVE (1459).]

Psilocephala aurantiaca, California, COQUILLET, p. 177, P. ent. Soc. Washington vi; *P. occipitalis*, p. 443, *lateralis*, p. 444, Arizona, ADAMS, Kansas Univ. Sci. Bull. ii; *P. pruinosa*, Nicaragua, COQUILLET, p. 91, P. ent. Soc. Washington vi : **n. spp.**

Thereva, synonymy and variation, VILLENEUVE, pp. 171, 172, Feuille Natural. xxxiv.

T. anomala, Arizona, ADAMS, p. 444, Kansas Univ. Sci. Bull. ii, **n. sp.**

ASILIDÆ, MYDASIDÆ.

[Cf. ADAMS (8), BACK (73), BRÈTHES (175), COQUILLET (315, 318), VILLENEUVE (1459).]

CORTI gives the characters of certain unnamed species of Portuguese *Asilidæ*, Rend. Ist. Lombardo xxxvi, pp. 1071-1073.

Ablautus flavipes, *rubens*, N. America, COQUILLET, p. 178, P. ent. Soc. Washington vi, **n. spp.**

Anisopogon johnsoni, Colorado, BACK, p. 293, Canad. Ent. xxxvi, **n. sp.**

Asilus crabroniformis, habits and egg, XAMBEU, p. 174, Ann. Soc. Linn. Lyon l.

Cyrtopogon nigricolor, *tibialis*, p. 183, *maculosus*, *varipennis*, p. 184, N. America, COQUILLET, P. ent. Soc. Washington vi, **n. spp.**

Dasyllis cinerea, p. 289, *fernaldi*, p. 290, N. America, BACK, Canad. Ent. xxxvi, **n. spp.**

Dioctrodes n. g. near *Dioctria*, *D. flavipes n. sp.*, Missouri, COQUILLET, p. 181, P. ent. Soc. Washington vi.

Dysmachus harpax, France, VILLENEUVE, pp. 167-173, Feuille Natural. xxxiv, **n. sp.**

Erax tuberculata, S. Texas, COQUILLET, p. 34, J. N. York Ent. Soc. xii, **n. sp.**

Holopogon latus, S. Texas, COQUILLET, p. 33, t. c. **n. sp.**

Laphystia flavipes, *limatula*, *opaca*, N. America, COQUILLET, p. 180, P. ent. Soc. Washington vi, **n. spp.**

Leptogaster virgatus, p. 177, *hirtipes*, p. 178, N. America, COQUILLET, t. c.; *L. tornowii*, Buenos Aires, BRÈTHES, p. 337, An. Mus. Buenos Aires xi : **n. spp.**

Metapogon n. g. near *Cyrtopogon*, p. 181, *M. gilvipes*, *punctipennis n. spp.*, N. America, p. 182, COQUILLET, P. ent. Soc. Washington vi.

Mydas abdominalis, Arizona, ADAMS, p. 434, Kansas Univ. Sci. Bull. ii, **n. sp.**

- Myolestes* n. g. near *Allopogon*, p. 338, *A. lynckii* n. sp., Tucuman, p. 339, BRËTHES, An. Mus. Buenos Aires xi.
Ospricerus albifasciatus, Florida, BACK, p. 292, Canad. Ent. xxxvi, n. sp.
Saropogon rufus, p. 290, *albifrons*, p. 291, N. America, BACK, t. c.; *S. luteus*, *hyalinus*, p. 185, *semiustus*, p. 186, California, COQUILLET, P. ent. Soc. Washington vi : n. spp.
Stenopogon and *Scleropogon* distinguished, COQUILLET, p. 179, P. ent. Soc. Washington vi.
S. nigrifolius, California, COQUILLET, t. c.; *S. tenebrosus*, *pumilus*, p. 33, *nitens*, p. 34, S. Texas, COQUILLET, J. N. York Ent. Soc. xii : n. spp.

BOMBYLIIDÆ.

- [Cf. COQUILLET (315, 318), HINE (688), KÜNCKEL (847), VILLENEUVE (1459).]
Acreotrichus atratus, Mexico, COQUILLET, p. 176, P. ent. Soc. Washington vi, n. sp.
Anastoechus nitidulus, localities, JOHNSON, p. 16, Psyche xi.
Anthrax harveyi, British Columbia, HINE, p. 88, Canad. Ent. xxxvi, n. sp.
Phthiria unimaculata, S. Texas, COQUILLET, p. 32, J. N. York Ent. Soc. xii; *P. melanoscuta*, Arizona, *fulvida*, Mexico, p. 172, *marginata*, *vittiventris*, *nubeculosa*, p. 173, *inornata*, *badia*, p. 174, *picturata*, *flaveola*, *amplicella*, p. 175, *bicolor*, p. 176, N. America, COQUILLET, P. ent. Soc. Washington vi : n. spp.
Ploas alpicola, Lautarets, VILLENEUVE, p. 72, Feuille Natural. xxxiv, n. sp.
Systæchus leucophoeus var. n. *gallicus*, VILLENEUVE, p. 72, Feuille Natural. xxxiv.
Systropus; metamorphosis, KÜNCKEL, pp. 1623–1625, C.R. Ac. Sci. cxxxviii.

ACRO CERIDÆ.

- Acrocera fasciata*, habits, JOHNSON, p. 17, Psyche xi.
Oncodes albiventris, Canada, JOHNSON, p. 18, t. c. n. sp.
Opsebius pterodontinus, JOHNSON, p. 16, t. c.

EMPIDÆ.

- [Cf. BEZZI (124, 125).]
 COQUILLET, brief notes on nomenclature of some genera, P. ent. Soc. Washington vi, pp. 51, 52.
Acarterus pallipes, Bombay, BEZZI, p. 335, Ann. Mus. Hungar. ii, n. sp.
Anthepiscopus antipodus, Sydney, BEZZI, p. 339, t. c. n. sp.
Chersodromia lutescens, Sydney, BEZZI, p. 358, t. c. n. sp.
Clinocera (*Wiedemannia*) *microstigma*, Bosnia, BEZZI, p. 201, t. c. n. sp.
Coloboneura argyropalpa, New Guinea, BEZZI, p. 358, t. c. n. sp.
Ctenodrapetis subg. n. cf. *Drapetis*.
Drapetis; catalogue of the genus with the following new names, *distant* (= *divergens* Bezzi), *phæoptera* (= *obscuripennis* Bezzi), BEZZI, pp. 143–146, Wien. ent. Zeit. xxiii.
D. obscuripennis, p. 351, *xanthopyga*, p. 352, *divergens*, *bihamata*, p. 353, *callosotibia*, p. 354, *D. (Ctenodrapetis)* subg. n. p. 351) *gracilis*, p. 354, New Guinea, *discoidalis*, E. India, *ciliatocosta*, Brisbane, p. 355, *rubrithorax*, p. 356, New Guinea, BEZZI, Ann. Mus. Hungar. ii, n. spp.
Elaphropeza spuria, New Guinea, p. 347, *metatarsata*, Ceylon, p. 348, *bicolor*, Paramatta, *basalis*, Ceylon, p. 349, BEZZI, t. c. n. spp.
Empis hilaræformis, p. 340, *cyanescens*, p. 342, N. S. Wales, *ceylonica*, Pattipola, p. 343, *papuana*, New Guinea, p. 344, BEZZI, t. c. n. spp.

- Halsanalotes setifrons*, N. S. Wales, BEZZI, p. 357, t. c. **n. sp.**
Hilara huttoni n. n. for *fulvipes* Hutt., BEZZI, p. 360, t. c.
Hybos bisetosus, E. India, p. 324, *pollinosus*, p. 326, *brachystigma*, p. 327, Australia, BEZZI, t. c. **n. spp.**
Leptopeza pulcherrima, p. 336, *bimaculata*, p. 337, *tachydromiæformis*, p. 338, Australia, BEZZI, t. c. **n. spp.**
Ptilophyllodromia **n. g.** *Hemerodromini*, p. 344, *P. biroi* **n. sp.**, New Guinea, p. 345, BEZZI, t. c.
Rhamphomyia pokornyi, p. 198, *anfractuosa*, p. 199, Australia, *nubigena*, p. 200, *chionopectera*, p. 201, Tyrol, BEZZI, t. c. **n. spp.**
Syndyas parvicellulata, Ceylon and New Guinea, p. 321, *eumera*, New Guinea, p. 323, BEZZI, t. c. **n. spp.**
Syneches bigoti n. n. for *bicolor* Big., BEZZI, p. 360, t. c.
Syneches; *Epiceia*, *Harpamerus* subgen.; characters, p. 329, *S. dichætophorus*, p. 330, *S. (Epiceia) hyalopteris*, p. 331, *minor*, p. 332, *S. (Harpamerus) dinoscelis*, p. 333, New Guinea, BEZZI, t. c. **n. spp.**
Tachydromia (Platypalpus) chionocheata, New Guinea, BEZZI, p. 359, t. c. **n. sp.**

DOLICHOPIDÆ.

[Cf. ALDRICH (21), COQUILLET (315), JOHNSON (765), OLDENBERG (993), ROUBAUD (1200), SNODGRASS (1324), VERRALL (1438).]

Catalogue and tables of British *Dolichopodidæ*, VERRALL, Ent. Mag. xl, pp. 164 etc.

The male genitalia—hypopygium—of numerous genera are described and figured by SNODGRASS, P. Calif. Ac. (3) iii, pp. 273–294, pls. xxx–xxxiii.

Marine larvæ—supposed *Aphrosylus*—commensal with *Balanus*, described, ROUBAUD, pp. 338–340, Bull. Mus. Paris ix.

Agonosoma, *Psilopus* and *Sciapus*, synonymy, ALDRICH, p. 246, Canad. Ent. xxxvi.

Argyra aldrichi, New Jersey, JOHNSON, p. 18, Psyche xi, **n. sp.**

Dolichopus; European catalogued and classified, VERRALL, pp. 241, 242, Ent. Mag. xl; *Dolichopus andalusiacus*, p. 226, *lineaticornis*, p. 227, characters, VERRALL, t. c.

D. laticola, England, VERRALL, p. 197, t. c. **n. sp.**

Psilopodinus (= *Gnamptopsilopus* Aldr.), ALDRICH, p. 247, Canad. Ent. xxxvi.

Saucropus (= *Neurigona*), the European, OLDENBERG, pp. 65–81, pl. i, Zeitschr. Hym. Dipt. iv.

S. cilipes, Macugnaga, p. 71, *lineatus*, Germany, p. 73, id. t. c. **n. spp.**

Sciapus pruinosis, Florida, COQUILLET, p. 186, P. ent. Soc. Washington vi, **n. sp.**

PLATYPEZIDÆ.

Agathomyia, table of European, with distinction of *wankowiczii* and *aurantiaca*, CZERNY, pp. 137–139, Wien. ent. Zeit. xxiii.

SYRPHIDÆ.

[Cf. ADAMS (8), BRÈTHES (329), DE MEIJERE (934, 935), VERRALL (1439), WILLIS & BURKILL (1533).]

Syrphidæ of Normandy, list, PORTEVIN, Feuille Natural. xxxiv, pp. 209–213.

Annotated list of the *Syrphidæ* of British Columbia, 78 species, OSBURN, Canad. Ent. xxxvi, pp. 213 etc.

Syrphidæ and flowers, Clova, WILLIS & BURKILL, Ann. Scott. Nat. Hist. 1904, pp. 166-168.

Baccha bonariensis, Argentina, BRÈTHES, p. 340, An. Mus. Buenos Aires xi, **n. sp.**

Callicera yerburyi, Scotland, VERRALL, p. 229, Ent. Mag. xl, **n. sp.**

Ceria trinitata, Darjiling, MEIJERE, p. 97, Bijdr. Dierk. xviii, **n. sp.**

Helophilus curvigaster Macq., characters, MEIJERE, p. 99, t. c.

Helophilus caudatus, Aru islands, MEIJERE, p. 177, Notes Leyden Mus. xxiv, **n. sp.**

Microdon, the trophi of the larva, HOLMGREN, p. 347, Zool. Anz. xxvii.

M. metallicus, Darjiling, MEIJERE, p. 98, Bijdr. Dierk. xviii, **n. sp.**

Milesia semifulva, Darjiling, MEIJERE, p. 99, pl. viii, fig. 16, t. c. **n. sp.**

Myiatropa florea, larval habits, GIARD, p. 88, Bull. Soc. ent. France 1904.

Nausigaster scutellaris, Arizona, ADAMS, p. 446, Kansas Univ. Sci. Bull. ii, **n. sp.**

Pipiza radicum = (*pistica* Will.), COQUILLETT, p. 200, P. ent. Soc. Washington vi.

Rhingia cincta, Java, MEIJERE, p. 101, Bijdr. Dierk. xviii, **n. sp.**

Sphymorpha snowi, Arizona, ADAMS, p. 447, Kansas Univ. Sci. Bull. ii, **n. sp.**

Syrphus ribesii and others, larvæ, LAMPA, p. 212, pl. figg. 1-6, Ent. Tidskr. xxv; *S. viridiceps*, note, FROGGATT, p. 610, plate, Agric. Gaz. N. S. W. xv.

Volucella; eggs on wasps' nests, BARBER, pp. 70, 71, P. ent. Soc. Washington vi.

V. ursina, Darjiling, MEIJERE, p. 101, Bijdr. Dierk. xviii, **n. sp.**

Xanthandrus comtus, larval habits, CHAPMAN, p. lxx, P. ent. Soc. London 1904.

CONOPIDÆ.

[Cf. COQUILLETT (313), DE MEIJERE (933, 934).]

DE MEIJERE discusses and describes the larvæ and larval habits of several European members of the family and gives a historical account of previous knowledge, also copulation, and eggs, Tidschr. Ent. xlv, pp. 144-225, pls. xiv-xvii.

Affinities of *Conopidæ*, with *Acalyptatræ*, DE MEIJERE, as above.

Conops, *Zodion* and *Myopa*, notes on larvæ, DE MEIJERE, as above; *C. javanicus*, characters, DE MEIJERE, p. 102, Bijdr. Dierk. xviii.

C. pallifrons, Nicaragua and Mexico, COQUILLETT, p. 92, P. ent. Soc. Washington vi, **n. sp.**

Occemyia simillima, Java, DE MEIJERE, p. 103, Bijdr. Dierk. xviii, **n. sp.**

Physcocephala rufipes and *vittata*, larvæ, DE MEIJERE, as above.

Sicus ferrugineus, larvæ and larval habits, DE MEIJERE, as above.

PHORIDÆ and TERMITOXENIIDÆ.

Phora, in nests of ants and *Bombus*, COLLIN, p. xxi, P. ent. Soc. London 1904.

Phora, mining in wings of living butterflies, *Morpho* etc., SCHULZ, Zool. Anz. xxviii, p. 42.

Termitoxenia jägerskiöldi, Soudan, WASMANN, p. 16, Jägerskiöld exp. No. 13, **n. sp.**

CESTRIDÆ.

[Cf. CONDORELLI (305), COQUILLETT (317), GRÜNBERG (641), WARD (1472, 1473).]

Cephenomyia rufibarbis and *Hypoderma diana*, habits, YERBURY, pp. lxvii, lxviii, P. ent. Soc. London 1904.

Cuterebra grisea, Canada, COQUILLETT, p. 11, Canad. Ent. xxxvi, **n. sp.**

Dermatobia hominis, larva, attacks in Costa Rica, WARD (1472, 1473).

Hypoderma bovis attacking man in Sicily, CONDORELLI (305).

Rhinæstrus hippopotami, Cameroons, larva, GRÜNBERG, p. 35, pl., figg. 1, 2, SB. Ges. naturf. Berlin, **n. sp.**

MUSCIDÆ CALYPTRATÆ.

[Cf. AUSTEN (65-67), BECKER (96), BISCHOF (130), BLANCHARD (136), BRUMPT (191, 192), COQUILLETT (313, 314, 315), FROGGATT (564), GILLETTE (605), HUTTON (727, 730), JOHNSON (765), KRAMER (841), LELEAN (873), LESNE (879), DE MEIJERE (934, 935), SAMBON (1205), STEIN (1342, 1343), TOWNSEND (1393), WESCHÉ (1514).]

Classification of *Muscidæ* on palpi, WESCHÉ, Tr. Linn. Soc. London ix, pp. 219 etc., pl. x.

PANDELLE's work on the *Muscidæ* of France is concluded by a catalogue, and by index etc. to Vol. II (1010).

Alophora magnapennis, Canada, JOHNSON, p. 19, Psyche xi, **n. sp.**

Anacamptomyia **n. g.** near *Phorocera*, p. 79, *A. africana* **n. sp.**, Algoa Bay, p. 81, BISCHOF, Verh. Ges. Wien liv.

Anthomyia spreta, larval habits, CHAPMAN, p. xlvi, P. ent. Soc. London 1905.

Antistasea **n. g.** *Blepharipoda*, p. 82, *A. fimbriata* **n. sp.**, Algoa Bay, p. 83, BISCHOF, Verh. Ges. Wien liv.

Aricia flavithorax, p. 416, *venicurva*, p. 417, *latinervis*, p. 419, *flavidicincta*, p. 420, *basicincta*, p. 421, *curvata*, p. 423, *præsuturalis*, p. 424, *mellina*, p. 426, *orbitalis*, p. 427, N. W. S. America, *pulvillata*, Carolina, p. 422, STEIN, Ann. Mus. Hungar. ii, **n. spp.**

Auchmeromyia luteola?, larval habits, CHRISTY, DUTTON & TODD, Brit. Med. J. 1904, ii, pp. 664-666; *A. luteola*, larva as an ectoparasite of man, LELEAN, p. 245, Brit. Med. J. 1904, i.

Bengalia depressa, attacking man, TOWNSEND, pp. 7-9, P. Rhodesia Ass. iv.

Calliphora in Australia, *C. oceanicæ* injurious, FROGGATT, pp. 1205-1211, pl., Agric. Gaz. N. S. W. xv.

C. cockaynei, Campbell isld., HUTTON, p. 155, Tr. N. Zealand Inst. xxxvi, **n. sp.**

Cænosiæ tumidiventris, Java, STEIN, p. 112, Tijdschr. Ent. xlvii; *C. pilosa*, p. 483, *nigrohalterata*, p. 484, *declivis*, p. 486, *vittifera*, p. 487, S. America, *compressa*, N. America, *recedens*, p. 489, *genupuncta*, p. 491, *lineata*, p. 492, S. America, STEIN, Ann. Mus. Hungar. ii: **n. spp.**

Devetia **n. g.** *Phania*, p. 95, *D. atra* **n. sp.**, Algoa Bay, p. 97, BISCHOF, Verh. Ges. Wien liv.

Distichona auriceps, Mexico, COQUILLETT, p. 186, P. ent. Soc. Washington vi, **n. sp.**

Emphermyia **n. g.** near *Cuphocera*, p. 87, *E. atra* **n. sp.**, Rio Grande do Sul, p. 88, BISCHOF, Verh. Ges. Wien liv.

Epalpus bolivianus, *lindigii*, *flavoscutellatus*, p. 90, *semiflavus*, *nattereri*, p. 91, *fuscanipennis*, *callanganus*, p. 92, *semiater*, *brunneipennis*, p. 93, S. America, BISCHOF, t. c. **n. spp.**

- Galopagomyia* **n. g.** for *Microcerella steindachneri* B. & B., and *G. rufo-maculata* Macq., BISCHOF, p. 97, t. c.
- Glossina*, revision of characters and synonymy, AUSTEN, pp. 151-155, Ann. Nat. Hist. xiv; *G. tachinoïdes* Westw. valid, = (*decorsei* Brumpt), BRUMPT, p. 431, C.R. Soc. Biol. lvii; *G.*, larvæ, habits, notes, AUSTEN, Brit. Med. J. 1904, ii, pp. 658-662; *G.* and transmission of disease, SAMBON (1205); *G.* and sleeping-sickness, BLANCHARD & BRUMPT, Arch. parasit. viii, pp. 573-589.
- G. decorsei*, Centr. Africa, BRUMPT, p. 628, C.R. Soc. Biol. lvi, **n. sp.**
- Hæmatobia exigua*, Java, MEIJERE, p. 104, Bijdr. Dierk. xviii, **n. sp.**
- Homalomyia canicularis*, larva in human stomach, FLORENTIN, C.R. Soc. Biol. lvi, p. 525.
- H. flavincta*, p. 453, *hirtifemur*, p. 457, Colombia, STEIN, Ann. Mus. Hungar. ii, **n. spp.**
- Hydrophoria dexiaria*, Colombia, STEIN, p. 475, t. c. **n. sp.**
- Hydrotæa villosa*, Colombia, STEIN, p. 449, t. c. **n. sp.**
- Hylemyia spinilamellata*, Sitka, p. 476, *conosiæformis*, White Mountains, p. 477, STEIN, t. c. **n. spp.**
- Idiella*, notes on Javanese, MEIJERE, p. 105, Bijdr. Dierk. xviii.
- Limnophora chlorogaster*, Big. to *Aricia*, description, STEIN, p. 425, Ann. Mus. Hungar. ii.
- L. prominens*, p. 106, *nigripennis*, p. 108, Java, STEIN, Tijdschr. Ent. xlvii; *L. pauciseta*, p. 460, *marginata*, p. 461, *atrovittata*, p. 463, *compressifrons*, p. 464, *atrisquama*, p. 466, *aterrima*, *atra*, p. 469, S. America, STEIN, Ann. Mus. Hungar. ii : **n. spp.**
- Lispa*, monograph of Palæarctic, with 9 spp. n., BECKER, Zeitschr. Ent. Breslau xxix, pp. 1-70.
- L. bohémica*, p. 53, *brunnica*, p. 40, *cinifera*, p. 41, *cochlearia*, p. 32, *comitata*, p. 34, *flavinervis*, p. 20, *odessæ*, p. 37, *persica*, p. 22, *seticincta*, p. 38, Palæarctic region, BECKER, Zeitschr. Ent. Breslau xxix; *L. sericpalpis*, Java, STEIN, p. 110, Tijdschr. Ent. xlvii : **n. spp.**
- Micropalpus leopoldensis* to *Empheremyia*, BISCHOF, p. 88, Verh. Ges. Wien liv.
- Musca domestica* as disseminator of disease, AUSTEN, J. R. Army Med. Corps June 1904, 16 pp., 1 pl.
- M. modesta*, Java, MEIJERE, p. 106, Bijdr. Dierk. xviii, **n. sp.**
- Myopina appendiculata*, Peru, STEIN, p. 473, Ann. Mus. Hungar. ii, **n. sp.**
- Parachetolyga* **n. g.** near *Chetolyga*, p. 83, *P. metopia* **n. sp.**, Rio Grande do Sul, p. 84, BISCHOF, Verh. Ges. Wien liv.
- Paradidyma orbitalis*, Nicaragua, COQUILLETT, p. 92, P. ent. Soc. Washington vi, **n. sp.**
- Pegomyia cerealis*, Colorado, GILLETTE, p. 14 Bull. Colorado Exp. Stat. 94; *P. bucculenta*, California, COQUILLETT, p. 188, P. ent. Soc. Washington vi : **n. spp.**
- Phorocera aurea*, *exitiosa*, *tecta*, *casta*, p. 151, *inconspicua*, *fulvipes*, *brouni*, p. 152, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxvi, **n. spp.**
- Polychnomyia* **n. g.** near *Podomyia*, p. 85, *P. flavohalterata* **n. sp.**, Algoa Bay, p. 86, BISCHOF, Verh. Ges. Wien liv.
- Pseudoformosia moneta*, note, MEIJERE, p. 103, Bijdr. Dierk. xviii.
- P. pauper*, Halmaheira, MEIJERE, p. 178, Notes Leyden Mus. xxiv, **n. sp.**
- Philogonia* **n. g.** near *Ger maria*, p. 94, *P. neotropica* **n. sp.**, Rio Grande do Sul, p. 95, BISCHOF, Verh. Ges. Wien liv.
- Sarcophaga*, variation of European, genitalia, suggestions for sinking various species, KRAMER, pp. 347-349, Zeitschr. Hym. Dipt. iv.
- S. amblycoryphæ*, Massachusetts, COQUILLETT, p. 187, P. ent. Soc. Washington vi, **n. sp.**
- Schoenomyza guttipennis*, Buenos Ayres, p. 493, *spinicosta*, Peru, p. 495, STEIN, Ann. Mus. Hungar. ii, **n. spp.**

Spilogaster niveipalpis, p. 90, *dimidiata*, p. 100, *lineata*, p. 102, *apicalis*, p. 103, *flavidipennis*, p. 104, *lateralis*, p. 105, Java, STEIN, Tijdschr. Ent. xlvii; *S. inermis*, p. 433, *multomaculata*, p. 434, *latipennis*, p. 435, *tesselata*, p. 438, *geminata*, p. 439, *marginipennis*, p. 440, *apicata*, p. 442, *veniseta*, p. 443, *biseta*, p. 444, *marginalis*, p. 445, *plumata*, p. 446, *fulvisquama*, p. 447, *angustifrons*, p. 448, S. America, STEIN, Ann. Mus. Hungar. ii: **n. spp.**

Tachina psychidivora, W. Australia, COQUILLETT, p. 137, P. ent. Soc. Washington vi, **n. sp.**

Trichopticus spiniger, Colorado, STEIN, p. 428, Ann. Mus. Hungar. ii, **n. sp.**

MUSCIDÆ ACALYPTRATÆ.

[Cf. ADAMS (8–10), BECKER (95), BRÈTHES (175), COQUILLETT (313–315, 317, 318), CZERNY (338, 339), GIARD (599), GUILLIAUME (646), HINE (690), HUTTON (728), KERTÉSZ (789), DE MEIJERE (934), MEUNIER (945), POYNTON (1105).]

Actenoptera **n. n.** for *Gymnomyza* Strobl, CZERNY, p. 202, Wien. ent. Zeit. xxiii.

Agromyza simplex in Europe, GIARD, p. 179, Bull. Soc. ent. France 1904.

A. taniola, California, COQUILLETT, p. 191, P. ent. Soc. Washington vi, **n. sp.**

Anastrepha pallens, S. Texas, COQUILLETT, p. 35, J. N. York Ent. Soc. xii, **n. sp.**

Bischofia varia, Canada, COQUILLETT, p. 12, Canad. Ent. xxxvi, **n. sp.**

Blæsochetophora **n. g.** for *Leria picticornis* Big., transferred to *Drosophilidæ*, CZERNY, p. 206, Wien. ent. Zeit. xxiii.

Carnia virida, Texas, HINE, p. 65, Ohio Natural. iv, **n. sp.**

Chaetoclusia **n. g.** *Heteroneuridæ*, p. 93, for *C. bakeri* **n. sp.**, Nicaragua, p. 94, COQUILLETT, P. ent. Soc. Washington vi.

Chiromyia (*Scyphella*), type, synonymy, BEZZI, pp. 177–181, Atti Mus. Milano xliii.

Chlorops lineata, account, NOEL, p. 190, Naturaliste 1904.

C. pulla, lasciva, p. 303, *rubrivittata, annulata, certima*, p. 304, N. America, ADAMS, Ent. News Philad. xv; *C. capillata*, Georgia and Nicaragua, COQUILLETT, p. 98, P. ent. Soc. Washington vi: **n. spp.**

Clusiodes **n. n.** for *Heteroneura* Fall. 1823, nec Fall. 1810, COQUILLETT, p. 93, P. ent. Soc. Washington vi.

Cremifania **n. g.** *Ochthiphilini*, p. 169, *C. nigrocellulata* **n. sp.**, Austria, p. 170, CZERNY, Wien. ent. Zeit. xxiii.

Dacus diversus, India and Ceylon, COQUILLETT, p. 139, P. ent. Soc. Washington vi, **n. sp.**

Drosomyia **n. g.** near *Drosophila, picta* **n. sp.**, Java, pl. viii, figg. 30, 31, MEIJERE, p. 114, Bijdr. Dierk. xviii.

Drosophila ordinaria, New Hampshire, COQUILLETT, p. 190, P. ent. Soc. Washington vi, **n. sp.**

Dryomyza aristalis Coq. to *Bischofia*, COQUILLETT, p. 12, Canad. Ent. xxxvi.

Elachiptera longula, larval habits, BRITTON, p. 214, Rep. Connecticut exp. Station 1904.

E. bilineata, Arizona, ADAMS, p. 453, Kansas Univ. Bull. ii, **n. sp.**

Eurygnathomyia **n. g.** for *Heteromyza opomyzina* Zett., CZERNY, p. 208, Wien. ent. Zeit. xxiii.

Euxesta juncta, Nicaragua, *fenestrata*, Guatemala, COQUILLETT, p. 95, P. ent. Soc. Washington vi; *E. argentina*, Tucuman, BRÈTHES, p. 342, An. Mus. Buenos Aires xi: **n. spp.**

- Helomyzidæ*, in Wien. ent. Zeit. xxiii, p. 199, CZERNY commences a revision of the family; this portion contains much synonymy for which reference must be made to the work: *H. crimimana* n. n. for *pilimana* Rond. p. 277; *Helomyzidæ* in amber, see Palæoent., p. 125.
- Helomyza setitarsis*, Calabria, p. 234, *flagripes*, Switzerland, p. 235, *stroblui*, Styria, p. 241, *oldenbergii*, Germany, p. 281, CZERNY, Wien. ent. Zeit. xxiii, n. spp.
- Heteromyza opomyzina*, cf. *Eurygnathomyia*.
- Hippelates bilineatus*, Java, MEIJERE, p. 113, pl. viii, figg. 27, 28, Bijdr. Dierk. xviii; *H. splendens*, Wyoming, ADAMS, p. 453, Kansas Univ. Sci. Bull. ii : n. spp.
- Icterica fasciata*, Arizona, ADAMS, p. 449, Kansas Univ. Sci. Bull. ii; *I. apicalis*, Nicaragua, COQUILLET, p. 96, P. ent. Soc. Washington vi : n. spp.
- Lauxania signatifrons*, Texas, COQUILLET, p. 189, P. ent. Soc. Washington vi, n. sp.
- Leria picticornis* Big., cf. *Blæsochætophora*.
- Limnia castanea*, p. 153, *striata*, p. 154, New Zealand, HUTTON, Tr. N. Zealand Inst. xxxvi, n. spp.
- Myrmemorpha rufescens*, Java, MEIJERE, p. 113, Bijdr. Dierk. xviii, n. sp.
- Nerius longicornis*, N. America, COQUILLET, p. 188, P. ent. Soc. Washington vi, n. sp.
- Notiphila frontalis*, Nicaragua, COQUILLET, p. 97, t. c. n. sp.
- Oethophilini*, taxonomy, CZERNY, pp. 167–169, Wien. ent. Zeit. xxiii.
- Opomyza* sp., in profusion in hot spring, POYNTON, p. 170, Tr. N. Zealand Inst. xxxvi.
- Ortalis comperei*, Bangalore, COQUILLET, p. 138, P. ent. Soc. Washington vi, n. sp.
- Parochthiphila* n. g. for *O. coronata* and *inconstans*, CZERNY, p. 169, Wien. ent. Zeit. xxiii.
- Pelethophila* Hag. is *Psila* Meig. 1803, BEZZI, p. 175, Atti Mus. Milano xliii; *P.*, Palæarctic, table, BECKER, pp. 129–133, Zeitschr. Hym. Dipt. iv.
- P. quadrinotata*, Teneriffe, p. 132, *minima*, p. 133, Livland, BECKER, t. c. n. spp.
- Platyparea pæciloptera*, brief note, BIELER, Arch. Sci. Nat. xviii, p. 200; *P. pæciloptera*, natural history, LESNE, pp. 1006–1008, C.R. Soc. Biol. lvi.
- Pseudeurina* n. g. *Chloropinæ*, *maculata* n. sp., Java, pl. viii, figg. 24, 25, MEIJERE, p. 112, Bijdr. Dierk. xviii.
- Psilopa fulvipennis*, Louisiana, HINE, p. 64, Ohio Natural. iv, n. sp.
- Ptilona dunlopi* Wulp to *Rioxa*, MEIJERE, p. 110, Bijdr. Dierk. xviii.
- Rhabdochæta* n. g. near *Ceratitidis*, *R. pulchella* n. sp., Java, pl. viii, figg. 22, 23, MEIJERE, p. 109, t. c.
- Rhagoletis cingulata*, natural history, CHITTENDEN, pp. 70–75, cuts, Bull. U. S. Dep. Agric. Ent. xlv.
- Rivellia frugalis*, Ceylon, *sinuosa*, India, COQUILLET, p. 139, P. ent. Soc. Washington vi, n. spp.
- Sapromyza obscura*, Java, MEIJERE, p. 111, Bijdr. Dierk. xviii; *S. varia*, *albipes*, p. 94, *triseriata*, p. 95, Nicaragua, COQUILLET, P. ent. Soc. Washington vi; *S. picticornis*, Nicaragua, COQUILLET, p. 189, t. c. : n. spp.
- Scutops* n. g. near *Opomyza*, *S. fascipennis* n. sp., Nicaragua, COQUILLET, p. 97, t. c.
- Scyphella pumilio*, Java, MEIJERE, p. 113, pl. viii, fig. 29, Bijdr. Dierk. xviii, n. sp.
- Sepsis javanica*, Java, MEIJERE, p. 107, t. c.; *S. pleuralis*, S. Texas, COQUILLET, p. 35, J. N. York Ent. Soc. xii : n. spp.
- Sinophthalmus* n. g. *Geomyzidæ*, p. 190, *S. pictus* n. sp., California, p. 191, COQUILLET, P. ent. Soc. Washington vi.

- Siphonella nigrirostra*, Grenada, p. 103, *parva*, *quinquelineata*, p. 104, U. S., ADAMS, Psyche xi, **n. spp.**
Tephritis dioscurea, larval habits, TROTTER, p. 5, Marcellia iii.
Tetanocera inops, Washington, ADAMS, p. 448, Kansas Univ. Sci. Bull. ii, **n. sp.**
Trypeta solidaginis, metamorphosis, FIELD, p. 309, Ent. News Philad. xv.
Trypetidæ of Belgium, 42 spp., catalogue, GUILLIAUME (646).
Turriger n. g. Sapromyzides, p. 73, *T. frontalis n. sp.*, E. India, p. 74, KERTÉSZ, Ann. Mus. Hungar. ii.
Urellia flava, *conjuncta*, p. 451, *occidentalis*, p. 452, N. America, ADAMS, Kansas Univ. Sci. Bull. ii, **n. spp.**
Xenaspis vespoides, Darjiling, MEIJERE, p. 107, Bijdr. Dierk. xviii, **n. sp.**
Zygenula albofasciata, India, MEIJERE, p. 108, pl. viii, fig. 21, t. c. **n. sp.**

DIPTERA, PUPIPARA (incl. STREBLIDÆ).

[Cf. RAINBOW (1117), REED (1123), SPEISER (1328-1331).]

- The affinities of *Streblidæ*, and characters of *Trichobius major*, BRUES, pp. 131-134, cuts, Bull. Amer. Mus. xx.
Braula cæca, note on habits, DE MEIJERE, p. 139, Ent. Ber. Nederland. i.
Craterhina pallida Oliv.=(*lonchoptera* Olf.), SPEISER, p. 389, Ann. Mus. Hungar. ii.
Hippobosca longipennis, characters, p. 332, *fossulata*, characters and locality, p. 333, *H. rufipes*=(*albonotata* Rond.), p. 334, SPEISER, Ann. Mus. Genova xli.
Lipoptena depressa Say=(*mazamæ* Rond.); SPEISER, p. 334, t. c.
L. chalcamelæna, Sinai on *Capra*, SPEISER, p. 178, Zeitschr. Hym. Dipt. iv, **n. sp.**
Lynchia similima (=Olf. *spinifera* Wulp 1880 nec Leach), Java, SPEISER, p. 337, Ann. Mus. Genova xli, **n. sp.**
Myiophthiria reduvioides=(*capsoides* Rond.), SPEISER, p. 349, t. c.
Nycteribia pteropus, Carpentaria, RAINBOW, p. 78, Rec. Austral. Mus. v, **n. sp.**
Olfersia longipalpis, characters, =(*longirostris* Wulp), SPEISER, p. 88, Zeitschr. Hym. Dipt. iv; *O. ænescens* Thoms. to *Pseudolfersia*, p. 83, SPEISER, t. c.
O. acromialis, p. 386, *dioxyrhina*, p. 387, New Guinea, SPEISER, Ann. Mus. Hungar. ii; *O. chalcotampæra*, New Guinea, SPEISER, p. 335, Ann. Mus. Genova xli : **n. spp.**
Ornithesza odontoscelis, Hungary, on *Saxicola*, SPEISER, p. 392, Ann. Mus. Hungar. ii; *O. pallipes*, Europe, on *Strix*, SPEISER, p. 177, Zeitschr. Hym. Dipt. iv : **n. spp.**
Ornithoctona; variability and synonymic difficulties, pp. 339-343, *O. bellardiana*, p. 344, *australasice*, p. 345, characters, SPEISER, Ann. Mus. Genova xli; *O. erythrocephala* Leach=(*Ornithomyia gemina* Thoms.), SPEISER, p. 82, Zeitschr. Hym. Dipt. iv.
O. vitrina, Tonga islds., p. 343, *melæna*, Sumatra, p. 347, SPEISER, Ann. Mus. Genova xli, **n. spp.**
Ornithoea stipituri Schin. (as *Ornithomyia*)=(*distenta* Speiser), SPEISER, p. 86, Zeitschr. Hym. Dipt. iv.
Ornithomyia obscurata Walk., characters, SPEISER, p. 347, Ann. Mus. Genova xli; *O. fringillina* Curt.=(*ptenoletis* Löw.), p. 83, *O. fur* Schin., characters, p. 85, *O. pusilla* Schin. to *Ornithoea*, localities, pp. 86, 87, *O. avicularia*=(*nigricornis* Er.), p. 87, SPEISER, Zeitschr. Hym. Dipt. iv; *O. brunnea* Oliv. to *Lynchia*, SPEISER, p. 388, Ann. Mus. Hungar. ii.

- O. chilensis*, Concepcion, REED, p. 152, Revist. chilena viii, **n. sp.**
Ornithopertha nitens and *geniculata* Big., distinguished, SPEISER, p. 394, Ann. Mus. Hungar. ii.
O. anthracina, Honduras, SPEISER, p. 393, t. c. **n. sp.**
Ortholfersia macleayi, classified and described, SPEISER, p. 390, t. c. **n. sp.**
Pseudolfersia Leach var. = (*Olfersia sulcifrons* Thoms.), SPEISER, p. 82, Zeitschr. Hym. Dipt. iv.
Stilbometopa podopostyla, Rio Grande do Sul, SPEISER, p. 394, Ann. Mus. Hungar. ii, **n. sp.**

APHANIPTERA, (or SIPHONAPTERA).

- [Cf. BAKER (76), KOHAUT (824, 825), OLIVIER (995), RAINBOW (1116), ROTHSCHILD (1191-1193), SEMENOW (1277), TIRABOSCHI (1387, 1388).]
- The systematic position and classification of *Aphaniptera* (in Russian), SEMENOW, p. 277-288, Rev. Russe Ent. 1904.
- BAKER catalogues the family, and revises the American forms, P. U. S. Mus. xxvii, pp. 365-469, pls. x-xxvi.
- Article on *Aphaniptera*, in connection with plague, TIRABOSCHI, Arch. parasit. viii, pp. 205-310.
- Fleas on rats, TIRABOSCHI (1388).
- Anomiopsyllus n. g.* for *Typhlopsylla nudata* Bak., BAKER, p. 425, P. U. S. Mus. xxvii.
- Ceratophyllus italicus*, Italy, on rats, TIRABOSCHI, p. 266, cuts, Arch. parasit. viii; *C. henleyi*, Egypt, ROTHSCHILD, p. 3, Entomologist 1904; *C. hilli*, Sydney, p. 622, pl. xi, figg. 43, 44, *woodwardi*, W. Australia, p. 623, pl. x, fig. 41, and xi, fig. 42, *thomasi*, Australia, p. 625, pl. xi, figg. 45, 48, *zethi*, Gippsland, p. 626, pl. xi, fig. 50, and xii, fig. 52, *ochi*, Victoria, p. 628, pl. xi, fig. 49, and xii, fig. 54, *novæguineæ*, New Guinea, p. 629, pl. xiii, figg. 66, 67, *ahalcæ*, p. 631, pl. xi, fig. 51, xii, fig. 55, and xiii, fig. 60, *alladinis*, p. 632, pl. xii, fig. 53, India, *endymionis*, Chile, p. 634, pl. xiv, fig. 70, *agrippinæ*, p. 634, pl. xii, figg. 56, 57, and xiii, figg. 62, 64, *dorippæ*, p. 636, *numæ*, p. 637, pl. xii, fig. 58, and xiii, figg. 59, 63, 65, *octavii*, p. 638, pl. xiii, fig. 61, Cape Colony, ROTHSCHILD, Nov. Zool. xi; *C. dentatus*, Idaho, on *Lynx*, p. 390, *perpinnatus*, Queen Charlotte islds., p. 391, *tuberculatus*, Idaho, on *Citellus*, p. 393, *alaskensis*, Alaska, on *Citellus*, p. 394, *californicus*, California, p. 395, *oculatus*, Washington, p. 396, *ciliatus*, California, p. 397, *pseudarctomys*, New York, p. 399, *leucopus*, New York, on *Peromys*, p. 401, *labiatus*, Idaho, on *Lynx*, p. 402, *sexdentatus*, California on *Neotoma*, p. 403, *wagneri*, Idaho, on *Peromyscus*, p. 405, *asio*, Massachusetts, on *Megascops*, p. 406, *canadensis*, Ottawa, p. 407, *vison*, New York, on *Putorius*, p. 408, *lucidus*, Colorado, p. 410, *arctomys*, New York, p. 411, *proximus*, California, p. 412, *idahoensis*, Idaho, p. 413, *petiolatus*, Idaho, on *Lynx*, *eremicus*, Arizona, on *Peromyscus*, *stylosus*, Oregon, on *Aplodontia*, BAKER, P. U. S. Mus. xxvii : **n. spp.**
- Ceratopsylla palposus*, Brit. Columbia, p. 652, ROTHSCHILD, Nov. Zool. xi; *C. wolffsohni*, Paraguay, ROTHSCHILD, p. 147, Revist. chilena viii : **n. spp.**
- Chætopsylla mikado*, Japan, ROTHSCHILD, p. 645, pl. xiv, fig. 76, Nov. Zool. xi, **n. sp.**
- Ctenocephalus serraticeps* var. *murina*, TIRABOSCHI, p. 259, cut p. 260, Arch. parasit. viii.
- Ctenophthalmus pseudagyrtes*, characters, p. 641, pl. xiv, figg. 73, 78, and xv, fig. 81, ROTHSCHILD, Nov. Zool. xi.

- C. pseudagyrtes*, p. 421, *yenalis*, p. 424, N. America, BAKER, P. U. S. Mus. xxvii; *C. wenmanni*, British Columbia, p. 642, pl. xiv, figg. 75, 77, 79, *antiquorum*, Brazil, p. 643, pl. xiv, fig. 72, and xv, figg. 80, 82, ROTHSCILD, Nov. Zool. xi : **n. spp.**
- Ctenopsyllus granti*, British Columbia, p. 646, pl. xv, figg. 84, 87, and xvii, fig. 91, *aganippes*, Cape Colony, p. 647, pl. xv, fig. 83, and xvi, fig. 90, *brooksi*, British Columbia, p. 649, pl. xv, figg. 86, 88, and xvi, fig. 89, *hygini*, Canada, p. 650, pl. xv, fig. 85, and xvi, figg. 93, 94, *hyrtaci*, British Columbia, p. 652, pl. xvi, figg. 92, 95, ROTHSCILD, t. c.; *C. hesperomys*, New Hampshire, BAKER, p. 428, P. U. S. Mus. xxvii : **n. spp.**
- Lycopsylla n. g.* near *Pulex*, *L. novus n. sp.*, N. S. Wales, pl. vii, figg. 1-4, ROTHSCILD, p. 602, Nov. Zool. xi.
- Malacopsylla* = (*Megapsylla* Baker), ROTHSCILD, p. 603, t. c.
- M. androcli*, Brazil, p. 604, pl. vii, fig. 10 and viii, figg. 11-15, *agenoris*, Argentina, p. 606, pl. vii, figg. 5-9, and viii, fig. 13, ROTHSCILD, t. c. **n. spp.**
- Pulex irritans, simulans*, ? identical, WEBSTER, p. 244, Canad. Ent. xxxvi.
- P. murinus*, Italy on rats (? = *cheopis* Rothschild), TIRABOSCHI, p. 252, cut, p. 251, Arch. parasit. viii; *P. mycerini*, p. 1, *ramesis, pyramidis*, p. 3, Egypt, ROTHSCILD, Entomologist 1904; *P. creusæ*, p. 608, pl. viii, fig. 18, and ix, fig. 25, *erilli*, p. 610, pl. viii, figg. 16, 17, and ix, fig. 22, *eridos*, p. 611, pl. viii, fig. 21, and ix, fig. 23, *riggenbachi*, p. 611, pl. viii, figg. 19, 20, and ix, fig. 24, Cape Colony, *australis*, Mexico and S. America, p. 613, pl. ix, fig. 29, and x, figg. 34, 36, *cleophontis*, Buenos Aires, p. 614, pl. x, fig. 32, *concitus*, p. 615, pl. x, figg. 38, 40; *simonsi*, p. 616, pl. ix, fig. 30, and x, fig. 37, Bolivia, *cocyti*, p. 617, pl. ix, fig. 26, and x, fig. 31, *corfidii*, p. 619, pl. ix, fig. 27, and x, fig. 33, Chile, *klagesi*, Venezuela, p. 620, pl. ix, fig. 28, and x, figg. 35, 39, ROTHSCILD, Nov. Zool. xi; *P. brasiliensis*, on *Mus*, p. 379, *lutzii*, on *Grisson*, p. 380, S. America, *anomalus*, Colorado, p. 381, *affinis*, Arizona on *Lepus*, p. 382, *lynx*, Idaho on *Lynx*, p. 383, BAKER, P. U. S. Mus. xxvii : **n. spp.**
- Sarcopsylla rhynchopsylla*, Italy, on rats, TIRABOSCHI, p. 309, Arch. parasit. viii, **n. sp.**
- Stephanocircus* and *Hystrichopsylla*, distinguished, species of *S.*, synonymy of species found on *Dasyurus maculatus*, RAINBOW, pp. 53-55, Rec. Austral. Mus. v.
- Typhloceras rosenbergi*, Ecuador, p. 639, pl. xiii, figg. 68, 69, and xiv, figg. 71, 74, ROTHSCILD, Nov. Zool. xi, **n. sp.**
- Typhlopsylla tristis* to *Ceratophyllus*, p. 625, pl. xi, figg. 45, 47, ROTHSCILD, t. c.
- T. monticola*, Bosnia, KOHAUT, p. 87, Ann. Mus. Hungar. ii, **n. sp.**; also p. 88, Allatt. Kozl. Magyar Tars. iii.
- Xestopsylla n. g.* for *Sarcopsylla gallinacea*, BAKER, p. 374, P. U. S. Mus. xxvii.

(E.) *HEMIPTERA* OR *RHYNCHOTA*.

The trophi, classification, 2 new suborders, *Sandaliorrhyncha* fossil, *Conorrhyncha* for *Thaumatoxena*, BÖRNER (157).

Conorrhyncha n. suborder for the following :

Thaumatoxena n. g. (?), *T. wasmanni* n. sp., Natal with *Termes natalensis*, BREDDIN & BÖRNER, pp. 84-94, SB. Ges. naturf. Berlin 1904.

Cimex : the type of, KIRKALDY & W. T. B., Nature lxi, pp. 464, 465.

KIRKALDY proposes 77 new generic names, and gives a list of others not included in Scudder or Waterhouse ; Entomologist 1904, pp. 279-283.

New *Paleohemiptera*, Permian, Russia, see HANDLIRSCH, Palæoentomology, p. 125.

Alaska *Heteroptera*, reprint, HEIDEMANN (672).

Effect of stink of *Hemiptera*, CONRADI (306).

Notes on habits and young of 15 species, XAMBEU (1539).

HEMIPTERA-HETEROPTERA.

PENTATOMIDÆ.

[Cf. BERGROTH (102, 105), BREDDIN (165, 167, 168, 169, 171), DISTANT (388, 390), HORVÁTH (715, 717), JAKOVLEFF (754, 755, 757), MARTIN (918), REUTER (1163), SCHOUTEDEN (1235-1239), VAN DUZEE (1430).]

The genera of *Scutellerinæ* with lists of the species, SCHOUTEDEN, Scutellerinæ, Wytsman Gen. Ins. fasc. xxiv, 98 pp., 5 plates.

Annotated list of *Pentatomidæ* of America north of Mexico, and descriptions of 12 spp. n., VAN DUZEE, Tr. Amer. ent. Soc. xxx, pp. 1-80.

Damellera n. n. for *Damelia*, *Montandoneus* n. n. for *Gabonia*, *Atelias* n. n. for *Ætius*, *Texas* n. n. for *Melanostoma*, *Grimgerdu* n. n. for *Macrothyreus*, *Menuthias* n. n. for *Ilerda* ; *Bergthora* n. n. for *Cryptoporus*, *Xosa* n. n. for *Anubis*, *Acanthidiellum* n. n. for *Acanthidium*, *Stictocoris* n. n. for *Stictonotus*, *Liodermion* n. n. for *Lioderma*, *Gueriniellus* n. n. for *Platycoris*, *Burma* n. n. for *Paramecus*, *Eupododus* n. n. for *Pododus*, *Ochisme* n. n. for *Trachyops*, *Dolichisme* n. n. for *Petrisia*, KIRKALDY, p. 280, Entomologist 1904.

Acanthosoma cruciata var. n. *cooleyi*, VAN DUZEE, p. 74, Tr. Amer. ent. Soc. xxx.

A. korolkovi, Manchuria, JAKOVLEFF, Rev. russe Ent. 1904 ; *A. atricornis*, Montreal, VAN DUZEE, p. 75, Tr. Amer. ent. Soc. xxx : n. spp.

Afraniella n. g. near *Afrania*, for *A. lambaremi* n. sp., Congo, SCHOUTEDEN, p. 137, Ann. Soc. ent. Belgique xlviii.

Agonoscelis versicolor var. n. *tibialis*, HORVÁTH, p. 261, table of African *Ag.* p. 262, Ann. Mus. Hungar. ii.

A. cognata, E. Africa, HORVÁTH, p. 260, t. c. n. sp.

Alamprella n. g. near *Geotomus*, *A. singularis* n. sp., Guinea, HORVÁTH, p. 354, t. c.

Antestia philippina n. n. for *confusa* Br., BREDDIN, p. 10, Wien. ent. Zeit. xxiii.

A. gibba, New Guinea, BREDDIN, p. 10, t. c. n. sp.

- Asaca punctiventris*, Tonkin, BREDDIN, p. 10, t. c. **n. sp.**
Aspavia escaleraei, Cameroons, SCHOUTEDEN, p. 157, Mem. Soc. Espan. i, **n. sp.**
Aspideurus metallicus, Java, BREDDIN, p. 10, Wien. ent. Zeit. xxiii, **n. sp.**
Atelides sumatranus, Sumatra, BREDDIN, p. 18, t. c. **n. sp.**
Aspongopus viduatus, "melon-bug," plate B, p. 43, BALFOUR, 1st Rep. Wellcome Lab.
Basicryptus nigromaculatus, E. Africa, SCHOUTEDEN, p. 141, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Bathycalia nesophila, malachitica, St. Thomé isld., HORVÁTH, p. 268, Ann. Mus. Hungar. ii, **n. spp.**
Bergrothina **n. g.** *Pentat.*, *camerunensis* **n. sp.**, W. Africa, SCHOUTEDEN, p. 155, Mem. Soc. espan. i.
Brachyaulax oblonga var. *n. splendens*, SCHOUTEDEN, p. 297, Ann. Soc. ent. Belgique xlviii.
Brachyplatys rubromaculatus, Guinea, SCHOUTEDEN, p. 142, Mem. Soc. espan. i, **n. sp.**
Brachyrhamphus haglundii, Cameroons, SCHOUTEDEN, p. 151, t. c. **n. sp.**
Brachystethus coxalis, Peru, Chiriqui, BREDDIN, p. 178, Soc. ent. xviii, **n. sp.**
Brepholoxa **n. g.** near *Liotropis*, *B. heidemanni* **n. sp.**, Florida, VAN DUZEE, p. 78, Tr. Amer. ent. Soc. xxx.
Brochymena affinis, California, VAN DUZEE, p. 29, t. c. **n. sp.**
Callidea haglundii, Trop. Africa, p. 42, SCHOUTEDEN, Rhynch. æthiop. **n. sp.**
Calliscyta australis, SCHOUTEDEN, p. 296, Ann. Soc. ent. Belgique xlviii.
Carbula teretipes, Madagascar, HORVÁTH, p. 260, Ann. Mus. Hungar. ii, **n. sp.**
Caura excelsa var. *n. limbata*, HORVÁTH, p. 257, t. c. ; *C. excelsa* = (*insignis* Schout.), SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii.
Chelysoma glirina, Brazil, BERGROTH, p. 354, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Chilocoris assmuthi, p. 407, *solenopsidis*, p. 408, India, myrmecophilous, BREDDIN, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Chipatula agilis, E. Africa, SCHOUTEDEN, p. 135, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Cocalus assimilis, E. Africa, HORVÁTH, p. 257, Ann. Mus. Hungar. ii, **n. sp.**
Cocquerelia ventralis, Madagascar, HORVÁTH, p. 263, t. c. **n. sp.**
Corimelaena sayi **n. n.** for *albipennis* Say, VAN DUZEE, p. 10, Tr. Amer. ent. Soc. xxx.
C. gillettii, New Jersey, VAN DUZEE, p. 8, t. c. ; *C. major*, Brazil, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
Dalcantha angularis, Sumatra, p. 18, *alata*, Tonkin, p. 19, BREDDIN, Wien. ent. Zeit. xxiii, **n. spp.**
Dalpada perelegans, Tonkin, BREDDIN, p. 1, t. c. **n. sp.**
Dalsira brunni, Cameroons, SCHOUTEDEN, p. 142, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Dandinus **n. g.** near *Æschrus*, p. 264, for *D. crassus* **n. sp.**, N. Queensland, p. 265, DISTANT, Ann. Nat. Hist. xiii.
Deroplax circumducta varr. and synonymy, SCHOUTEDEN, p. 301, Ann. Soc. ent. Belgique xlviii.
Discocephala andina, Ecuador, BREDDIN, p. 58, Soc. ent. xix, **n. sp.**
Dolycoris penicillatus, Turkestan, HORVÁTH, p. 580, Ann. Mus. Hungar. ii, **n. sp.**
Dystus villosus, Bolivia, BREDDIN, p. 153, Soc. ent. xviii, **n. sp.**
Edessa suturata var. *n. subandina*, p. 135, *E. oxyacantha*, p. 138, *quadridens*, p. 140, *infulata*, p. 143, *metata*, p. 145, *meditabunda*, p. 152, sex characters, BREDDIN, SB. Ges. naturf. Berlin 1904.
E. schirmeri, *pachyacantha*, p. 136, *leptacantha*, p. 139, *brachyacantha*,

- p. 140, *bærneri*, p. 141, *handlirschi*, p. 142, *leprosula*, p. 144, *boopis*, p. 146, *keymonsi*, p. 147, *verhoeffi*, *perscita*, p. 149, *capito*, p. 151, *cogitabunda*, p. 153, S. America, BREDDIN, t. c.; *E. infulata*, Peru, *oxyacantha*, Bolivia, BREDDIN, p. 50, Soc. ent. xix; *E. vernicosa*, *hædulus*, Ecuador, *hirculus*, Bolivia, BREDDIN, t. c. p. 178 : **n. sp.**
- Elvisura minor*, Trop. Africa, SCHOUTEDEN, Rhynch. æthiop. p. 6, **sp. n.**
- Empysarus n. g.* *Tesseratominae*, p. 315, *E. depressus n. sp.*, S. India, p. 316, MARTIN, Bull. Mus. Paris 1904.
- Epicoleotichus subg. n.* of *Coleotichus*, SCHOUTEDEN, p. 6, *Scutellerinae*.
- Eucenaria n. g.* near *Ænaria*, *E. jucunda n. sp.*, Tonkin, BREDDIN, p. 2, Wien. ent. Zeit. xxiii.
- Eumecopus abdominalis*, p. 263, *pallescens*, p. 264, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, **n. spp.**
- Eurinome armata*, N. Guinea, BREDDIN, p. 4, Wien. ent. Zeit. xxiii, **n. sp.**
- Eurostus heros*, Tonkin, BREDDIN, p. 16, t. c. **n. sp.**
- Eurygaster carinatus*, Utah, VAN DUZEE, p. 18, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Eusarcoris gibbosus*, Corea, JAKOVLEFF, p. 23, Rev. Russe Ent. iv; *E. V-flavum*, Madagascar, HORVÁTH, p. 259, Ann. Mus. Hungar. ii : **n. spp.**
- Eusthenes diomedes*, Tonkin, BREDDIN, p. 15, Wien. ent. Zeit. xxiii, **n. sp.**
- Exithemus mansonicus*, Tonkin, BREDDIN, p. 6, t. c. **n. sp.**
- Fokkeria n. g.* *Scutellerides*, *F. crassa n. sp.*, N. America, SCHOUTEDEN, p. 301, Ann. Soc. ent. Belgique xlvi.
- Galeacius martini*, Minas Geraes, SCHOUTEDEN, p. 299, t. c.; *G. simplex*, Peru, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
- Gastroxys n. g.* near *Diploxys*, p. 257, *G. funerea n. sp.*, E. Africa, p. 258, HORVÁTH, Ann. Mus. Hungar. ii.
- Geomorpha junodi*, Transvaal, DISTANT, p. 350, Ann. Nat. Hist. xiii, **n. sp.**
- Glypsus carinulatus*, Soudan, BERGROTH, p. 32, Rev. Russe Ent. iv; *G. bouvieri*, Congo, p. 140, *kuhlgatzi*, Africa, p. 141, SCHOUTEDEN, Ann. Soc. ent. Belgique xlvi : **n. spp.**
- Gnathoconus elongatus*, Transvaal, DISTANT, p. 349, Ann. Nat. Hist. xiii, **n. sp.**
- Gonaulax n. g.* p. 57, *G. bergrothi n. sp.*, Usambara, p. 59, pl. i, fig. 8, SCHOUTEDEN, Rhynch. æthiop.
- Gonopsis tonkinensis*, Tonkin, BREDDIN, p. 19, Wien. ent. Zeit. xxiii, **n. sp.**
- Haullevillea n. g.* near *Amauropepla*, *H. denticulata n. sp.*, Trop. Africa, SCHOUTEDEN, p. 126, Rhynch. æthiop.
- Iphiarusa n. g.* near *Hoffmannseggella*, p. 12, *I. aratrix n. sp.*, Tonkin, p. 13, BREDDIN, Wien. ent. Zeit. xxiii.
- Irochrotus montandoni*, Senegal, p. 88, SCHOUTEDEN, Rhynch. æthiop.; *I. indicus*, Bengal, SCHOUTEDEN, p. 303, Ann. Soc. ent. Belgique xlvi : **n. spp.**
- Kayesia n. g.* near *Podops*, *K. parva n. sp.*, Soudan, SCHOUTEDEN, p. 114, Rhynch. æthiop.
- Laccophorella n. g.* *Acanthosominae*, *L. bornemisæ n. sp.*, E. Africa, HORVÁTH, p. 270, Ann. Mus. Hungar. ii.
- Lerida bolivari*, Guinea, SCHOUTEDEN, p. 146, Mem. Soc. espan. i, **n. sp.**
- Lincus securiger*, *dentiger*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. spp.**
- Lobopelta n. g.* *Phyllocephalinae*, p. 142, for *L. funebris n. sp.*, Congo, p. 143, SCHOUTEDEN, Ann. Soc. ent. Belgique xlvi.
- Lobothyreus brasiliensis*, Brazil, SCHOUTEDEN, p. 300, t. c. **n. sp.**
- Macroscyrtus inermipes*, St. Thomé isld., HORVÁTH, p. 253, Ann. Mus. Hungar. ii, **n. sp.**
- Malgassus exiguus*, Madagascar, HORVÁTH, p. 269, t. c. **n. sp.**
- Megadæum*, characters and position, BERGROTH, p. 37, Wien. ent. Zeit. xxiii.
- M. obliquum*, Cameroons, id. p. 39, t. c. **n. sp.**

- Melanodermus dilutipes*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. sp.**
Miopygium n. g. near *Macropygium*, *M. cyclopeltoides n. sp.*, Rio Grande do Sul, BREDDIN, p. 153, t. c.
Montandoniella n. g. Plataspidinæ, femorata n. sp., Guinea, SCHOUTEDEN, p. 144, Mem. Soc. Espan. i.
Morbora hirtula, Tasmania, *schoutedeni*, Queensland, BERGROTH, p. 356, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Moyara martini, Uganda, SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Nealeria diminuta, Madagascar, HORVÁTH, p. 255, Ann. Mus. Hungar. ii, **n. sp.**
Nezara bergrothi, p. 263, *liturata, valida*, p. 264, Madagascar, *limbosa*, p. 265, *adelpha, macrorhaphis*, p. 266, W. Africa, *rufidorsum*, Madagascar, p. 267, HORVÁTH, t. c. **n. spp.**
Ochrorrhaca n. g. near *Ochrophara*, *O. truncaticornis n. sp.*, Tonkin, BREDDIN, p. 3, Wien. ent. Zeit. xxiii.
Odontoscelis balli, p. 19, *producta*, p. 20, Colorado, VAN DUZEE, Tr. Amer. ent. Soc. xxx, **n. spp.**
Oncinoproctus n. g. near *Eurinome*, *O. griseolus n. sp.*, Sikkim, BREDDIN, p. 5, Wien. ent. Zeit. xxiii.
Oncodochilus cruciatulus, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**
Oplomus cruentus var. *n. inermis*, SCHOUTEDEN, p. 140, Ann. Soc. ent. Belgique xlviii.
O. sagax, Bolivia, BREDDIN, p. 49, Soc. ent. xix; *O. severus*, Peru, BREDDIN, p. 177, t. c. **n. spp.**
Palomena limbata, Koukou-noor, JAKOWLEW, p. 71, Horae Soc. ent. Ross. xxxvii, **n. sp.**
Parabolbocoris n. g. Graphosomatinae, P. signoreti n. sp., Bogos, SCHOUTEDEN, p. 106, Rhynch. æthiop.
Paracoleotichus subg. *n. of Coleotichus*, SCHOUTEDEN, p. 6, Scutellerinæ.
Parapæcilocoris subg. *n.*, SCHOUTEDEN, p. 21, t. c.
Parochlerus n. g. near *Ochlerus*, *P. latus n. sp.*, Peru, BREDDIN, p. 153, Soc. ent. xviii.
Pentatoma (Rhytidolomia) osborni, Colorado, VAN DUZEE, p. 37, Tr. Amer. ent. Soc. xxx, **n. sp.**
Peribalus tristis, Vancouver, VAN DUZEE, p. 33, t. c. **n. sp.**
Periphymopsis subg. n., SCHOUTEDEN, p. 78, Scutellerinæ.
Philia regia = (*leucochalea* Bredd.) *area* = (*compacta* Bredd.), DISTANT, p. 276, Ann. Nat. Hist. xiii; *P. jactator* = (*fenestrata* Bredd.), DISTANT, p. 66, op. cit. xiv.
P. insignis, N. S. Wales, SCHOUTEDEN, p. 297, Ann. Soc. ent. Belgique xlviii, **n. sp.**
Phimodera, the variation and synonymy, *P. humeralis* var. *n. dalmanni*, p. 6, REUTER, Ofv. Finska Forh. xvi, No. 17, 15 pp.
P. corrugata, Colorado, VAN DUZEE, p. 16, Tr. Amer. ent. Soc. xxx, **n. sp.**
Phlæa, its mimicry, PÉREZ, p. 429, C.R. Soc. Biol. lvi.
Platynopus fallax, horvathi, Africa, SCHOUTEDEN, p. 139, Ann. Soc. ent. Belgique xlviii, **n. spp.**
Plisthenes buruensis, Buru, BREDDIN, p. 179, Wien. ent. Zeit. xxiii, **n. sp.**
Podisus cynicus, bracteatus, distinctions, sex characters, HEIDEMANN, pp. 9, 10, cuts, P. ent. Soc. Washington vi.
P. blanditor, Peru, BREDDIN, p. 46, Soc. ent. xix; *P. carbonarius*, Centr. America, *neniator, carnifex*, S. America, BREDDIN, p. 154, t. c. : **n. spp.**
Podops parvulus, N. America, VAN DUZEE, p. 22, Tr. Amer. ent. Soc. xxx, **n. sp.**
Polytes insignis, Bolivia, SCHOUTEDEN, p. 298, Ann. Soc. ent. Belgique xlviii; *P. cingulicornis*, Brazil, BERGROTH, p. 354, Ann. Soc. ent.

- Belgique xlviii; *P. onca, griseus*, Peru, BREDDIN, p. 49, Soc. ent. xix : **n. spp.**
- Ponsila escalerai*, Guinea, SCHOUTEDEN, p. 142, Mem. Soc. Espan. i, **n. sp.**
- Prionocompastes vicarians*, Java, BREDDIN, p. 14, Wien. ent. Zeit. xxiii, **n. sp.**
- Rhynchocoris patulus*, Java, BREDDIN, p. 12, t. c. **n. sp.**
- Runibia picturata*, Peru, BREDDIN, p. 177, Soc. ent. xviii, **n. sp.**
- Sabæus rectispinus*, Java, p. 8, *teretispinus*, Sumbawa, *fortispinus*, Buru ?, p. 9, BREDDIN, Wien. ent. Zeit. xxiii, **n. spp.**
- Scotinophara curvispina*, p. 123, E. Africa, *madagascariensis*, Madagascar, p. 125, SCHOUTEDEN, Rhynch. æthiop. **n. spp.**
- Sepidiocoris n. g.* p. 127, *Graphosomatinae*, *S. noualhieri n. sp.*, W. Africa, p. 128, SCHOUTEDEN, t. c.
- Severinina n. g.* near *Melanophara*, p. 116, *S. bergrothi n. sp.*, Congo, pl. ii, fig. 10, p. 117, SCHOUTEDEN, Rhynch. æthiop.; *Severinina* and allies, characters amended, SCHOUTEDEN, p. 135, Ann. Soc. ent. Belgique xlviii.
- Sibaria andicola*, Ecuador, BREDDIN, p. 49, Soc. ent. xix, **n. sp.**
- Stenozygum bergrothi n. n.* for *bicolor* Sch., SCHOUTEDEN, p. 138, Ann. Soc. ent. Belgique xlviii.
- S. mombasanum*, E. Africa, SCHOUTEDEN, p. 137, t. c.; *S. varelai*, Cameroons, SCHOUTEDEN, p. 158, Mem. Soc. Espan. i : **n. spp.**
- Supputius obscurus*, Ecuador, BREDDIN, p. 154, Soc. ent. xviii, **n. sp.**
- Symphylus enac*, Bolivia, BREDDIN, p. 49, op. cit. xix, **n. sp.**
- Tarisa chloris*, Turkestan, HORVÁTH, p. 580, Ann. Mus. Hungar. ii, **n. sp.**
- Tectocoris lineola*, habits, stages, eggs, DODD, pp. 483–485, Tr. ent. Soc. London 1904.
- Tesseratoma niemensis*, Africa, SCHOUTEDEN, p. 143, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Tetrochlerus n. g.* near *Ochlerus*, *T. fissiceps n. sp.*, Ecuador, BREDDIN, p. 153, Soc. Ent. xviii.
- Theseus nigrescens*, N. Queensland, DISTANT, p. 263, Ann. Nat. Hist. xiii, **n. sp.**
- Thyanta punctiventris*, p. 55, *brevis*, p. 56, Colorado, VAN DUZEE, Tr. Amer. ent. Soc. xxx, **n. spp.**
- Tolumnia ferruginescens*, Tonkin, BREDDIN, p. 7, Wien. ent. Zeit. xxiii, **n. sp.**
- Triplatyx n. g.* near *Eurus*, p. 255, *T. quadraticeps n. sp.*, Madagascar, p. 256, HORVÁTH, Ann. Mus. Hungar. ii.
- Vanduzeeina n. g.* *Odontoscelis balli*, SCHOUTEDEN, p. 85, Scutellerinæ.
- Xerobia stali*, Somaliland, p. 87, SCHOUTEDEN, Rhynch. æthiop. **n. sp.**

COREIDÆ.

[Cf. BREDDIN (166, 171), DISTANT (388–391), GIARD (597), JAKOVLEFF (754, 755), OSBORN (1001).]

Althos n. n. for *Margus*, *Nanichisme n. n.* for *Nesiotes*, *Dersagrena n. n.* for *Dalcera*, *Elachisme n. n.* for *Elathea*, *Ouranion n. n.* for *Bardistus*, *Marichisme n. n.* for *Phidippus*, *Hæckelia n. n.* for *Microphyllia*, KIRKALDY, p. 280, Entomologist 1904.

Oviposition of *Pseudophlæus* and *Phyllomorpha*, GIARD, p. 107, Feuille Natural. xxxiv.

Acanthocephala declivis var. *n. guianensis*, OSBORN, p. 198, Ohio Natural. v.

Anasa tristis, copula eggs, parasite, GIRAULT, Ent. News Philad. xv, p. 335.

A. jucunda, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**

Carlisis serrabilis, Transvaal, DISTANT, p. 350, Ann. Nat. Hist. xiii, **n. sp.**

Coriomeris validicornis, Transcaucasus, p. 293, *integerrimus*, Nan-shan, p. 294, JAKOVLEFF, Rev. Russe Ent. 1904, **n. spp.**

- Holymenia tibialis*, *rubiginosa*, S. America, BREDDIN, p. 147, Soc. ent. xviii, **n. spp.**
- Hyalymenus* (*Tivarbus*) *calcarator*, Bolivia, BREDDIN, t. c. p. 148, **n. sp.**
- Hypselonotus fuscus*, Bolivia, OSBORN, p. 199, Ohio Natural. v, **n. sp.**
- Kennetus* **n. g.** *Mictaria*, p. 303, for *K. alces* **n. sp.**, Borneo, p. 304, DISTANT, Ann. Nat. Hist. xiii.
- Lycambes sargi*, Guatemala, BREDDIN, p. 306, Ann. Soc. ent. Belgique xlviii, **n. sp.**
- Mercennus* **n. n.** for *Melania* Dist., DISTANT, p. 304, Ann. Nat. Hist. xiii.
- Mictis loricata*, Congo, DISTANT, p. 61, op. cit. xiv, **n. sp.**
- Mirperus nigrofasciatus*, *robustus*, Transvaal, DISTANT, p. 352, op. cit. xiii, **n. spp.**
- Myrmus formosus*, Baikal, JAKOVLEV, p. 93, Rev. Russe Ent. iv, **n. sp.**
- Nematopus nigriventris*, Ecuador, *rufipes*, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. spp.**
- Plinactus trilineatus*, Transvaal, DISTANT, p. 351, Ann. Nat. Hist. xiii, **n. sp.**
- Pomponatus* **n. g.** near *Chærommatus*, p. 265, for *P. typicus* **n. sp.**, N. Queensland, p. 266, DISTANT, t. c.
- Trachelium mimeticum*, Bolivia, BREDDIN, p. 147, Soc. ent. xviii, **n. sp.**

LYGÆIDÆ and PYRRHOCORIDÆ.

[Cf. BREDDIN (170, 171), DISTANT (386, 388, 390), HORVÁTH (714, 717), JAKOVLEFF (754, 756), OSBORN (1001), UHLER (1416).]

- Antilocoris* **n. n.** for *Pygæus*, *Botocudo* **n. n.** for *Salacia*, *Probergrothius* **n. n.** for *Odontopus*, *Peggichisme* **n. n.** for *Davila*, *Polychisme* **n. n.** for *Imbrius*, KIRKALDY, p. 280, Entomologist 1904.
- Acroleucus eros*, *pothus*, Ecuador, BREDDIN, p. 148, Soc. ent. xviii, **n. spp.**
- Anorygma* **subg. n.** cf. *Phænacantha*.
- Aphanus atomarius*, Transvaal, DISTANT, p. 353, Ann. Nat. Hist. xiii, **n. sp.**
- Brachyphyma* **n. g.** p. 144, *B. argutum*, *ochraceum*, p. 145, *papuense*, p. 146, **n. spp.**, New Guinea, HORVÁTH, Ann. Mus. Hungar. ii.
- Calliseidus* **n. g.** p. 153, *C. nigricollis* **n. sp.**, Peru, p. 154, HORVÁTH, t. c.
- Chauliops rutherfordi*, Old Calabar, DISTANT, p. 277, Entomologist 1904, **n. sp.**
- Colobasiastes*, insertion of antennæ, p. 245, cut, BREDDIN, Wien. ent. Zeit. xxiii.
- C. similis*, p. 162, *longicornis*, p. 163, *obscurus*, p. 166, *rufiventris*, p. 167, Peru, HORVÁTH, Ann. Mus. Hungar. ii; *C. analis*, Bolivia, BREDDIN, p. 249, Wien. ent. Zeit. xxiii : **n. spp.**
- Colobathristine*, monograph, HORVÁTH, pp. 117–172, Ann. Mus. Hungar. ii.
- Colobathristes egregius*, Brazil, *facetus*, hab.?, HORVÁTH, p. 151, t. c. **n. spp.**
- Diascopea* **n. g.** p. 154, *D. discessa*, p. 155, *debilis*, p. 156, **n. spp.**, Peru, HORVÁTH, t. c.
- Dieuches scutellatus*, *consanguineus*, N. Queensland, DISTANT, p. 268, Ann. Nat. Hist. xiii, **n. spp.**
- Emblethis brevicornis*, Turkestan, HORVÁTH, p. 582, Ann. Mus. Hungar. ii; *E. luridus*, E. Turkestan, JAKOVLEFF, p. 24, Rev. Russe Ent. iv : **n. spp.**
- Fontejanus wasmanni*, amplified description, BREDDIN, pp. 410–412, cut, Ann. Soc. ent. Belgique xlviii.
- Geocoris* (*Piocoris*) *chinensis*, Sé-tschuen, JAKOVLEV, p. 170, t. c.; *G. elongatulus*, N. Queensland, DISTANT, p. 267, Ann. Nat. Hist. xiii : **n. spp.**
- Germalus lineolosus*, N. Queensland, DISTANT, p. 266, t. c. **n. sp.**
- Lygæus sulcatus*, Guiana, OSBORN, p. 200, Ohio Natural. v, **n. sp.**

- Microtoma præusta*, Alaï, JAKOVLEFF, p. 23, Rev. Russe Ent. iv, **n. sp.**
Narcegaster n. g. for *Colobathristes geniculatus* St., HORVÁTH, p. 141, Ann. Mus. Hungar. ii.
Nysius pilosulus, Turkestan, HORVÁTH, p. 581, t. c.; *N. rubromaculatus*, Transvaal, DISTANT, p. 352, Ann. Nat. Hist. xiii : **n. spp.**
Oxycarenus scabrosus, New Mexico, UHLER, p. 353, P. U. S. Mus. xxvii, **n. sp.**
Pamera picturata, p. 267, *apicalis*, p. 268, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, **n. spp.**
Peruda longiventris, Peru, HORVÁTH, p. 170, Ann. Mus. Hungar. ii, **n. sp.**
Physopelta melanoptera, W. Africa, DISTANT, p. 61, Ann. Nat. Hist. xiv, **n. sp.**
Piptocentrus n. g. p. 157, *P. pilipes n. sp.*, Peru, p. 158, HORVÁTH, Ann. Mus. Hungar. ii.
Phænacantha n. g. p. 120, *P. biroi*, p. 124, *suturalis*, p. 125, *consobrina*, *ambigua*, p. 126, *femoralis*, p. 127, *unicolor*, *conviva*, p. 128, *mehelyi*, p. 129, New Guinea, *sedula* with var. *melanoscelis*, p. 130, *gestroi*, Sumatra, *strenua*, p. 131, *antennalis*, p. 132, *pilosella*, p. 133, *discrepans*, p. 134, New Guinea, *confusa*, Philippines, p. 135, *pacifica*, Fiji, p. 136, *P. (Anorygma* subg. n., p. 137) *solers*, Burma, *viridipennis*, Tenasserim, p. 139, **n. spp.**, HORVÁTH, t. c.
Rhyparochromus compactus, New Mexico, UHLER, p. 354, P. U. S. Mus. xxvii, **n. sp.**
Symphylax n. g. p. 142, *S. picticollis n. sp.*, with varr. *blandus*, *confluens*, Sumatra, etc., p. 143, HORVÁTH, Ann. Mus. Hungar. ii.
Tagalisca subg. n. of *Phænacantha*, for *Colobathristes pallidus* St., HORVÁTH, p. 140, t. c.
Taphrocranium n. g. for *Colobathristes robustus* Bredd., HORVÁTH, p. 147, t. c.
Trichocentrus n. g. p. 152, *T. gibbosus n. sp.*, Brazil, p. 153, HORVÁTH, t. c.

TINGIDÆ.

- Corythuca marmorata*, life-history, FELT, pp. 125-129, pls. iii, iv, Bull. N. York Mus. lxxvi.
Phyllochisme n. n. for *Physatochila* L. & S., *Mæcenus n. n.* for *Tingis*, *Gelchossa n. n.* for *Leptostyla*, KIRKALDY, p. 280, Entomologist 1904.

ARADIDÆ and PHYMATIDÆ.

[Cf. DISTANT (386), HEIDEMANN (670, 671).]

- Aneurus fiskei*, N. Carolina, HEIDEMANN, p. 164, P. ent. Soc. Washington vi, **n. sp.**
Aradus uniformis, p. 231, *hubbardi*, p. 232, N. America, HEIDEMANN, t. c. **n. spp.**
Neuroctenus hopkinsi, North Carolina, HEIDEMANN, p. 163, t. c. **n. sp.**
Proxius schwarzii, Florida, HEIDEMANN, p. 230, t. c. **n. sp.**
Glossopelta dudgeoni, Kangra, DISTANT, p. 277, Entomologist 1904, **n. sp.**

HYDROMETRIDÆ.

- Gerris thoracicus* var. n. *rapidus*, HORVÁTH, p. 582, Ann. Mus. Hungar. ii.
Metrocoris, table of species, KIRKALDY, p. 61, Entomologist 1904.
M. distanti, Zoutpansberg, id. p. 62, t. c. **n. sp.**
Velia brunnea, Bolivia, OSBORN, p. 204, Ohio Natural. v, **n. sp.**

REDUVIIDÆ.

[Cf. BERGROTH (103), BREDDIN (167, 171), DISTANT (383, 388, 390), HORVÁTH (717), JAKOVLEFF (754), NOUALHIER (984), OSBORN (1001), VARELA (1431, 1432).]

Westermanni **n. n.** for *Westermannia*, *Isachisme* **n. n.** for *Algol*, *Peregrinator* **n. n.** for *Microleptes*, *Mestor* **n. n.** for *Lamus*, *Brontostoma* **n. n.** for *Mindarus*, KIRKALDY, p. 280, Entomologist 1904.

BREDDIN notes various forms of larval *Reduviidæ*, found in the nests of Termites and Ants in India and Africa, Ann. Soc. ent. Belgique xlviii, pp. 412–416.

Acanthaspis (*Plynus*) *breddini*, Cameroons, VARELA, p. 55, Bol. Soc. espan. iv; *A. sericata*, p. 258, *porrecta*, p. 261, Ceylon, *zebraica*, Burma, p. 264, *siva*, p. 265, *rama*, p. 268, India, DISTANT, Faun. Brit. India Rhynchota ii; *A. varivivens*, Siam, NOUALHIER, p. 174, pl. x, fig. 1, Mission Pavie iii : **n. spp.**

Alcmena straminipes, *maculosa*, India, DISTANT, p. 370, Faun. Brit. India Rhynchota ii, **n. spp.**

Allæorhynchus bengalensis, India, DISTANT, p. 394, t. c. **n. sp.**

Apiomerus lobulatus, Ecuador, BREDDIN, p. 148, Soc. ent. xviii, **n. sp.**

Arcesius fuscus, Burma, DISTANT, p. 351, Faun. Brit. India Rhynchota ii, **n. sp.**

Audernacus **n. g.** for *Santosia atropictus* Dist. and *A. andamanensis* **n. sp.**, Andamans, DISTANT, p. 306, t. c.

Bayerus **n. g.** near *Santosia*, *B. cuneatus* **n. sp.**, Assam, DISTANT, p. 307, t. c.

Bartacus **n. g.** near *Epidaus* for *Cimex spinifex* Thunb., DISTANT, p. 374, t. c.

Brassivola **n. g.** near *Epidaus*, p. 373, *B. hystrix* **n. sp.**, Ceylon, p. 374, DISTANT, t. c.

Castolus (*Spinda*) *nigriventris*, Bolivia, BREDDIN, p. 148, Soc. ent. xviii, **n. sp.**

Centrocnemis dearmata, Ceylon, DISTANT, Faun. Brit. India Rhynchota ii, **n. sp.**

Cleptria escaleraei, Guinea, VARELA, p. 134, Mem. Soc. Espan. i, **n. sp.**

Conorrhinus megistus, attacks on man, POULTON, p. lxxvi, P. ent. Soc. London 1904.

Coranus mongolicus, E. Mongolia, JAKOVLEFF, p. 26, Rev. Russe Ent. iv, **n. sp.**

Croschius melanopterus = (*Castrucci* *insignis* Dist.), DISTANT, p. 276, Ann. Nat. Hist. xiii.

Dithmarus **n. g.** *Stenopodinae*, p. 353, for *D. atromaculatus* **n. sp.**, Transvaal, p. 354, DISTANT, t. c.

Dodonæus **n. g.** near *Nabis*, p. 398, *D. humeralis* **n. sp.**, Sikhim, p. 399, DISTANT, Faun. Brit. India Rhynchota ii.

Durganda fulvescens, Tenasserim, DISTANT, p. 283, t. c. **n. sp.**

Ectomocoris erebus, Burma, p. 292, *tibialis*, p. 293, *vishnu*, p. 296, India, DISTANT, t. c.

Edocla pelia, Pegu, DISTANT, p. 275, t. c. **n. sp.**

Elaphocranus **n. g.** *Petalochirinae*, p. 357, *tarandus* **n. sp.**, Cameroons, p. 358, BERGROTH, Bol. Soc. espan. iv.

Endochus cinnamopterus, *straminipes*, Transvaal, DISTANT, p. 355, Ann. Nat. Hist. xiii; *E. atricapillus*, *umbrinus*, India, DISTANT, p. 367, Faun. Brit. India Rhynchota ii : **n. spp.**

Epidaus atrispinus, Sikhim, *parvus*, Burma, DISTANT, p. 372, t. c. **n. spp.**

Eriximachus **n. g.** near *Physorhynchus*, p. 323, *E. globosus* **n. sp.**, India p. 324, DISTANT, t. c.

- Euvonymus* **n. g.** *Acanthaspidinæ*, p. 244, *E. spiniceps* **n. sp.**, Ceylon, p. 245, DISTANT, t. c.
- Godefridus* **n. g.** *Apiomerinæ*, p. 328, *G. alienus* **n. sp.**, Burma, p. 329, DISTANT, t. c.
- Harpactor geniculatus*, Transcaucasus, JAKOVLEV, p. 94, Rev. Russe Ent. iv; *H. femoralis*, Transvaal, DISTANT, p. 355, Ann. Nat. Hist. xiii; *H. squalus*, Sikhim, DISTANT, p. 333, Faun. Brit. India Rhynchota ii, **n. spp.**
- Harpagocoris perspectans* varr. = (*bergrothi* and *affinis*), BERGROTH, p. 361, Bol. Soc. espan. iv.
- H. bergrothi*, p. 136, *affinis*, p. 137, *merceti*, *suspectus*, p. 138, W. Africa, VARELA, Mem. Soc. Espan. i, **n. spp.**
- Havinthus trochanterus*, N. Queensland, DISTANT, p. 269, Ann. Nat. Hist. xiii, **n. sp.**
- Henricohahnia gallus*, Nilgiri hills, DISTANT, p. 389, Faun. Brit. India Rhynchota ii, **n. sp.**
- Heteropinus discretus*, Guinea, VARELA, p. 131, Mem. Soc. Espan. i, **n. sp.**; characters, BERGROTH, op. cit. iv, p. 362.
- Libavius* **n. g.** near *Mendis*, *L. greeni* **n. sp.**, Ceylon, DISTANT, p. 313, Faun. Brit. India Rhynchota ii.
- Linskcosteus* **n. g.** near *Conorhinus*, *L. carnifex* **n. sp.**, N. India, DISTANT, p. 287, t. c.
- Lisarda varelæ*, Cameroons, BERGROTH, p. 360, Bol. Soc. espan. iv, **n. sp.**
- Lorichius* **n. g.** near *Nabis*, *L. umbonatus* **n. sp.**, Ceylon, DISTANT, p. 402, Faun. Brit. India Reduv. ii.
- Marbodius* **n. g.** *Epiroderaria*, *M. exemplificatus* **n. sp.**, Ceylon, DISTANT, p. 248, t. c.
- Mastigonomus bolivari*, Guinea, VARELA, p. 136, Mem. Soc. Espan. i, **n. sp.**
- Nabis cinerascens*, Turkestan, HORVÁTH, p. 582, Ann. Mus. Hungar. ii; *N. tibialis*, Ceylon, p. 400, *funebilis*, *nigrescens*, p. 401, India, DISTANT, Faun. Brit. India Rhynchota ii: **n. spp.**
- Odontogonus* **n. n.** for *Laphyctes* Stål nec Reich., BERGROTH, p. 361, Bol. Soc. espan. iv.
- Phasmatocoris* **n. g.** *Emesiini*, *P. spectrum* **n. sp.**, Bolivia, BREDDIN, p. 148, Soc. ent. xviii.
- Phoner gates* (*Clopophora*) *nuptura*, Cameroons, VARELA, p. 55, Bol. Soc. espan. iv, **n. sp.**
- Phonoctonus elegans*, Cameroons, VARELA, p. 56, t. c. **n. sp.**
- Phonolibes bimaculatus*, Transvaal, DISTANT, p. 354, Ann. Nat. Hist. xiii, **n. sp.**
- Physorhynchus pedestris*, p. 320, *malabaricus*, *talpus*, p. 321, *insignis*, *rubromaculatus*, p. 322, India, DISTANT, Faun. Brit. India Rhynchota ii, **n. spp.**
- Prostemma siamense*, Siam, NOUALHIER, p. 176, pl. x, fig. 2, Mission Pavie iii, **n. sp.**
- Quercetanus* **n. g.** near *Scadra*, p. 310, *Q. atromaculatus*, India, *relatus*, Ceylon, **n. spp.**, p. 311, DISTANT, Faun. Brit. India Rhynchota ii.
- Reduvius transnominialis* **n. n.** for *debilis* Reut., DISTANT, p. 251, t. c.
- R. knyveti*, p. 251, *esau*, *boyesi*, p. 252, *angiportus*, p. 253, India, DISTANT, t. c. **n. spp.**
- Rhaphidosoma tuberculatum*, Baluchistan, DISTANT, t. c. p. 330, **n. sp.**
- Rulandus* **n. g.** *Nabinæ*, *R. phædrus* **n. sp.**, Burma, DISTANT, p. 396, t. c.
- Santosa finitima*, Cameroons, VARELA, p. 133, Mem. Soc. Espan. i, **n. sp.**
- Scadra tibialis*, *scutellaris*, Assam, DISTANT, p. 309, Faun. Brit. India Rhynchota ii, **n. spp.**
- Seridentus* **n. g.** near *Shaumannia*, *S. denticulatus* **n. sp.**, Bolivia, OSBORN, p. 203, Ohio Natural. v.

- Sminthocoris* **n. n.** for *Smithus* Stål, DISTANT, p. 279, Faun. Brit. India Rhynchota ii.
Sphedanolestes dives, variabilis, India, DISTANT, p. 342, t. c. **n. sp.**
Stegius **n. g.** near *Physorhynchus*, p. 322, *S. pravus* **n. sp.**, Bengal, p. 323, DISTANT, t. c.
Sycanus inermis, Assam, *atrocyaneus*, Burma, DISTANT, p. 356, t. c. **n. spp.**
Tragelaphodes **n. g.** *Petalochirinae*, p. 358, *hirculus* **n. sp.**, Cameroons, p. 360, BERGROTH, Bol. Soc. espan. iv.
Villanovanus **n. g.** for *Endochus dichrous*, DISTANT, p. 364, Faun. Brit. India Rhynchota ii.

ANTHOCORIDÆ, CERATOCOMBIDÆ, HENICOCEPHALIDÆ,
POLYCTENIDÆ.

Synonymy of Walker's *Anthocoridae*, DISTANT, p. 222, Ann. Nat. Hist. xiv.

- Amphiareus* **n. g.** for *Xylocoris fulvescens* Walk., DISTANT, p. 220, t. c.
Arnulphus **n. g.** for *A. aterrimus* **n. sp.**, Burma, DISTANT, p. 220, t. c.
Ceratocombus niger, p. 361, *lutipennis*, p. 362, New Mexico, UHLER, P. U. S. Mus. xxvii, **n. spp.**
Crescentius **n. g.** *Ceratocombinae*, p. 408, *C. principatus* **n. sp.**, Burma, p. 409, DISTANT, Faun. Brit. India Rhynchota ii.
Henicocephalus pugnatorius, Cape Colony, DISTANT, p. 278, Entomologist 1904, **n. sp.**
Lippomanus **n. g.** *Anthocoridae* for *L. hirsutus* **n. sp.**, Burma, DISTANT, p. 221, Ann. Nat. Hist. xiv.
Ostorodias **n. g.** *Anthocoridae* for *O. contubernalis* **n. sp.**, Himalaya, DISTANT, p. 219, t. c.
Phthirocoris **n. g.** *Henicocephalidae*, p. 786, for *P. antarcticus* **n. sp.**, Crozet Islands, p. 787, ENDERLEIN, Zool. Anz. xxvii.
Polycytenes intermedius, Egypt, SPEISER, p. 373, pl. xx, Zool. Jahrb. Suppl. vii, **n. sp.**
Sesellius **n. g.** *Anthocoridae* for *Anthocoris parallelus* Motsch., DISTANT, p. 221, Ann. Nat. Hist. xiv.
Sphigmocephalus **n. g.** for *Henicocephalus curculio* Karsch., ENDERLEIN, p. 783, Zool. Anz. xxvii.

CAPSIDÆ.

[Cf. DISTANT (383, 387, 388, 391), HORVÁTH (717), JAKOVLEFF (754), KIRKALDY (809), REUTER (1162–1169), UHLER (1416).]

- Metriorrhynchomiris* **n. n.** for *Metriorrhynchus*, *Zanchisme* **n. n.** for *Schizonotus*, *Kalanina* **n. n.** for *Baracus*, *Bertsu* **n. n.** for *Berta*, *Reuterista* **n. n.** for *Brachybasis*, *Ragnar* **n. n.** for *Melanocoris*, *Poronotellus* **n. n.** for *Poronotus*, KIRKALDY, p. 280, Entomologist 1904.

DISTANT gives synonymy and summary of Walker's *Capsidæ*; for details refer to the memoir, Ann. Nat. Hist. xiii, pp. 204–206 etc.

- Actinonotus pulcher* varr., REUTER, p. 3, Ofv. Finska Forh. xlvi, No. 14.
Adelphocoris funebris, Corea, REUTER, p. 34, Rev. Russe Ent. iv; *A. funestus*, Mou-Pin, p. 7, *fasciaticollis*, p. 8, *melanocephalus*, p. 9, Pekin, REUTER, Ofv. Finska Forh. xlv, No. 16 : **n. spp.**
Agraptocoris **n. g.** p. 6, *concolor* **n. sp.**, p. 7, Mongolia, REUTER, op. cit. xlv, No. 4.
Æolocoris **n. g.** near *Acorrhinius*, *Æ. alboconsersus* **n. sp.**, Obock, pl. i, fig. 5, p. 17, REUTER, op. cit. xlv, No. 6.

- Allæonycha* **n. g.** near *Acrotelus*, p. 8, *mayri* **n. sp.**, Wiesbaden, p. 9, REUTER, op. cit. xlv, No. 14.
- Allæotomus chinensis*, Pekin, REUTER, p. 20, op. cit. xlv, No. 16, **n. sp.**
- Anapus flavicornis*, Borjom, REUTER, p. 5, op. cit. xlv, No. 14; *A. pectoralis*, Turkestan, HORVÁTH, p. 584, Ann. Mus. Hungar. ii : **n. spp.**
- Angerianus* **n. g.** *Cylaparia*, p. 437, *A. fractus*, *maurus* **n. spp.**, Tenasserim, p. 438, DISTANT, Faun. Brit. India Rhynchota ii.
- Annona smithi* (= *labeculata* Uhl. nec Dist.), Grenada, *antilleana* (= *Mala decoloris* Uhl.), St. Vincent, DISTANT, p. 62, Ann. Nat. Hist. xiv, **n. spp.**
- Araspus* **n. g.** *Bryocoraria* for *Lopus partilus* Walk., DISTANT, p. 112, op. cit. xiii.
- Arculanus* **n. g.** near *Disphinctus*, for *A. marshalli* **n. sp.**, Mashonaland, DISTANT, p. 198, t. c.
- Argenis* **n. g.** *Cylaparia*, for *Capsus incisuratus* Walk., DISTANT, p. 107, t. c.
- A. alboridescens*, Ceylon, DISTANT, p. 435, Faun. Brit. India Rhynchota ii, **n. sp.**
- Armachanus* **n. g.** *Cyllocoraria*, p. 478, *A. monoceros* **n. sp.**, Ceylon, p. 479, DISTANT, t. c.; *A. spicatus*, N. W. Australia, DISTANT, p. 203, Ann. Nat. Hist. xiii, **n. sp.**
- Atomophora oculata*, p. 10, *maculosa*, p. 12, *suturalis*, p. 13, *albovittata*, p. 14, Transcaspian, REUTER, Ofv. Finska Forh. xlv, No. 4, **n. spp.**
- Atractotomus brevicornis* ♂, REUTER, p. 17, t. c. No. 14.
- Bothriomiris testaceus*, Burma, DISTANT, p. 470, Faun. Brit. India Rhynchota ii, **n. sp.**
- Callicratides* **n. g.** for *Capsus rama* Kirby, DISTANT, p. 417, t. c.
- Calocoris hispanicus* var. *n. bisignata*, *C. sexguttatus* var. *n. reducta*, REUTER, p. 2, Ofv. Finska Forh. xlv, No. 14.
- C. dohertyi*, Tenasserim, DISTANT, p. 452, Faun. Brit. India Rhynchota ii, **n. sp.**
- Camponotidea saundersi* var., REUTER, p. 4, Ofv. Finska Forh. xlv, No. 14.
- Camptobrochis tibialis*, Erythrea, REUTER, p. 12, op. cit. xlv, No. 6; *C. oculatus*, Congo, REUTER, p. 3, op. cit. xlv, No. 10; *C. esau*, p. 201, *capensis*, p. 202, S. Africa, DISTANT, Ann. Nat. Hist. xiii; *C. orientalis*, p. 460, *lutulentus*, *uniformis*, *similis*, p. 461, Brit. India, DISTANT, Faun. Brit. India Rhynchota ii; *C. signatus*, N. Queensland, DISTANT, p. 274, Ann. Nat. Hist. xiii; *C. brevis*, New Mexico, UHLER, p. 359, P. U. S. Mus. xxvii : **n. spp.**
- Campylognathus fulvus*, Crete, REUTER, p. 18, Ofv. Finska Forh. p. 18, **n. sp.**
- Campylotropis* **n. g.** near *Cyllocoris*, p. 35, for *C. jakolevi* **n. sp.**, Corea, p. 36, REUTER, Rev. Russe Ent. iv.
- Capellanus* **n. g.** *Phytocoraria* Walk., for *Lygus sparsus* Dist., DISTANT, p. 109, Ann. Nat. Hist. xiii.
- Capsus croesus*, *remus*, p. 468, *darsius*, Burma, *pegasus*, Ceylon, p. 469, DISTANT, Faun. Brit. India Rhynchota ii, **n. spp.**
- Chamus* **n. g.** *Cylaparia* for *C. wealei*, Cape Colony, **n. sp.**, DISTANT, p. 197, Ann. Nat. Hist. xiii.
- Charagochilus nigricornis*, Congo, REUTER, p. 2, Ofv. Finska Forh. xlv, No. 10; *C. duplicatus*, Pekin, REUTER, p. 16, op. cit. xlv, No. 16 : **n. spp.**
- Charitocoris* **n. g.** near *Calocoris*, p. 10, *C. pallidus* **n. sp.**, Persia, p. 11, REUTER, Annuaire Mus. St. Petersb. ix.
- Chlorosomella* **n. g.** near *Actorrhinus*, p. 6, *geniculata* **n. sp.**, Congo, p. 7, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Clapmarius* **n. g.** *Herdoniaria*, p. 419, *C. turgidus* **n. sp.**, Ceylon, p. 420, DISTANT, Faun. Brit. India Rhynchota ii.
- Clivinema rubida*, New Mexico, UHLER, p. 355, P. U. S. Mus. xxvii, **n. sp.**
- Combalus* **n. g.** *Miraria*, *C. novitius* **n. sp.**, Assam, DISTANT, p. 431, Faun. Brit. India Rhynchota ii.

- Cyphodema* ? *junodi*, Transvaal, DISTANT, p. 201, Ann. Nat. Hist. xiii, **n. sp.**
Cyphodemidea **n. g.** near *Cyphodema*, p. 17, *C. variegata* **n. sp.**, Mou-Pin, pl. ii, fig. 5, p. 19, REUTER, Ofv. Finska Forh. xlv, No. 16.
Cytorrhinus chinensis Stål, REUTER, p. 22, t. c.
Dagbertus **n. g.** near *Episcopus* for *Capsus darwini* etc., DISTANT, p. 203, Ann. Nat. Hist. xiii.
Deræocorsis rutilus var. **n. fasciata**, *D. scutellaris* var. **n. ventralis**, REUTER, p. 5, Ofv. Finska Forh. xlv, No. 14.
D. variabilis, *rufus*, *ornandus*, India, DISTANT, p. 467, Faun. Brit. India Rhynchota ii, **n. spp.**
Dichrooscytus consobrinus, Turkestan, HORVÁTH, p. 583, Ann. Mus. Hungar. ii; *D. elegans*, New Mexico, UHLER, p. 356, P. U. S. Mus. xxvii : **n. spp.**
Diognetus **n. g.** *Miraria*, p. 431, *D. intonsus* **n. sp.**, Ceylon, p. 432, DISTANT, Faun. Brit. India Rhynchota ii.
Disphinctus elegans, Tenasserim, DISTANT, p. 445, t. c. **n. sp.**
Estuidus **n. g.** near *Malalasta*, p. 272, for *E. foveatus*, *marginatus* **n. spp.**, N. Queensland, p. 273, DISTANT, Ann. Nat. Hist. xiii.
Eucercoris suspectus, N. Queensland, DISTANT, p. 271, t. c. **n. sp.**
Eucyrtus parvulus, Djibouti, REUTER, p. 5, pl. i, fig. 2, Ofv. Finska Forh. xlv, No. 6, **n. sp.**
Felisacus **n. n.** for *Liocoris* Motsch. p. 438, *F. magnificus* **n. sp.**, Tenasserim, p. 439, DISTANT, Faun. Brit. India Rhynchota ii.
Fingulus **n. g.** near *Physetonotus*, for *F. atrocæruleus* **n. sp.**, N. Queensland, DISTANT, Ann. Nat. Hist. xiii, p. 275.
Fulgentius **n. g.** *Herdonaria*, p. 103, for *F. mandarinus* **n. sp.**, China, p. 104, DISTANT, t. c.
Gallobelicus **n. g.** *Cyllocoraria*, p. 477, *G. crassicornis* **n. sp.**, India, p. 478, DISTANT, Faun. Brit. India Rhynchota ii.
Gismunda **n. g.** near *Liocoris*, *G. chelonina* **n. sp.**, Sikhim, DISTANT, p. 463, t. c.
Glaphyrocoris **n. g.** near *Læmocoris*, p. 15, *G. unifasciatus* **n. sp.**, Djibouti, pl. i, fig. 4, p. 16, REUTER, Ofv. Finska Forh. xlv, No. 6.
Globiceps parvulus, Spain, REUTER, p. 51, Ent. Mag. xl, **n. sp.**
Glossopeltis **n. g.** near *Pilophorus*, p. 13, *G. coutierei*, Obock, **n. sp.**, pl. i, fig. 3, p. 14, REUTER, Ofv. Finska Forh. xlv, No. 6.
Guisardus **n. g.** *Cylaparia*, *G. pellucidus* **n. sp.**, Tenasserim, DISTANT, p. 436, Faun. Brit. India Rhynchota ii.
Halticus intermedius, New Mexico, UHLER, p. 360, P. U. S. Mus. xxvii; *H. chrysolepis*, Honolulu, KIRKALDY, p. 179, Entomologist 1904 : **n. spp.**
Harpedona **n. g.** *Herdonaria*, p. 418, *H. marginata* **n. sp.**, Ceylon, p. 419, DISTANT, Faun. Brit. India Rhynchota ii.
Helopeltis oryx, Ceylon, DISTANT, p. 441, t. c. **n. sp.**
Hermotinus **n. g.** near *Camptobrochis*, *H. signatus* **n. sp.**, Tenasserim, DISTANT, p. 462, t. c.
Hilia **n. g.** near *Halticus*, *H. fracta* **n. sp.**, Ceylon, DISTANT, p. 480, t. c.
Horcias lacteiclavus, *albiventris*, *signatus*, S. America, DISTANT, p. 200, Ann. Nat. Hist. xiii, **n. spp.**
Hyalopeplus spinosus, Assam, DISTANT, p. 447, Faun. Brit. India Rhynchota ii, **n. sp.**
Isometopus feanus, Burma, DISTANT, p. 484, t. c. **n. sp.**
Læmocoris zarudnyi, Persia, REUTER, p. 11, Annuaire Mus. St. Petersb. ix, **n. sp.**
Liocoridia **n. g.** near *Lygus*, p. 13, *mutabilis* **n. sp.**, Mou-Pin, pl. ii, fig. 4, p. 14, REUTER, Ofv. Finska Forh. xlv, No. 16.
Liocoris myitta, *formosus*, Tenasserim, DISTANT, p. 464, Faun. Brit. India Rhynchota ii, **n. spp.**

- Lopus bimaculatus* Jak., description, REUTER, p. 1, Ofv. Finska Forh. xlv, No. 14; *L. australis* Walk., referred to *Pantilius* and described, DISTANT, p. 106, Ann. Nat. Hist. xiii.
- Lucitanus* **n. g.** for *Leptomerocoris punctatus* Kirby, DISTANT, p. 465, Faun. Brit. India Rhynchota ii.
- Lygus australis* **n. n.** for *innotatus* Walk., p. 110, *æthiops* **n. n.** for *limbatus* Walk., p. 111, DISTANT, Ann. Nat. Hist. xiii.
- L. abessinicus*, Kupi, p. 7, *vittatus*, Djibouti, p. 8, *perversus*, Scioa, p. 10, *simonyi*, Aden, p. 11, REUTER, Ofv. Finska Forh. xlv, No. 6; *L. schonlandi*, Cape Colony, DISTANT, p. 199, Ann. Nat. Hist. xiii; *L. albescens*, *decoloratus*, p. 455, *pubens*, *immitis*, p. 456, *catullus*, p. 457, India and Ceylon, DISTANT, Faun. Brit. India Rhynchota ii; *L. flavoscutellatus*, N. Queensland, DISTANT, p. 273, Ann. Nat. Hist. xiii : **n. spp.**
- Malalasta* **n. g.** *Capsinæ*, *M. superba* **n. sp.**, Tenasserim, DISTANT, p. 446, Faun. Brit. India Rhynchota ii.
- Malthacosoma adpersum*, Transcaspiian, REUTER, p. 11, Ofv. Finska Forh. xlv, No. 14, **n. sp.**
- Matenesius* **n. g.** *Miraria*, p. 425, *M. marginatus* **n. sp.**, Ceylon, p. 426, DISTANT, Faun. Brit. India Rhynchota ii.
- Mauroidactylus albidus* var. **n.** *pallidicornis*, HORVÁTH, p. 585, Ann. Mus. Hungar. ii.
- Megacalum elongatum* to *Pantiliodes*, REUTER, p. 3, Ofv. Finska Forh. xlv, No. 6.
- M. persimile*, Abyssinia, REUTER, p. 4, t. c.; *M. transvaalensis*, Pretoria, DISTANT, p. 196, Ann. Nat. Hist. xiii; *M. relatum*, p. 428, *rubricatum*, Ceylon, *hampsoni*, Nilgiri Hills, p. 429, *picturatum*, Burma, p. 430, DISTANT, Faun. Brit. India Rhynchota ii; *M. modestum*, *townsvillensis*, *suffusum*, N. Queensland, DISTANT, Ann. Nat. Hist. xiii : **n. spp.**
- Megaloceræa celestialium* to *Trigonotylus*, REUTER, p. 1, Ofv. Finska Forh. xlv, No. 16.
- M. graminea*, *antennata*, p. 424, *elongata*, *dohertyi*, p. 425, India and Ceylon, DISTANT, Faun. Brit. India Rhynchota ii; *M. doddi*, N. Queensland, DISTANT, p. 269, Ann. Nat. Hist. xiii : **n. spp.**
- Megalocoleus albidus*, Transcaspiian, REUTER, p. 9, Ofv. Finska Forh. xlv, No. 4, **n. sp.**
- Mertila* **n. g.** *Bryocoraria* for *M. malayensis*, Singapore, *ternatensis*, Ternate, **n. spp.**, DISTANT, p. 113, Ann. Nat. Hist. xiii.
- Mevius* **n. g.** *M. lewisi* **n. sp.**, Ceylon, DISTANT, p. 453, Faun. Brit. India Rhynchota ii.
- Miris*, the name applied to *Leptopterna* Fieb., REUTER, p. 2, Ofv. Finska Forh. xlv, No. 15.
- M. ruficeps*, Cape Colony, DISTANT, p. 105, Ann. Nat. Hist. xiii; *M. atkinsoni*, Nilgiri Hills, DISTANT, p. 423, Faun. Brit. India Rhynchota ii : **n. spp.**
- Mycterocoris* **n. g.** for *Deræocoris cerachates*, UHLER, p. 358, P. U. S. Mus. xxvii.
- Myrmecophyes korschinski*, p. 4, *æneus*, p. 5, Turkestan, REUTER, Ofv. Finska Forh. xlv, No. 4, **n. spp.**
- Mystilus* **n. g.** *Herdoniaria*, *M. priamus* **n. sp.**, Tenasserim, DISTANT, p. 420, Faun. Brit. India Rhynchota ii.
- Nanniella* **n. g.** *Laboparia*, *N. chalybea* **n. sp.**, Congo, p. 6, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Nichomachus* **n. g.** *Herdonaria* for *N. sloggetti* **n. sp.**, Cape Colony, DISTANT, p. 104, Ann. Nat. Hist. xiii.
- Nicostratus* **n. g.** *Cyllocoraria*, *N. balteatus* **n. sp.**, Ceylon, DISTANT, p. 475, Faun. Brit. India Rhynchota ii.
- Nyctidea* **n. g.** near *Criocoris*, p. 15, *moesta*, E. Siberia, **n. sp.**, p. 17, REUTER, Ofv. Finska Forh. xlv, No. 4.

- Nymannus* **n. g.** *Miraria* for *N. typicus* **n. sp.**, Cape Colony, DISTANT, p. 195, Ann. Nat. Hist. xiii.
- Oncotylus cunealis*, Persia, REUTER, p. 14, Annuaire Mus. St. Petersb. ix ; *O. fuscicornis*, Mongolia, REUTER, p. 10, Ofv. Finska Forh. xlv, No. 14 : **n. spp.**
- Onomaeus* **n. g.** *Herdoniaria*, *O. pompeus* **n. sp.**, Assam, DISTANT, p. 416, Faun. Brit. India Rhynchota ii.
- Orthotylus antennalis*, Orotava, p. 6, *pallidulus*, Austria, p. 7, REUTER, Ofv. Finska Forh. xlv, No. 14, **n. spp.**
- Pantilius gonoceroides*, Mou-Pin, REUTER, p. 4, op. cit. xlv, No. 16, **n. sp.**
- Paracalocoris capensis*, Cape Good Hope, DISTANT, p. 110, Ann. Nat. Hist. xiii ; *P. barretti*, Cape Colony, DISTANT, p. 199, t. c. ; *P. burmanicus*, *erebus*, Burma, *lanarius*, Ceylon, DISTANT, p. 450, Faun. Brit. India Rhynchota ii : **n. spp.**
- Paracarnus grenadensis* (= *mexicanus* Uhler), Grenada, DISTANT, p. 62, Ann. Nat. Hist. xiv, **n. sp.**
- Parapantilius* **n. g.** p. 5, *P. thibetanus* **n. sp.**, pl. ii, fig. 2, p. 6, Mou-Pin, REUTER, Ofv. Finska Forh. xlv, No. 16.
- Pharyllus* **n. g.** for *Leptomerocoris pistacinus* Motsch., DISTANT, p. 434, Faun. Brit. India Rhynchota ii.
- Phytocoris zarudnyi*, p. 8, *lineaticollis*, p. 9, Persia, REUTER, Annuaire Mus. St. Petersb. ix ; *P. longicornis*, p. 1, *maestus*, p. 2, Centr. Asia, REUTER, Ofv. Finska Forh. xlv, No. 16 ; *P. crinitus*, Ceylon, DISTANT, p. 449, Faun. Brit. India Rhynchota ii : **n. spp.**
- Plagiognathus cinerascens*, Mongolia, REUTER, p. 17, Ofv. Finska Forh. xlv, No. 14, **n. sp.**
- Pleuroxonotus* **n. g.** p. 7, *nasutus* **n. sp.**, Transcaspian, p. 8, REUTER, t. c., No. 4.
- Pæciloscytus cuneatus* Dist. (as *Lygus*) (= *obscurus* Uhler), DISTANT, p. 62, Ann. Nat. Hist. xiv.
- P. consanguineus*, *pygmæus*, *capitatus*, Burma and Ceylon, DISTANT, p. 459, Faun. Brit. India Rhynchota ii ; *P. antennatus*, *flavipes*, N. Queensland, DISTANT, p. 274, Ann. Nat. Hist. xiii : **n. spp.**
- Polymerus varicornis*, Corea, JAKOVLEV, p. 94, Rev. Russe Ent. iv, **n. sp.**
- Prodromus* **n. g.** *Cylaparia*, p. 436, *P. subflavus*, Ceylon, *clypeatus*, *subviridis*, Tenasserim, p. 437, DISTANT, Faun. Brit. India Rhynchota ii.
- Psallopsis*, amended description, REUTER, p. 15, Annuaire Mus. St. Petersb. ix.
- P. basalis*, Persia, id. p. 16, t. c. **n. sp.**
- Psallus proteus* varr., REUTER, pp. 12, 13, Ofv. Finska Forh. xlv, No. 14.
- P. instabilis*, p. 13, *beckeri*, p. 14, *longiceps*, p. 15, Canaries, REUTER, t. c. ; *P. singalensis*, Ceylon, DISTANT, p. 482, Faun. Brit. India Rhynchota ii : **n. spp.**
- Rhinofulvius*, characters, p. 1, *R. albifrons*, pl. i, fig. 1, p. 2, REUTER, Ofv. Finska Forh. xlv, No. 6.
- Ropaliceschatus* **n. g.** near *Pachypeltis*, p. 1, *R. quadrimaculatus* **n. sp.**, Mou-Pin, pl. ii, fig. 1, p. 3, REUTER, op. cit. No. 16.
- Sabellicus* **n. g.** near *Deraecoris* for *Capsus apicifer*, and *Lopus sordidus* Walk., DISTANT, p. 114, Ann. Nat. Hist. xiii.
- Scirtetellus seminitens*, Turkestan, HORVÁTH, p. 584, Ann. Mus. Hungar. ii, **n. sp.**
- Sophianus* **n. g.** *Isometopinæ*, p. 485, *S. alces* **n. sp.**, Ceylon, p. 486, DISTANT, Faun. Brit. India Rhynchota ii.
- Stenodema*, synopsis of Palæarctic, REUTER, Ofv. Finska Forh. xlv, No. 15, pp. 3-6.
- S. trispinosum*, Siberia, p. 8, *turanicum*, Transcaspian, p. 11, *alpestre*, p. 13, *elegans*, p. 14, *plebeium*, p. 17, *chinense*, p. 19, Setschuan, REUTER, t. c. **n. spp.**

- Tancredus* **n. g.** *Miraria*, *T. sandaracatus* **n. sp.**, Ceylon, DISTANT, p. 430, Faun. Brit. India Rhynchota ii.
- Tenthecoris bicolor*, characters, DISTANT, p. 202, Ann. Nat. Hist. xiii.
- Trachelonotus* **n. g.** near *Læmocoris*, p. 12, *T. unifasciatus* **n. sp.**, Persia, p. 13, REUTER, Annuaire Mus. St. Petersb. ix.
- Trichobasis* **n. g.** near *Pantiliodes*, p. 1, *setosa* **n. sp.**, Congo, p. 2, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Trigonotylus brevipes*, characters, REUTER, p. 5, Annuaire Mus. St. Petersb. ix.
- Turnebus* **n. g.** near *Isometopus*, *T. cuneatus* **n. sp.**, Ceylon, DISTANT, p. 485, Faun. Brit. India Rhynchota ii.
- Tylopeltis* **n. g.** near *Glossopeltis*, p. 4, *albosignata* **n. sp.**, Congo, p. 5, REUTER, Ofv. Finska Forh. xlv, No. 10.
- Tyraquellus* **n. g.** for *Leptomerochoris albofasciatus* Motsch. and *T. maculatus* **n. sp.**, Ceylon, DISTANT, p. 471, Faun. Brit. India Rhynchota ii.
- Volkelius* **n. g.** near *Sahlbergella* for *V. sulcatus* **n. sp.**, N. Queensland, DISTANT, p. 271, Ann. Nat. Hist. xiii.
- Zanchius* **n. g.** *Cyllocoraria*, *Z. annulatus* **n. sp.**, Ceylon, DISTANT, p. 477, Faun. Brit. India Rhynchota ii.
- Zanessa sanguinolenta*, Nilgiri Hills, DISTANT, p. 432, t. c. **n. sp.**

SALDIDÆ.

- Leotichius* **n. g.** *Leptopinae*, p. 406, *L. glaucopis* **n. sp.**, Burma, p. 407, DISTANT, Faun. Brit. India Rhynchota ii.
- Salda jakowleffi* var. *n. mærens*, HORVÁTH, p. 585, Ann. Mus. Hungar. ii.
- S. dizoni*, India, DISTANT, p. 405, Faun. Brit. India Rhynchota ii, **n. sp.**
- Valleriola* **n. g.** p. 405, *V. greeni* **n. sp.**, Ceylon, p. 406, DISTANT, t. c.

HYDROCORISÆ.

[Cf. DISTANT (386, 391), HORVÁTH (717, 718), KIRKALDY (813).]

- Anatomy of *Ranatra*, breathing organs etc., MARSHALL & SEVERIN, Tr. Wisconsin Ac. xiv, pp. 487-501, pls. xxxiv-xxxvi.
- Annotated catalogue of *Notonectidæ*, KIRKALDY, pp. 93-135, Wien. ent. Zeit. xxiii.
- Anisops doris*, p. 112, *stali*, p. 113, *endymion*, p. 114, Australia, *bouvieri*, Cochinchina, p. 116, KIRKALDY, t. c. **n. spp.**
- Buenoa* **n. g.** type *Anisops antigone* Kirk., p. 120, *B. ida*, Uruguay, p. 121, *salutis*, Brit. Guiana, p. 122, **n. spp.**, KIRKALDY, t. c.
- Cercotmetus fumosus*, Ceylon, DISTANT, p. 278, Entomologist 1904, **n. sp.**
- Corixa acromelana*, Turkestan, HORVÁTH, p. 585, Ann. Mus. Hungar. ii, **n. sp.**
- Helotrepes bouvieri*, Celebes, p. 129, *martini*, Sumatra, p. 130, KIRKALDY, Wien. ent. Zeit. xxiii, **n. spp.**
- Laccotrepes flavovenosa* Dohrn (as *Nepa*) = (*japonensis* Scott), DISTANT, p. 63, Ann. Nat. Hist. xiv.
- L. calcar*, Nigeria, *nyasæ*, Nyika Mts., DISTANT, p. 64, t. c. **n. spp.**
- Macrocoris transvaalensis*, Lydenburg, DISTANT, p. 258, Entomologist 1904, **n. sp.**
- Micronecta haliploides*, Colombo, p. 594, *carbonaria*, New Guinea, p. 595, HORVÁTH, Ann. Mus. Hungar. ii, **n. spp.**
- Mononyx luteovarius*, Queensland, DISTANT, p. 63, Ann. Nat. Hist. xiv, **n. sp.**
- Nepa cinerea*, salivary glands, BORDAS, C.R. Soc. Biol. lvii, pp. 667-669.
- Plea japonica*, Akashi, HORVÁTH, p. 594, Ann. Mus. Hungar. ii; *P. buenoi*, Pondicherry, KIRKALDY, p. 128, Wien. ent. Zeit. xxiii: **n. spp.**

- Ranatra sordidula* = (*unicolor* Scott), DISTANT, p. 66, Ann. Nat. Hist. xiv.
R. fuscoannulata, Ruwenzori, p. 64, *cinnamomea*, *varicolor*, *natalensis*,
 p. 65, S. Africa, DISTANT, t. c. **n. spp.**
Thurselinus **n. g.** near *Macrocoris*, *T. greeni* **n. sp.**, Ceylon, DISTANT,
 p. 259, Entomologist 1904.

HOMOPTERA.

Catalogue of *Homoptera* (except *Aphid. Coccid.*) of Germany, HUEBER,
 Jahresh. Ver. Wurttemb. lx, pp. 253-277.

CICADIDÆ.

[Cf. DISTANT (384, 393), GODING & FROGGATT (613), JACOBI (733, 736),
 MATSUMURA (922), MELICHAR (937), NOUALHIER (984), RAINBOW
 (1118).]

DISTANT (393) commences a revision of *Cicadidæ*, preliminary to a
 synonymic catalogue.

The Palearctic *Cicadidæ* (in Moravian), MELICHAR, Vestnik. Klub. Proste-
 jove iv, pp. 12-26.

Monograph of Australian *Cicadidæ*, 119 species, GODING & FROGGATT,
 P. Linn. Soc. N. S. Wales xxix, pp. 561-669, 2 pls.

Copula between *Cyclochila* and *Thopha*, RAINBOW, Rec. Austral. Mus. v,
 p. 116.

Angamiana floridula, Tonkin, DISTANT, p. 299, Ann. Nat. Hist. xiv, **n. sp.**

Antankaria **n. g.** type *C. madagascariensis* Dist., DISTANT, p. 429, t. c.

Arunta **n. g.** type *C. perulata* Guér., DISTANT, p. 302, t. c.

Cacama **n. g.** type *Proarna maura* Dist., DISTANT, p. 429, t. c.

Cicada vesta, Bombay, pl. xxx, fig. 4, *nigrans*, Madagascar, fig. 1, DISTANT,
 p. 673, Tr. ent. Soc. London 1904; *C. pyropa*, Japan, MATSUMURA,
 p. 53, pl. iii, fig. 4, Annot. zool. Japon. v; *C. andrewsi*, Japan, *umbrosa*,
 Borneo, p. 330, *boliviana*, Chimali [cf. *Oria* below], p. 331, DISTANT,
 Ann. Nat. Hist. xiv; *C. graminea*, Queensland, DISTANT, p. 428, t. c.;
C. hieroglyphica, p. 581, *sylvanella*, p. 582, Australia, GODING &
 FROGGATT, P. Linn. Soc. N. S. Wales xxix : **n. spp.**

Cicadetta montana, in Germany, pp. 283-285, Jahresh. Ver. Wurttemb. lx.

Cosmopsaltria khadiga, Pahang, DISTANT, p. 671, pl. xxx, fig. 9, Tr. ent.
 Soc. London 1904, **n. sp.**

Cryptotympana holsti, Formosa, DISTANT, p. 331, Ann. Nat. Hist. xiv; *C.*
varicolor, Sumbawa, DISTANT, p. 430, t. c. : **n. spp.**

Cystopsaltria **n. g.** *C. immaculata* **n. sp.**, Queensland, GODING & FROGGATT,
 p. 661, P. Linn. Soc. N. S. Wales xxix.

Dundubia spiculata, Cambodia; NOUALHIER, p. 178, pl. xi, figg. 3, 4,
 Mission Pavie iii, **n. sp.**

Fidicina vitellina, p. 155, *parvula*, p. 157, Brazil, JACOBI, SB. Ges. naturf.
 Berlin 1904, **n. spp.**

Gæana parviei, Tonkin, NOUALHIER, p. 179, pl. xi, fig. 5, Mission Pavie iii,
n. sp.

Glaucopsaltria **n. g.** p. 657, *G. viridis* **n. sp.**, Queensland, p. 658, GODING
 & FROGGATT, P. Linn. Soc. N. S. Wales xxix.

Hamza **n. g.** for *Platypleura bouruensis*, DISTANT, p. 674, pl. xxx, fig. 5, Tr.
 ent. Soc. London 1904.

Henicopsaltria pygmæa, S.W. Australia, DISTANT, p. 303, Ann. Nat. Hist.
 xiv, **n. sp.**

Ioba **n. g.** type *P. leopardina* Dist., DISTANT, p. 295, t. c.

Kanakia congrua, Queensland, GODING & FROGGATT, P. Linn. Soc. N. S.
 Wales xxix, **n. sp.**

- Koma* **n. g.** type *P. bombifrons* Karsch, DISTANT, p. 296, Ann. Nat. Hist. xiv.
- Kongota* **n. g.** type *P. punctigera* Walk., DISTANT, p. 298, t. c.
- Lacetas annulicornis* Karsch, pl. xlv, fig. 4, p. 769, JACOBI, Zool. Jahrb. Syst. xix.
- Macrotristria nigrovenosa*, N. Queensland, DISTANT, p. 329, Ann. Nat. Hist. xiv; *M. nigrosignata*, W. Australia, pl. xxix, fig. 7, p. 673, DISTANT, Tr. ent. Soc. London 1904 : **n. spp.**
- Melampsalta spinosa*, p. 635, *kershawi*, p. 636, *castanea*, p. 637, *rubristrigata*, *atrata*, p. 638, *fletcheri*, p. 640, *infusca*, *flava*, p. 641, *binotata*, p. 643, *rubricincta*, p. 644, *nebulosa*, *spreti*, p. 647, *fulva*, p. 648, *rubea*, p. 651, *graminis*, p. 652, *tristrigata*, p. 653, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Muansa* **n. g.** type *P. clypealis* Karsch, DISTANT, p. 295, Ann. Nat. Hist. xiv.
- Munza* **n. g.** type *P. laticlavata* Stål, DISTANT, p. 297, t. c.
- Oria* **n. g.** type *Cicada boliviana* Dist., DISTANT, p. 429, t. c.
- Parnisa hæmorrhagica*, Brazil, JACOBI, p. 159, SB. Ges. naturf. Berlin 1904, **n. sp.**
- Pauropsalta* **n. g.** p. 615, *P. leurensis*, p. 616, pl. xviii, fig. 8, *castanea*, p. 617, *prolongata*, *extensa*, p. 618, *nigristriga*, p. 619, *annulata*, p. 620, *nodicostata*, *dubia*, p. 621, *rubra*, p. 623, *basalis*, p. 625, *emma*, p. 626, *borealis*, p. 627, *minima*, p. 628, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix, **n. spp.**
- Platypleura antinorii*, p. 765, cut, JACOBI, Zool. Jahrb. Syst. xix.
- P. laticollis*, E. Africa, MELICHAR, p. 25, Verh. Ges. Wien liv; *P. longula*, Delagoa Bay, p. 332, *mira*, Laos, p. 333, *melania*, *bettoni*, Africa, p. 334, DISTANT, Ann. Nat. Hist. xiv; *P. veligera*, pl. xlv, fig. 1, p. 766, *vitticollis*, fig. 2, p. 767, N.E. Africa, JACOBI, Zool. Jahrb. Syst. xix; *P. mackinnoni*, Mussooree, p. 667, pl. xxix, fig. 1, *makaga*, fig. 4, *adouma*, fig. 2, Congo, p. 668, DISTANT, Tr. ent. Soc. London 1904; *P. arminops*, Siam, NOUALHIER, p. 178, pl. xi, figg. 1, 2, Mission Pavie iii; *P. tepperi*, Australia, GODING & FROGGATT, p. 568, pl. xviii, fig. 5, P. Linn. Soc. N. S. Wales xxx : **n. spp.**
- Pomponia surya*, pl. xxx, fig. 2, p. 671, *melanoptera*, fig. 3, p. 672, Mussooree, DISTANT, Tr. ent. Soc. London 1904, **n. spp.**
- Psaltoda plebeia*, N. S. Wales, GODING & FROGGATT, p. 589, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Pycna numa*, Mashonaland, pl. xxix, fig. 3, *hecuba*, E. Africa, fig. 6, DISTANT, p. 670, Tr. ent. Soc. London 1904; *P. celestia*, W. China, DISTANT, Ann. Nat. Hist. xiv : **n. spp.**
- Rihana* **n. g.** type *Fidicina ochracea* Walk., *R. virgulata*, Mexico, p. 426, *swalei*, hab. ? p. 427, **n. spp.**, DISTANT, t. c.
- Sadaka* **n. g.** type *P. virescens* Karsch, DISTANT, p. 296, t. c.
- Terpnosia ganesa*, India, p. 675, pl. xxx, fig. 6, *abdullah*, Pahang, p. 676, fig. 7, DISTANT, Tr. ent. Soc. 1904, **n. spp.**
- Tettigia variegata*, Townsville, GODING & FROGGATT, p. 594, pl. xviii, fig. 9, P. Linn. Soc. N. S. Wales xxix, **n. sp.**
- Tibicen sankara*, India, DISTANT, p. 675, pl. xxx, fig. 8, Tr. ent. Soc. London 1904; *T. ruber*, p. 600, *doddi*, p. 602, *rubricinctus*, p. 603, *borealis*, p. 604, *kuranda*, p. 605, *hirsutus*, p. 607, *occidentalis*, p. 608, *flavus*, p. 610, Australia, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix : **n. spp.**
- Tosena seebohmi*, Formosa, DISTANT, Ann. Nat. Hist. xiv, **n. sp.**
- Trismarcha exsul*, N. E. Africa, JACOBI, p. 768, pl. xlv, fig. 3, Zool. Jahrb. Syst. xix, **n. sp.**
- Ugada* **n. g.** type *Tettig. limbata* Fabr., DISTANT, p. 299, Ann. Nat. Hist. xiv.

- U. n. g.* for *Platypleura præcellens*, DISTANT, the insect figured, pl. xxix, fig. 9, p. 669, id. Tr. ent. Soc. London 1904.
U. nutti, Tanganyika, DISTANT, p. 336, Ann. Nat. Hist. xiv, **n. sp.**
Umjaba n. g. type *P. evanescens* Butl., DISTANT, p. 298, t. c.
Venustria n. g. *Tibeceninae*, p. 595, *V. superba n. sp.*, Queensland, p. 597, pl. xix, fig. 7, GODING & FROGGATT, P. Linn. Soc. N. S. Wales xxix.
Xosopsaltria n. n. for *Pydna*, KIRKALDY, p. 280, Entomologist 1904.
Yanga n. g. type *P. hova* Dist., DISTANT, p. 297, Ann. Nat. Hist. xiv.

FULGORIDÆ.

[Cf. FOWLER (614), HORVÁTH (716, 717), JACOBI (734, 736), KIRKALDY (809), MELICHAR (937, 938), NOUALHIER (984).]

Catalogue of *Fulgoridæ* of N. America, SWEZEY (1360).

Kareol n. n. for *Anagnia*, *Colgorma n. n.* for *Temora*, *Proutista n. n.* for *Assamia*, *Xosophara n. n.* for *Rhinortha*, *Southia n. n.* for *Paulia*, *Florichisme n. n.* for *Pæcilostola*, *Micromasoria n. n.* for *Cona*, *Bergia n. n.* for *Bergia*, *Hesperophantia n. n.* for *Carthæa*, *Thanatophantia n. n.* for *Alisca*, *Gelastophantia n. n.* for *Cyarda*, *Xosias n. n.* for *Eteocles*, *Amfortas n. n.* for *Gastrinia*, *Gelastyra n. n.* for *Cibyra*, *Thanatophara n. n.* for *Colonia*, KIRKALDY, pp. 279, 280, Entomologist 1904.

Acmonia gerstæckeri, Brazil, JACOBI, p. 160, SB. Ges. naturf. Berlin 1904, **n. sp.**

Acrobelus delphinus, Tonkin, NOUALHIER, p. 182, pl. x, fig. 10, Mission Pavie iii, **n. sp.**

Aloha n. g. near *Megamelus*, *A. ipomeæ n. sp.*, Oahu, KIRKALDY, p. 177, Entomologist 1904.

Amphiscepa calida, pl. xii, fig. 8, p. 118, *A. subpellucida*, fig. 9, p. 119, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.

Anotia smithi, pl. ix, fig. 3, *marginicornis*, fig. 4, *pellucida*, p. 77, *ruficollis*, fig. 5, *venustula*, fig. 6, *tenella*, fig. 7, p. 78, *invalida*, fig. 8, p. 79, Central America, FOWLER, t. c. **n. spp.**

Bothriocera tinealis, pl. ix, figg. 11, 12, *signoreti*, fig. 13, FOWLER, t. c.

B. venosa, pl. ix, fig. 14, *excelsa*, fig. 15, *pellucida*, fig. 16, p. 83, *albidipennis*, figg. 17, 18, *nigra*, fig. 19, p. 84, Central America, FOWLER, t. c. **n. spp.**

Bothrioceros n. g. p. 84, *B. variegatus*, pl. ix, fig. 20, *castaneus*, fig. 21, *metallicus*, fig. 22, **n. spp.**, Central America, p. 85, FOWLER, t. c.

Caliscelis, table of palaearctic, HORVÁTH, pp. 378–380, Ann. Mus. Hungar. ii.

C. maroccana, Tangier, p. 381, *bolivari*, Madrid, p. 382, *peculiaris*, Asia Minor, p. 384, id. t. c. **n. spp.**

Cedusa n. g. near *Plectoderes*, *C. funesta*, pl. xi, fig. 28, *venosa*, fig. 29, **n. spp.**, Mexico, FOWLER, p. 112, Biol. Centr.-Amer. Rhynchot. Homopt. i.

Cixius montanus, pl. x, fig. 25, *comptus*, fig. 26, p. 96, *flavobrunneus*, fig. 27, *apicatus*, fig. 28, p. 97, Central America, FOWLER, t. c. **n. spp.**

Cyclumna n. g. *Issida*, *C. subrotundata*, pl. xii, fig. 5, **n. sp.**, Mexico, FOWLER, p. 116, t. c.

Cyrene obtusata, Bangkok, NOUALHIER, p. 182, pl. x, fig. 9, Mission Pavie iii, **n. sp.**

Delphax conspicua, Turkestan, HORVÁTH, p. 589, Ann. Mus. Hungar. ii, **n. sp.**

Dendrophora breviceps, E. Africa, MELICHAR, p. 30, Verh. Ges. Wien liv, **n. sp.**

Dictyophara ogadensis, p. 38, *ufudensis*, p. 29, E. Africa, MELICHAR, t. c. ;

- D. sertata*, p. 162, *multireticulata*, p. 163, Brazil, JACOBI, SB. Ges. naturf. Berlin 1904 : **n. spp.**
- Eparmene n. g. Cixiides*, *E. pulchella*, pl. xi, fig. 6, **n. sp.**, Panama, FOWLER, p. 101, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Fulgura monetaria*, Cambodia, NOUALHIER, p. 180, pl. x, fig. 3, Mission Pavie iii, **n. sp.**
- Grynia nigricoxis*, pl. xi, fig. 9, p. 193, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Haplaxius n. g.* near *Cixius*, p. 97, *H. lævis*, pl. x, figg. 29, 30, *frontalis*, fig. 31, p. 98, **n. spp.**, Mexico, FOWLER, t. c.
- Helicopter sobrina*, pl. xi, fig. 14, var. *albido-variegata*, fig. 15, p. 106, *chiriquensis*, fig. 16, *longiceps*, fig. 17, p. 107, Centr. America, id. t. c. **n. spp.**
- Hemispheerius interclusus*, Cambodia, NOUALHIER, p. 181, pl. x, fig. 4, Mission Pavie iii, **n. sp.**
- Hyphancylus n. g. Issidæ*, *H. falcatus*, pl. xii, fig. 6, *excelsus*, fig. 7, **n. spp.**, Mexico, FOWLER, p. 117, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Hysteropterum sierræ*, pl. xii, fig. 10, p. 119, *angulare*, fig. 11, *montanum*, fig. 12, p. 120, Mexico, FOWLER, t. c. **n. spp.**
- Liburnia campestris*, natural history, and parasite, SWEZEY, pp. 43-46, Bull. U. S. Dep. Agric. Ent. xlv.
- Megamelus leahi*, Oahu, KIRKALDY, p. 176, Entomologist 1904, **n. sp.**
- Metabrixia n. g. M. delicata*, pl. ix, fig. 23, p. 86, *aspera*, fig. 24, *germana*, fig. 25, p. 87, *tacta*, pl. x, fig. 1, *maculata*, fig. 2, p. 88, **n. spp.**, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
- Micraria n. g. Cixiides*, p. 100, *M. costalis*, pl. xi, fig. 5, **n. sp.**, Mexico, p. 101, FOWLER, t. c.
- Microleida n. g. Cixiides*, *M. asperata*, pl. xi, figg. 1, 2, **n. sp.**, Mexico, FOWLER, p. 99, t. c.
- Mnemosyne planiceps*, pl. xi, figg. 7, 8, p. 102, FOWLER, t. c.
- Œcleus, seminiger*, pl. x, fig. 3, p. 89, *decens*, figg. 6, 7, p. 90, FOWLER, t. c.
- Œ. tenellus*, pl. x, fig. 4, *teapæ*, fig. 5, p. 89, *pellucens*, figg. 8, 9, *minimus*, fig. 10, p. 90, *brunneus*, fig. 11, *concinus*, fig. 12, *addendus*, fig. 13, p. 91, Central America, FOWLER, t. c. **n. spp.**
- Oliarus hirtus, frontalis*, E. Africa, MELICHAR, p. 31, Verh. Ges. Wien liv ; *O. cucullatus*, p. 180, pl. xi, figg. 7 & 8, *petasatus*, figg. 9 & 10, p. 181, Cambodia, NOUALHIER, Mission Pavie iii ; *O. excelsus*, pl. x, fig. 14, *concinulus*, fig. 15, p. 92, *propior*, fig. 16, *lacteipennis*, fig. 17, p. 93, *humeralis*, fig. 18, *breviceps*, fig. 19, *chiriquensis*, fig. 20, p. 94, *insignior*, figg. 21, 22, *nigro-alutaceus*, figg. 23, 24, p. 95, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i : **n. spp.**
- Ornithissus n. g. Issidæ*, p. 121, *O. cockerelli*, pl. xii, fig. 14, **n. sp.**, Mexico, p. 122, FOWLER, t. c.
- Pachyntheisa n. g. Cixiides*, p. 99, *P. concinna*, pl. xi, fig. 3, *excelsior*, fig. 4, **n. spp.**, Mexico, p. 100, FOWLER, t. c.
- Parapioxys viridifasciatus, hilaris*, E. Africa, MELICHAR, p. 27, Verh. Ges. Wien liv, **n. spp.**
- Patara marmorata*, Guatemala, pl. ix, fig. 9, p. 79, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i, **n. sp.**
- Peregrinus n. g. Asiracinae*, p. 175, for *Delphax maidis* Ashm., KIRKALDY, Entomologist 1904.
- Perkinsiella saccharicida*, natural history, PERKINS, Rep. exp. Stat. Hawaii 1904, pp. 43-66.
- Phylloscelis atra*, macropterous form, OSBORN, p. 93, cuts, Ohio Natural. iv.
- Plectoderes championi*, pl. xi, fig. 19, p. 108, *basalis*, fig. 20, *excelsus*, fig. 21, *flavovittatus*, fig. 22, p. 109, *notatus*, fig. 23, *montanus*, fig. 24, *asper*, fig. 25, p. 110, *lineatocollis*, fig. 26, *fuscolineatus*, fig. 27, p. 111, Central America, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i, **n. spp.**

- Pochazoides asperatus*, E. Africa, MELICHAR, p. 33, Verh. Ges. Wien liv, **n. sp.**
Proteinissus n. g. Issidae, *P. bilimeki*, pl. xii, fig. 13, **n. sp.**, Mexico, FOWLER, p. 121, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Pseudohelicoptera n. g. p. 107, *P. nasuta*, **n. sp.**, Panama, pl. xi, fig. 18, p. 108, FOWLER, t. c.
Putala apicata, E. Africa, MELICHAR, p. 29, Verh. Ges. Wien liv, **n. sp.**
Rhamphixius n. g. Cixiides, *R. championi*, **n. sp.**, Central America, pl. ix, fig. 10, FOWLER, p. 81, Biol. Centr.-Amer. Rhynchot. Homopt. i.
Rhinophantia fatua, E. Africa, MELICHAR, p. 33, Verh. Ges. Wien liv, **n. sp.**
Ricania erlangeri, E. Africa, MELICHAR, p. 32, t. c.; *R. flabellum*, Cambodia, NOUALHIER, p. 181, pl. xi, fig. 11, Mission Pavie iii : **n. spp.**
Rudia diluta, pl. xi, fig. 10, p. 104, *bicincta*, fig. 12, p. 105, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. ii.
R. proxima, pl. xi, fig. 11, p. 104, *verticalis*, fig. 13, p. 105, Central America, FOWLER, t. c. **n. spp.**
Seliza squamula, E. Africa, MELICHAR, p. 34, Verh. Ges. Wien liv, **n. sp.**
Thionia variegata, pl. xii, figg. 15, 16, p. 122, FOWLER, Biol. Centr.-Amer. Rhynchot. Homopt. i.
T. brevior, pl. xii, fig. 17, *scutellata*, fig. 18, p. 123, *sordida*, fig. 19, *humilis*, fig. 20, *naso*, fig. 21, p. 124, Mexico, FOWLER, t. c. **n. spp.**
Ulixes clypeatus, pl. xii, fig. 1, p. 114, FOWLER, t. c.
U. intermedius, Mexico, pl. xii, figg. 3, 4, p. 115, FOWLER, t. c. **n. sp.**

FLATIDES.

[Cf. JACOBI (734), SCHMIDT (1228, 1228).]

- Atracis dentata*, Benue, SCHMIDT, p. 376, Stettin Ent. Zeit. lxx, **n. sp.**
Bythopsyrna, analysis, p. 186, *B. ligata* ♂, p. 189, SCHMIDT, t. c.
B. dohrni, p. 188, *udei*, p. 189, *sumatrana*, p. 191, *violacea*, p. 209, Sumatra, SCHMIDT, t. c.; *B. rabbowi*, Java, SCHMIDT, p. 355, t. c. : **n. spp.**
Cerynia nigropustulata, Sumatra, SCHMIDT, t. c. **n. sp.**
Copsyrna alma, Sumatra, SCHMIDT, p. 185, t. c. **n. sp.**
Dascalina punctata, Pará, p. 373, *unimaculata*, Ecuador, p. 374, SCHMIDT, t. c. **n. spp.**
Doria haenschii, p. 356, *ecuadoriana*, p. 357, Ecuador, SCHMIDT, t. c. **n. spp.**
Euphanta luridicosta, p. 359, *rubromarginata*, p. 360, Queensland, SCHMIDT, t. c. **n. spp.**
Flata ferruginea, Borneo, SCHMIDT, p. 354 and var. *æruginea*, p. 355, t. c. **n. sp.**
Flatoides similans, Ecuador, SCHMIDT, p. 378, t. c. **n. sp.**
Flatoptera virescens, Borneo, SCHMIDT, p. 358, t. c. **n. sp.**
Flatula bipunctata, Borneo, SCHMIDT, p. 362, t. c. **n. sp.**
Ormenis maculata, S. America, p. 363, *panamensis*, Panama, p. 364, *fumata*, Ecuador, p. 365, *pehlkei*, Colombia, p. 366, *teniata*, Sumatra, p. 368, *prasina*, Ceylon, p. 370, SCHMIDT, t. c. **n. spp.**
Nephesa truncaticornis ♂, SCHMIDT, p. 203, t. c.
N. carinulata, p. 205, *aurantiaca*, p. 211, Sumatra, id. t. c. **n. spp.**
Paratella variegata, Obi, SCHMIDT, p. 370, t. c. **n. sp.**
Phyma unipunctata, *pura*, p. 196, *hyalina*, *griseo-punctata*, p. 197, *waterstradti*, p. 211, Sumatra, SCHMIDT, t. c.; *P. subapicalis*, Amboina, SCHMIDT, p. 361, t. c. : **n. spp.**
Pæciloptera phalaenoides and allies, table of forms, p. 14, *P. fritillaria* = (*suturata* Mel.), p. 7, *P. melichari* n. n. for *fritillaria* Mel. nec Er., p. 9, *P. phalaenoides* subspp. n. *completa*, p. 12, *parca*, p. 13, JACOBI, SB. Ges. naturf. Berlin 1904.
P. miliaria, Colombia, p. 8, JACOBI, t. c. **n. sp.**

- Pseudoryxa* n. g. near *Oryxa*, p. 200, *P. carinulata* n. sp., Sumatra, p. 201, SCHMIDT, Stettin Ent. Zeit. lxxv.
Sanurus venosus ♂, SCHMIDT, p. 194, t. c.
Sephena tricolor, Java, SCHMIDT, p. 372, t. c. n. sp.
Siphanta rubra, Queensland, SCHMIDT, p. 358, t. c. n. sp.
Uxantis tenia, Sumatra, SCHMIDT, p. 206, t. c. n. sp.
Walkeria melichari, Sumatra, SCHMIDT, p. 192, t. c. n. sp.

MEMBRACIDÆ.

The Palæarctic *Membracidæ* and *Cercopidæ* (in Moravian), MELICHAR, pp. 3-34, Vestnik. Klub. Prostějov iv.

Leptocentrus subflavus, Cambodia, NOUALHIER, p. 183, pl. x, fig. 5, Mission Pavie iii, n. sp.

CERCOPIDÆ.

[Cf. BREDDIN (172), GIRAULT (612), JACOBI (733, 735), MATSUMURA (922), NOUALHIER (984).]

- Anomus cornutus*?, relations with ants, PENZIG, pp. 64-67, pl. ii, Atti Soc. Ligustica xv.
Aphrophora assimilis Uhl. = (*Rhinaulax apicalis*), *A. vittata* var. = (*nijima* Mats.), MATSUMURA, p. 32, Annot. zool. Japon. v; *A. parallela*, habits, froth-formation, GIRAULT, pp. 44-48, Canad. Ent. xxxvi.
A. scutellata, p. 34, pl. ii, fig. 8, *brevis, compacta*, fig. 7, p. 35, *fallax*, p. 36, *abieti*, fig. 6, p. 37, *flavomaculata*, fig. 3, p. 39, *harimaensis*, fig. 11, p. 41, *vitis*, fig. 9, p. 42, *nigricans*, p. 43, Japan, MATSUMURA, Annot. zool. Japon. v, n. spp.
Callitettix carinifrons, Siam, NOUALHIER, p. 184, pl. x, fig. 8, and pl. xi, fig. 3, Mission Pavie iii, n. sp.
Clovira callifera, pl. xlv, fig. 15, p. 777, JACOBI, Zool. Jahrb. Syst. xix.
Cosmoscarta undata var. n. *obscurata*, NOUALHIER, p. 183, pl. x, fig. 6, Mission Pavie iii.
C. carens, Tonkin, NOUALHIER, p. 183, pl. x, fig. 7, t. c. n. sp.
Hemipterus n. g. p. 777, near *Tremapterus*, *H. decurtatus* n. sp., Kaffa, p. 778, pl. xlv, fig. 16, JACOBI, Zool. Jahrb. Syst. xix.
Locris amauroptera, p. 772, pl. xlv, fig. 7, *neumannii*, p. 773, fig. 9, *vestigans*, p. 774, fig. 10, N. E. Africa, JACOBI, t. c.; *L. ochroptera*, E. Africa, JACOBI, p. 16, SB. Ges. naturf. Berlin 1904 : n. spp.
Mesoptelyelus n. g. p. 48, *M. nigrifrons*, pl. ii, fig. 13, p. 49, n. sp., Japan, MATSUMURA, Annot. zool. Japon. v.
Oxyrrhacis tarandus, nymph, JACOBI, p. 17, SB. Ges. naturf. Berlin 1904.
Peuceptelyelus nawæ, p. 44, pl. ii, fig. 14, *nigroscutellatus*, fig. 16, p. 45, *medius*, fig. 15, *dimidiatus*, p. 47, Japan, MATSUMURA, Annot. zool. Japon. v, n. spp.
Poophilus terrenus Walk., pl. xlv, fig. 13, *griseus*, Schaum, fig. 14, p. 776, JACOBI, Zool. Jahrb. Syst. xix.
Ptyelus æthiops, N. E. Africa, JACOBI, p. 775, pl. xlv, fig. 12, t. c.; *P. bipunctulatus*, E. Africa, MELICHAR, p. 36, Verh. Ges. Wien liv : n. spp.
P. abieti, pl. ii, fig. 17, p. 50, *guttatus*, pl. iii, fig. 2, p. 51, *glabrifrons*, fig. 3, p. 52, Japan, MATSUMURA, Annot. zool. Japon. v : n. spp.
Tomaspis invenusta, Sobat, JACOBI, p. 771, pl. xlv, fig. 6, Zool. Jahrb. Syst. xix; *T. laqueus, erigenea, rhodopepla, nox, illuminatula, phantastica*, p. 58, *ephippiata, tettigoniella*, p. 59, Ecuador, BREDDIN, Soc. ent. xix : n. spp.

JASSIDÆ.

[Cf. ASHMEAD (54), BRÈTHES (175), HORVÁTH (717), JACOBI (733), KIRKALDY (809), MELICHAR (937), MEUNIER (944), NOUALHIER (984), SLINGERLAND (1306).]

For a nov. gen. of *Jassidæ* of secondary epoch, see Palæoent. p. 125.

Alchisme **n. n.** for *Triquetra*, *Mysolis* **n. n.** for *Norsia*, *Thrasymedes* **n. n.** for *Phacusa*, *Gelastogonia* **n. n.** for *Oxygonia*, *Boethoos* **n. n.** for *Parmula*, *Eteoneus* **n. n.** for *Anomus*, *Kronides* **n. n.** for *Argante*, *Sundarion* **n. n.** for *Pyranthe*, *Zanophara* **n. n.** for *Daunus*, *Gelastophara* **n. n.** for *Hypselotropis*, *Hesperophara* **n. n.** for *Leptophara*, *Dioclophara* **n. n.** for *Lucilla*, KIRKALDY, p. 279, Entomologist 1904.

Cicadula clypeata, E. Africa, MELICHAR, p. 47, Verh. Ges. Wien liv; *C. ungae*, Alaska, ASHMEAD, p. 134, Alaska viii : **n. spp.**

Deltocephalus stummeri, Turkestan, HORVÁTH, p. 587, Ann. Mus. Hungar. ii; *D. coronatus*, p. 45, *ageratus*, p. 46, E. Africa, MELICHAR, Verh. Ges. Wien liv; *D. harrimani*, *evansi*, Alaska, ASHMEAD, p. 132, Alaska viii; *D. hospes*, Oahu, KIRKALDY, p. 177, Entomologist 1904 : **n. spp.**

Ectomops rubescens, Siam, NOUALHIER, p. 185, pl. x, fig. 12, Mission Pavie iii, **n. sp.**

Eutettix quadripunctatus, E. Africa, MELICHAR, p. 44, Verh. Ges. Wien liv; *E. perkinsi*, Oahu, KIRKALDY, p. 178, Entomologist 1904 : **n. spp.**

Gnathodus punctatus var. *n. lineolatus*, HORVÁTH, p. 586, Ann. Mus. Hungar. ii.

G. bipunctatus, E. Africa, MELICHAR, p. 47, Verh. Ges. Wien liv, **n. sp.**

Hecalus dubius, E. Africa, MELICHAR, p. 36, t. c.; *H. platatea*, Siam, NOUALHIER, p. 184, pl. x, fig. 11, Mission Pavie iii : **n. spp.**

Idiocerus almasyi, Turkestan, HORVÁTH, p. 588, Ann. Mus. Hungar. ii, **n. sp.**

Jassus tornowii, Tucuman, BRÈTHES, p. 344, An. Mus. Buenos Aires xi, **n. sp.**

Macropsis serena, E. Africa, MELICHAR, p. 35, Verh. Ges. Wien liv, **n. sp.**

Palicus africanus, p. 40, *conjunctus*, p. 41, E. Africa, MELICHAR, t. c. **n. spp.**

Parabolocratus tænionotus, Jambo, JACOBI, p. 780, pl. xlv, fig. 17, Zool. Jahrb. Syst. xix, **n. sp.**

Pediopsis pictipes, Turkestan, HORVÁTH, p. 589, Ann. Mus. Hungar. ii, **n. sp.**

Phlepsius chloroticus, p. 38, *fasciolatus*, p. 39, *rhomboides*, p. 40, E. Africa, MELICHAR, Verh. Ges. Wien liv, **n. spp.**

Platymetopius niveimarginatus, E. Africa, MELICHAR, p. 43, t. c. **n. sp.**

Scaphoideus strigulatus, E. Africa, MELICHAR, p. 42, t. c. **n. sp.**

Siva bipunctula, E. Africa, MELICHAR, p. 38, t. c. **n. sp.**

Stymphalus? *caliger*, E. Africa, MELICHAR, p. 37, t. c. **n. sp.**

Tettigometra impressifrons and *costulata*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.

Tettigoniella **n. n.** for *Tettigonia* auctt., JACOBI, p. 778, Zool. Jahrb. Syst. xix.

Thamnotettix macilentus, Turkestan, HORVÁTH, p. 586, Ann. Mus. Hungar. ii, **n. sp.**

Typhlocyba comes, the grape leaf-hopper, natural history, SLINGERLAND, Bull. Cornell Exp. Stat. No. 215, illustrations.

PSYLLIDÆ.

[Cf. ASHMEAD (55), HORVÁTH (717), SCHWARZ (1263).]

Structure formed by larva on leaves, SCHWARZ, pp. 153, 154, P. ent. Soc. Washington vi.

- Aphalara schwarzi*, p. 135, *kincaidi*, *alaskensis*, p. 136, Alaska, ASHMEAD, Alaska viii, **n. spp.**
Calophya triozae, p. 241, *californica*, p. 242, *flavida*, p. 243, cuts, p. 244, SCHWARZ, P. ent. Soc. Washington vi, **n. spp.**
Euphalerus n. g. Apharinæ, p. 238, *E. nidifex n. sp.*, p. 239, Florida, SCHWARZ, t. c.
Euphyllura arctostaphyli, p. 235, and var. *niveipennis*, p. 236, *arbuti*, p. 237, N. America, SCHWARZ, t. c. **n. spp.**
Psylla nasuta, Turkestan, HORVÁTH, p. 590, Ann. Mus. Hungar. ii; *P. alaskensis*, Alaska, ASHMEAD, p. 137, Alaska viii : **n. spp.**
Trichochermes n. n. for *Trichopsylla*, KIRKALDY, p. 280, Entomologist 1904.

APHIDÆ.

[Cf. BALBIANI (77), CHOLODKOVSKY (273, 274), COCKERELL (288), FLÖGEL (519), FROGGATT (562), PERGANDE (1023-1025), SCHOUTEDEN (1240), STAUFFACHER (1335), STSCHELKANOVZEW (1352), THEOBALD (1375).]

The forms and development of *Aphis ribis*, FLÖGEL, Allg. Zeitschr. Ent. ix, pp. 321-333 and 375-381.

Organ of hearing, *Chermes*, STAUFFACHER (1335).

Sex in *Aphidæ*, BALBIANI (77).

Oogenesis in viviparous *Aphis rosæ*, STSCHELKANOVZEW (1352).

The wax-glands of *Chermes*, CHOLODKOVSKY, p. 557, pl. xxxi, figg. 4-6, Zool. Jahrb. Syst. xix.

Panaphis n. n. for *Ptychodes*, *Dryaphis n. n.* for *Dryobius*, *Hamadryaphis n. n.* for *Kessleria*, *Dryopeia n. n.* for *Endeis*, *Hyadaphis n. n.* for *Siphonocoryne* Pass. 1863 not 1860, KIRKALDY, p. 279, Entomologist 1904.

Aphis persicæ-niger in Australia, FROGGATT, Agric. Gaz. N. S. W. xv, pp. 603-612.

A. sorghi, Sudan, injuring *Sorghum*, THEOBALD, p. 43, plate, 1st Rep. Wellcome Lab. **n. sp.**

Cerataphis lataniæ, note, SCHOUTEDEN, p. 5, Hamburg, Magalhaen. Reise vii.

Chermes, in Colorado, GILLETTE, p. 81, Canad. Ent. xxxvi; *C. orientalis*, gall, *C. pini* variable in migration, distinction queried, CHOLODKOVSKY, pp. 476-479, Zool. Anz. xxvii.

Cladobius beaulahensis, New Mexico, COCKERELL, p. 263, Canad. Ent. xxxvi, **n. sp.**

Macrosiphum granaria, *cerealis*, forms, natural history; PERGANDE, p. 13-21, Bull. Dep. Agric. Ent. xlv; *M. ambrosiæ* var., COCKERELL, p. 262, Canad. Ent. xxxvi.

M. trifolii, N. America, PERGANDE, p. 21, Bull. U. S. Dep. Agric. Ent. xlv, **n. sp.**

Phylloxera caryæ-septum var. *n. perforans*, pl. i, figg. 7, 8, pl. x, figg. 57-60, PERGANDE, P. Davenport Ac. ix.

P. picta, pl. ii, fig. 10, pl. ix, fig. 48, pl. x, figg. 61-63, p. 197, *intermedia*, pl. ii, figg. 11-14, pl. x, figg. 64, 65, p. 199, *foveola*, pl. iii, figg. 15, 16, p. 200, *pilosula*, pl. ii, fig. 17, pl. ix, fig. 49, p. 202, *deplanata*, p. 205, pl. iii, figg. 18-20, pl. iv, figg. 21-23, pl. x, figg. 66-70, *rimosalis*, p. 217, pl. iv, fig. 24, pl. ix, fig. 54, *symmetrica*, p. 230, with varr. *vasculosa*, *purpurea*, p. 233, *notabilis*, p. 235, pl. xii, figg. 82-90, *spinuloida*, p. 247, pl. xvii, figg. 128, 130, *devastatrix*, p. 248, figg. 131-135, *georgiana*, p. 249, pl. xv, figg. 115-117, *perniciosa*, p. 251, pl. viii, fig. 45, pl. xv, figg. 120-123, pl. xviii, figg. 136-140, *querceti*, p. 263, pl. xx, figg. 155-158, *popularia*, p. 266, pl. xxi, figg. 159, 160, *salicicola*, p. 267, pl. xxi, figg. 161-168, *nyssæ*, p. 269, pl. xxi, figg. 169-174, North America, PERGANDE, t. c. **n. spp.**

- Rhopalosiphum acænæ*, Tierra del Fuego, SCHOUTEDEN, p. 4, Hamburg. Magalhaen. Reise vii, **n. sp.**
Sipha berlessei, characters, DEL GUERCIO, p. 4, Bull. Soc. ent. Ital. xxxvi.
Siphocoryne avenæ, natural history, synonymy, PERGANDE, pp. 5-13, Bull. Dep. Agric. Ent. xlv.

ALEYRODIDÆ.

Descriptions of many species, with account of life-history and habits, BEMIS, pp. 471-537, pls. xxvii-xxxvii.

- Aleyrodes iridescentis*, p. 487, *splendens*, p. 489, *pruinosis*, p. 491, *tentaculatus*, p. 494, *kelloggi*, p. 499, *errans*, p. 500, *madroni*, p. 507, *stanfordi*, p. 508, *interrogationis*, p. 510, *merlini*, p. 512, *amnicola*, p. 514, *diasemus*, p. 516, *glacialis*, p. 518, *quaintancei*, p. 520, *nigrans*, p. 522, *maskelli*, p. 524, *wellmanæ*, p. 525, *extraniens*, p. 526, *hutchingsi*, p. 532, California, BEMIS, P. U. S. Mus. xxvii, **n. spp.**

COCCIDÆ.

(Cf. BERLESE (106), COCKERELL (294, 295), EMBLETON (450, 451), FROGGATT (560), GREEN (620, 622-626), KIRKALDY (810, 811), MARCHAL (909, 913), MAZZARELLI (929), REH (1126, 1127), REUTER (1159), SANDERS (1207, 1208), STEBBING (1336).]

The nomenclature of *Hemiptera* and specially of *Coccidæ*; KIRKALDY, pp. 254-258, Entomologist 1904.

GREEN publishes part 3 of the *Coccidæ* of Ceylon; it deals with *Lecanium*; in a supplementary note he deals cautiously with recently proposed transfers of some of the oldest generic names, which would, if effected, be "a grave misfortune."

Coccidæ of Orange, table, COCKERELL, Mem. Soc. Ant. Alzate xiii, pp. 349-351.

Notes on methods of research etc., EMBLETON, Knowledge (n. s.) i, pp. 224 etc.

The *Coccidæ* of Ohio, descriptive list, 9 plates, SANDERS (1208).

Notes on the natural history of North European *Coccidæ*, conclusion, 19 spp., list of plants and the species found on them, REH, Allg. Zeitschr. Ent. ix, pp. 12-36.

Distribution and food plants of some *Diaspini*, REH, pp. 171-178.

Amelococcus **n. g.** *A. alluaudi* **n. sp.**, Madagascar, MARCHAL, p. 557, Ann. Soc. ent. France 1904.

Antonina australis, Hunter River, GREEN, p. 463, pl. xvi, P. Linn. Soc. N. S. Wales xxix, **n. sp.**; *A. australis*, FROGGATT, pp. 407-410, plate, Agric. Gaz. N. S. W. xv.

Aspidiotus ancylus, taxonomy, synonymy, variation, COCKERELL, P. Davenport Ac. ix, pp. 61, 62.

A. (Pseudanididia) curculiginis, Java, GREEN, p. 208, Ent. Mag. xl; *A. (Hemiberlesia) immaculatus*, p. 65, *A. (Targionia) subfervens*, p. 66, Victoria, GREEN, Victorian Natural. xxi; *A. piceus*, Ohio, SANDERS, p. 96, pl. viii, fig. 66, Ohio Natural. iv: **n. spp.**

Asterolecanium variolosum, galls, DE STEFANI, L'Ora 1904, 8 pp.: cf. Marcellia iii, p. v.

Chetococcus and *Antonina*, identical, GREEN, p. 465, P. Linn. Soc. N. S. Wales xxix.

Chionaspis furfurus, no. of eggs, GIRAULT, p. 3, Ent. News Philad. xv.

C. formosa, Australia, GREEN, p. 462, P. Linn. Soc. N. S. Wales xxix;

- C. angusta*, Victoria, GREEN, p. 67, Victorian Natural. xxi; *C. sylvatica*, Ohio, SANDERS, p. 95, pl. viii, figg. 64, 65, Ohio Natural. iv : **n. spp.**
- Chrysomphalus minor*, spread in Europe, natural history, MARCHAL, pp. 246-249, Bull. Soc. ent. France 1904.
- Cryptococcus fagi*, injuries and remedies, NEWSTEAD, pp. 755-760, J. Board Agric. xi.
- Ctenochiton serratus*, Victoria, GREEN, p. 67, Victorian Natural. xxi, **n. sp.**
- Coccus caudatus*, *poterii* Walk. notes on, p. 373, *C. sinensis*, cf. *Ericera pela*, GREEN, Ann. Nat. Hist. xiv.
- Diaspis pentagona*, anatomical and physiological notes, MAZZARELLI, Atti Mus. Milano xliii, pp. 15-19.
- Ericera pela* = (*Coccus sinensis* Walk.), GREEN, p. 374, Ann. Nat. Hist. xiv.
- Eriococcus sordidus*, Australia, GREEN, p. 68, Victorian Natural. xxi, **n. sp.**
- Eulecanium curtisi* n. n. for *Coccus aceris* Curtis, KIRKALDY, p. 257, Entomologist 1904.
- Kermes gillettei*, no. of eggs, HIMEBAUGH, p. 188, Ent. News Philad. xv.
- Lecanium* (*Paralecanium*) *expansum* var. *metallicum*, GREEN, p. 377, Ann. Nat. Hist. xiv; *L. capense* Walk. redescribed as *Aspidiotus* (*Aonidiella*) *capensis*, GREEN, p. 375, t. c.; *L. hesperidum*, ♂ in Australia, HOWARD, p. 62, P. ent. Soc. Washington vi; *L. expansum* varr. *n. metallicum*, *javanicum*, p. 205, *rotundum*, p. 206; GREEN, Ent. Mag. xl.
- L. capparidis*, p. 187, pl. lxiii, *frontale*, p. 192, pl. lxv, *signiferum*, p. 197, pl. lxviii, *discrepans*, p. 204, pl. lxx, *punctuliferum*, p. 205, pl. lxx, *subtessellatum*, p. 206, pl. lxxi, *marsupiale*, p. 212, pl. lxxv, *bicruciatum*, pl. 214, pl. lxxvi, *arundinariæ*, p. 220, pl. lxxix, *psidii*, pl. lxxxii, p. 225, *calophylli*, p. 240, pl. lxxxix, *paradeniyense*, p. 241, pl. xc, *zonatum*, pp. 245, pl. xcii, *maritimum*, p. 246, pl. xciii, Ceylon, GREEN, *Coccidæ*, Ceylon; *L. tenebricophilum*, Java, GREEN, p. 204, Ent. Mag. xl : **n. spp.**
- Lepidosaphes cockerelliana* n. n. for *Mytilaspis albus* Cock., KIRKALDY, p. 257, Entomologist 1904.
- L. corrugata*, Java, GREEN, p. 209, Ent. Mag. xl, **n. sp.**
- Margarodes*, longevity, MAYET, p. 206, Bull. Soc. ent. France 1904.
- Monophlebus stebbingi*, natural history, STEBBING, J. Linn. Soc. London xxix, pp. 142-161, pls. xvi-xviii.
- Mytilaspis spinifera*, amended characters, GREEN, p. 463, P. Linn. Soc. N. S. Wales xxix.
- M. ficifolii*, Italy, BERLESE, Atti Ist. Napoli (5) v, No. 12, p. 3, plate, **n. sp.**
- Orthezia solidaginis*, Ohio, SANDERS, p. 94, pl. viii, figg. 57-63, Ohio Natural. iv, **n. sp.**
- Pseudococcus graminis*, Finland, REUTER, p. 66, Medd. Soc. Faun. Fenn. 1902-03, **n. sp.**
- Pulvinaria maxima*, Java, GREEN, p. 206, Ent. Mag. xl, **n. sp.**
- Trionymus hordei*, omitted from Fernald's Cat., Ent. News Philad. xv, p. 40.

ANOPLURA.

- Ellipoptera* n. n. for *Anoplura*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- The mouth-parts and external anatomy, ENDERLEIN, pp. 121-125, Zool. Anz. xxviii.
- The classification and systematic position of *Anoplura*, table of genera etc., ENDERLEIN, t. c. pp. 134-140, and supplement, p. 220.
- Organs for holding, on feet of *Pediculidæ*, OSBORN, Ohio Natural. iv, pp. 107, 108, cuts.
- The *Pediculidæ* of rats and mice, TIRABOSCHI, pp. 311-319, Arch. parasit. viii.

- Hæmodipsas* **n. g.** for *lyriocephalus*, Burm. and *ventricosus* Denny, ENDERLEIN, Zool. Anz. xxviii, p. 143.
- Hoplopleura* **n. g.** type *H. acanthopus* Burm., ENDERLEIN, t. c. p. 221.
- Lepidophthirus* **n. g.** on *Macrorhinus leoninus*, Kerguelen isld., p. 44, *L. macrorhini* **n. sp.**, p. 46, ENDERLEIN, Zool. Anz. xxviii.
- Polyplax* **n. g.** for part of *Hæmatopinus*, type *spinulosa* Burm., ENDERLEIN, p. 142, t. c.
- Solenopotes* **n. g.** p. 143, for *S. capillatus* **n. sp.**, Leipzig, p. 144, ENDERLEIN, t. c.
- Trichaulus* **n. g.** p. 141, for *piliferus* Burm. etc., ENDERLEIN, Zool. Anz. xxviii.

(F.) *NEUROPTERA*, s. l.

TRICHOPTERA.

[Cf. BANKS (82-85, 87), Klapálek (817), MORTON (963), RIS (1175), SILFVENIUS (1293-1296), STITZ (1349), STRUCK (1351), THIENEMANN (1382-1384), ULMER (1417-1422).]

The morphology of the genitalia in various families, with numerous figures, Klapálek, pp. 161-197, v plates and illustrations, Bull. Ceska Ac. viii.

Male and female sexual organs, and their relations with those of *Microlepidoptera*, STITZ (1349).

Trichoptera larvæ using stems as cases, SILFVENIUS, pp. 147-150, cuts, Allg. Zeitschr. Ent. ix.

Cases in the light of protection and breathing for larva and pupa, THIENEMANN, Zool. Anz. xxvii, pp. 724-730.

Peculiar structure on abdomen of *Æcetis*, ? sense-organ, RIS, Vierteljahrschr. Ges. Zurich xlix, pp. 370-374, pl. xii.

Hydropsyche etc. attacking wood of bridges, SILFVENIUS, pp. 54-57, Medd. Soc. Faun. Fenn. 1902/03.

Adicella filicornis, early stages, MORTON, pp. 82-84, pl. i, Ent. Mag. xl.

Allotrichia signata, Washington, BANKS, p. 215, P. ent. Soc. Washington vi, n. sp.

A. maculata, Washington, BANKS, p. 116, Ent. News Philad. xv, n. sp.

Anabolia spinosa, Patagonia, ULMER, p. 11, Hamburg. Magalhaen. Reise vii, n. sp.

Beræa pullata, larva, ULMER, p. 286, Mt. Mus. Hamburg. xx, Beih. ii.

Cyrnus flavidus, pp. 7-10, pl. figg. 2, *C. insolutus*, pp. 10-12, pl. figg. 3, larvæ and pupæ, SILFVENIUS, Acta Soc. Faun. Fenn. xxvi, No. 2.

C. pallidus, Washington, BANKS, p. 214, P. ent. Soc. Washington vi, n. sp.

Dicosmoecus maculatus, New Mexico, BANKS, p. 107, Tr. Amer. ent. Soc. xxx, n. sp.

Dipseudopsis, trophi, ULMER, Zool. Anz. xxviii, p. 58, cuts.

Drusus discolor, case, THIENEMANN, p. 257, Allg. Zeitschr. Ent. ix.

Glossosoma nylanderi, characters of type, SILFVENIUS, p. 171, Medd. Soc. Faun. Fenn. 1902/03.

G. parvula, p. 108, *ventralis*, p. 109, New Mexico, BANKS, Tr. Amer. ent. Soc. xxx, n. spp.

Glyphopsyche n. g. near *Glyphotetius*, *G. bryanti* n. sp., British Columbia, BANKS, p. 141, P. ent. Soc. Washington vi.

Halesoma radiatus ♂ genitalia, ULMER, p. 283, Mt. Mus. Hamburg xx, Beih. ii.

H. taylori, Brit. Columbia, BANKS, p. 140, P. ent. Soc. Washington vi, n. sp.

Helicopsyche annulicornis, Washington, BANKS, p. 212, t. c. n. sp.

Holocentropus dubius, larva and pupa, SILFVENIUS, pp. 3-6, pl. figg. 1, Acta Soc. Faun. Fenn. xxvi, No. 2.

Hyalopsyche n. g. *Polycentropini*, p. 357, *H. palpata* n. sp., W. Africa, p. 358, ULMER, Zool. Anz. xxviii.

- Hydropsyche sexfasciata*, Cameroons, ULMER, p. 421, Arkiv Zool. i; *H. speciosa*, Washington, BANKS, p. 214, P. ent. Soc. Washington vi; *H. novamexicana*, New Mexico, BANKS, p. 110, Tr. Amer. ent. Soc. xxx: n. spp.
- Hydroptilides*, larvæ, pupæ and cases of 11 species, 6 of them previously unknown, SILFVENIUS, Acta Soc. Faun. Fenn. xxvi, No. 6, 38 pp., 2 pls.
- Hydroptilula cintrana*, Portugal, MORTON, p. 324, Tr. ent. Soc. London 1904, n. sp.
- Leptocerus flavus*, Washington, BANKS, p. 212, P. ent. Soc. Washington vi, n. sp.
- Limnophilus ignavus*, larva and pupa, ULMER, p. 55, Allg. Zeitschr. Ent. ix.
- L. michaelsoni*, p. 7, *armatus*, p. 8, *patagonicus*, p. 9, *setipes*, p. 10, Patagonia, ULMER, Hamburg. Magalhaen. Reise vii, n. spp.
- Macronema sjostedti*, Cameroons, ULMER, p. 419, Arkiv Zool. i, n. sp.
- Mesophylax impunctatus*, metamorphoses, ULMER, pp. 57–59, Allg. Zeitschr. Ent. ix.
- Metanæa flavipennis*, metamorphoses, THIENEMANN, pp. 212–215, Allg. Zeitschr. Ent. ix.
- Mystacides nigra* and *longicornis*, pupæ, THIENEMANN, p. 261, t. c.
- Neuronina clathrata*, metamorphoses, STRUCK, pp. 2–7, Mt. Ges. Lubeck (2) xix.
- Nyctiophylax occidentalis*, W. Africa, ULMER, p. 355, Zool. Anz. xxviii, n. sp.
- Æstropsis bipunctata* ♂, ULMER, p. 413, Arkiv Zool. i.
- Orthotrichia pallida*, Washington, BANKS, p. 215, P. ent. Soc. Washington vi; *O. americana*, Washington, BANKS, p. 116, Ent. News Philad. xv: n. spp.
- Oxyethira mirabilis*, Scotland, MORTON, p. 327, Tr. ent. Soc. London 1904; *O. dorsalis*, Washington, BANKS, p. 216, P. ent. Soc. Washington vi: n. spp.
- Plectrotarsus*, trophi, ULMER, Zool. Anz. xxviii, p. 58, cuts.
- Polycentropina*, larvæ and pupæ, SILFVENIUS, p. 13, Acta Soc. Faun. Fenn. xxvi, No. 2.
- Potamorites biguttatus*, metamorphosis, THIENEMANN, pp. 258–261, Allg. Zeitschr. Ent. ix.
- Protomacronema* n. g. p. 416, *P. pubescens* n. sp., Cameroons, p. 417, ULMER, Arkiv Zool. i; *P. hyalinum*, W. Africa, ULMER, p. 354, Zool. Anz. xxviii, n. sp.
- Protoptila* for *Beræa maculata* Hag., BANKS, p. 215, P. ent. Soc. Washington vi, n. sp.
- Psilopteryx*? *brevipennis*, New Mexico, BANKS, p. 108, Tr. Amer. ent. Soc. xxx, n. sp.
- Ptilocolepus granulatus*, habits, metamorphoses, taxonomy, THIENEMANN, pp. 418–424, Allg. Zeitschr. Ent. ix.
- Rhyacophila stigmatica*, New Mexico, BANKS, p. 108, Tr. Amer. ent. Soc. xxx, n. sp.
- Stactobia eatoniella*, larva, THIENEMANN, p. 261, Allg. Zeitschr. Ent. ix.
- Stenophylax branchiatus*, p. 17, *S.?* *appendiculatus*, p. 19, Patagonia, ULMER, Hamburg. Magalhaen. Reise vii, n. spp.

NEUROPTERA-PLANIPENNIA (incl. PANORPIDÆ).

[Cf. BANKS (81, 82), CURRIE (334, 335), FROGGATT (557, 562), KEMPNY (785, 1232), KIRBY (806), NAVÁS (974–976), WEELE (1501), XAMBEU (1539).]

HEMEROBIIDÆ and PANORPIDÆ.

- Acanthaclisis maclachlani*, N. W. Australia, VAN DER WEELE, p. 210, Notes Leyden Mus. xxiv, **n. sp.**
- Albardia furcata*, characters, WEELE, p. 203, t. c.
- Ascalaphus immaculatus*, the type, WEELE, p. 204, t. c.; *A. maculatus* type, is *niger* Borkh., WEELE, p. 167, t. c.; *A. ictericus* and *meridionalis*, larva and habits, XAMBEU, pp. 121, 123, Ann. Soc. Linn. Lyon l.
- Berotha piepersii*, Java, WEELE, p. 214, Notes Leyden Mus. xxiv, **n. sp.**
- Brachynemurus elongatus*, New Mexico, BANKS, p. 105, Tr. Amer. ent. Soc. xxx, **n. sp.**
- Chasmatoptera sheppardi*, Asia Minor, KIRBY, p. 60, Ann. Nat. Hist. xiv, **n. sp.**
- Chrysopa vulgaris* var. *n. radialis*, p. 119, *nigricostata* var. *n. marginata*, p. 120, *C. inornata*, full description, p. 124, NAVÁS, Bol. Soc. Aragon. iii; *C. vulgaris*, larva, XAMBEU, pp. 215–217, Ann. Soc. Linn. Lyon l.
- C. iberica*, Moncayo etc., NAVÁS, p. 99, Bol. Soc. Aragon. ii; *C. cosmeta*, Madrid, NAVÁS, p. 125, op. cit. iii; *C. jaluitana*, Marshall Islands, KEMPNY, p. 403, Zool. Jahrb. Syst. xx; *C. juluitana*, Marshall Islands, p. 353, *vicina*, Australia, p. 354, KEMPNY, Verh. Ges. Wien liv: **n. spp.**
- Cordulecerus inquinatus*, adult, WEELE, p. 205, Notes Leyden Mus. xxiv.
- Croce attenuata*, Queensland, pl. xx, fig. 1, p. 675, FROGGATT, P. Linn. Soc. N. S. Wales 1904, **n. sp.**
- Cymothalis liberiensis*, W. Africa, WEELE, p. 212, Notes Leyden Mus. xxiv, **n. sp.**
- Helicomitus philippinensis*, Luzon, WEELE, p. 206, t. c. **n. sp.**
- Hemerobius dyari*, p. 85, *kokaneeanus*, p. 86, *caudelli*, p. 87, *glacialis*, *kootenayensis*, p. 88, British Columbia, CURRIE, P. ent. Soc. Washington vi; *H. transversus*, *nevadensis*, *dorsatus*, p. 61, *pictus*, *speciosus*, p. 62, U. S. N. Amer., BANKS, Canad. Ent. xxxvi; *H. angustus*, New Mexico, BANKS, p. 102, Tr. Amer. ent. Soc. xxx; *H. bistrigatus*, p. 79, *pallens*, p. 80, California, CURRIE, P. ent. Soc. Washington vi: **n. spp.**
- Hybris flavicans*, Sumatra, p. 208, *borneënsis*, Borneo, p. 209, WEELE, Notes Leyden Mus. xxiv, **n. spp.**
- Merope tuber*, note, BARBER, p. 50, P. ent. Soc. Washington vi.
- Micromus australis*, N. S. Wales, FROGGATT, p. 609, plate, Agric. Gaz. N. S. W. xv, **n. sp.**
- Myrmeleon arenarius*, *ochreatus*, figg. 1, 2, pl. iv, NAVÁS, Bol. Soc. Aragon. iii; *M. formicarius*, *formicaleo*, in Holland, WEELE, pp. 110, 111, Ent. Ber. Nederland. i; *M. bifasciatum*, *sinuatum*, examination of types, WEELE, pp. 167, 168, Notes Leyden Mus. xxiv; *M.*, the Spanish, pp. 21–24, pl. i, *M. arenarius* n. n. for *variegatus* Ramb. nec Klug, p. 22, NAVÁS, Butl. Inst. Catalan. i.
- M. ochreatus*, Spain, NAVÁS, p. 23, t. c.; *M. distichus*, p. 106, *sticticus*, p. 107, Spain, NAVÁS, Bol. Soc. Aragon. ii: **n. spp.**
- Panorpa meridionalis* var. *n. fenestrata*, NAVÁS, p. 101, t. c.
- Psammoleon inscriptus* Hag., BANKS, p. 106, Tr. Amer. ent. Soc. xxx.
- Theleproctophylla variegata* Klug and *barbara* L. are distinct species, WEELE, pp. 95–98, Notes Leyden Mus. xxv.
- Ulula præcellens* to *Cordulecerus*, WEELE, p. 205, t. c.

PSEUDO-NEUROPTERA.

PSOCIDÆ.

[Cf. BANKS (82, 87), ENDERLEIN (454, 455), REUTER (1161), RIBAGA (1171).]

Psocoptera, new ordinal name for *Psocidæ*, SHIPLEY, p. 261, Zool. Anz. xxvii. Interpretation of the stigma, ENDERLEIN, p. 111, Zool. Jahrb. Syst. xx.

Calopsocus infelix, wings etc., ENDERLEIN, p. 106, pl. vii, fig. 1, op. cit. xix. *Edipsocus*, forms in Finland, pp. 5-8, *E. hyalinus* var. n. *abdominalis*, p. 6,

REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Ectopsocus and *Micropsocus*, *E. briggsi* var. n. *meridionalis*, RIBAGA, pp. 294-298, Redia i.

Hemineura fusca, Finland, pl. ii, fig. 2, p. 3, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9, **n. sp.**

Leptocella gracilis, New Mexico, BANKS, p. 110, Tr. Amer. ent. Soc. xxx, **n. sp.**

Leptodella **n. n.** for *Leptella* Reut. p. 11, characters and peculiarities, pp. 8-14, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Leptosocus, characters amended, REUTER, pp. 18-20, t. c.

Nymphopsocus destructor, account of, ENDERLEIN, pp. 727-732, pl. xliii, Zool. Jahrb. Syst. xix; *N. destructor*, characters, pp. 20-22, pl. iii, figg. 1-3, REUTER, Acta Soc. Faun. Fenn. xxvi, No. 9.

Psocus bisignatus, *elegans*, N. America, BANKS, p. 203, P. ent. Soc. Washington vi; *P. cockerelli*, New Mexico, BANKS, p. 100, Tr. Amer. ent. Soc. xxx: **n. spp.**

Psyllipsocus ramburi, characters, REUTER, pp. 22-25, pl. iii, figg. 4-8, Acta Soc. Faun. Fenn. xxvi, No. 9.

Reuterella, characters and species, REUTER, pp. 16-18, t. c.; *R. helvimacula* var. n. *enderleini*, SCHILLE, p. 475, Zool. Anz. xxvii.

Sva **n. g.** p. 109, near *Perientomum*, *S. dahliana* **n. sp.**, Bismarck Archipelago, p. 110, ENDERLEIN, Zool. Jahrb. Syst. xx.

MALLOPHAGA.

[Cf. CARRIKER (247), KELLOGG & CHAPMAN (784).]

Lipoptera **n. n.** for *Mallophaga*, SHIPLEY, p. 261, Zool. Anz. xxvii.

Fresh identification of mouth-parts of *Læmobothrium*, WATERHOUSE, p. v, cut, P. ent. Soc. London 1904.

Mallophaga of Costa Rica, with some general notes, CARRIKER, Stud. Univ. Nebraska iii.

KELLOGG's & CHAPMAN's memoir on Hawaiian *Mallophaga* (1902) is reprinted in Fauna Hawaiensis iii, pp. 305-321, pl. x.

Colpocephalum osborni var. n. *costaricense*, p. 172, CARRIKER, Stud. Univ. Nebraska iii.

C. gypagi, pl. vi, fig. 2, p. 171, *extraneum*, fig. 3, p. 173, *luroris*, fig. 4, p. 174, *mirabile*, fig. 5, p. 175, Costa Rica, CARRIKER, t. c. **n. spp.**

Docophorus platystomus umbrosus var. n. p. 126, CARRIKER, t. c.

D. transversifrons, p. 127, pl. i, fig. 1, *bruneri*, p. 128, fig. 2, *underwoodi*, p. 130, fig. 3, *cancellus*, p. 132, fig. 4, Costa Rica, CARRIKER, t. c. **n. spp.**

Goniocotes eurysema, Costa Rica, pl. iii, fig. 6, p. 150, CARRIKER, t. c. **n. sp.**

Goniodes minutus, pl. iv, figg. 1, 2, p. 155, *aberrans*, figg. 4, 5, p. 157, Costa Rica, CARRIKER, t. c. **n. spp.**

Kelloggia **n. g.** p. 153, *brevipes* **n. sp.** pl. i, fig. 2, p. 154, on *Tinamus*, Costa Rica, CARRIKER, t. c.

- Laemobothrium delogramma*, pl. iv, fig. 6, p. 159, *oligothrix*, fig. 7, p. 161, Costa Rica, CARRIKER, t. c. **n. spp.**
- Lipeurus longipes tinami* var. n. p. 146, CARRIKER, t. c.
- L. postmarginatus*, pl. iii, fig. 4, p. 147, Costa Rica, CARRIKER, t. c. **n. sp.**
- Menopon tridens costaricensis* var. n. p. 178, *M. præcursor meridionale* var. n. p. 180, *M. thoracicum* varr. n. *majus* and *fuscum*, p. 187, CARRIKER, t. c.
- M. ortalidis*, pl. vii, fig. 1, p. 179, *macrocybe*, fig. 2, p. 181, *tityrus*, fig. 4, p. 182, *stenodesmum*, pl. viii, fig. 2, p. 184, *difficile*, fig. 1, p. 188, *palloris*, fig. 3, p. 189, *laticorpus*, p. vii, fig. 5, p. 190, Costa Rica, CARRIKER, t. c. **n. spp.**
- Nirmus fuscus epustulatus* var. n. p. 133, *N. brachythorax ptiliogonis* var. p. 143, CARRIKER, t. c.
- N. rhamphasti*, p. 135, pl. ii, fig. 1, *hastiformis*, fig. 2, p. 136, *parabolocybe*, fig. 3, p. 137, *francisi*, fig. 5, p. 139, *melanacocus*, fig. 6, p. 141, *pseudophæus*, pl. iii, fig. 1, p. 142, *caligineus*, fig. 2, p. 144, Costa Rica, CARRIKER, t. c. **n. spp.**
- Nitzschia bruneri*, p. 177 with var. *meridionalis*, p. 178, Costa Rica, CARRIKER, t. c. **n. sp.**
- Ornicholax n. g. robustus n. sp.* on *Tinamus*, Costa Rica, pl. ix, fig. 1, p. 151, CARRIKER, t. c.
- Physostomum jiminezi*, pl. v, fig. 1, p. 163, *doratophorum*, fig. 4, p. 165, *leptosomum*, fig. 2, p. 166, *subangulatum*, fig. 3, p. 168, Costa Rica, CARRIKER, t. c. **n. spp.**

TERMITIDÆ or ISOPTERA.

[Cf. DESNEUX (368–373), JACOBSON (741), SILVESTRI (1299), SJÖSTEDT (1301), WASMANN (1485, 1487), WHEELER (1524).]

The classification and genera of *Termitidæ*, with list of the species, DESNEUX, *Isoptera*, in Wytzman Gen. Ins. fasc. xxv, 52 pp., 2 pls. Classification of *Termitidæ*, the family of itself to form the Order *Isoptera*, three subfamilies, DESNEUX, Ann. Soc. ent. Belgique xlviii, pp. 278–286.

Note on the taxonomy of *Termitidæ*, DESNEUX, pp. 149, 150, t. c. DESNEUX & WASMANN (370, 371, 1487) discuss the phylogeny of *Termitidæ*. Phylogeny and relations of Termites, WHEELER (1524).

Notes on *Termitidæ* at Tortosa, Spain, JAIME PUJURLA, Bol. Soc. Aragon. Ci. nat. iii, pp. 23 etc. etc.

Supplement to the monograph of African *Termitidæ*, with additional tables and descriptions of forms, habits etc. and 26 n. spp., SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4.

Habits of *Hodotermes* in Turkestan, JACOBSON, Annuaire Mus. St. Petersb. ix, pp. 57–107, and WASSILJEV, pp. 97 etc.

Brief and unimportant note on Termites in Rhodesia, LOIR, p. 90, P. Rhodesia Ass. iii.

Habits of S. American *Termitidæ*, SILVESTRI, Mem. Soc. Ant. Alzate xiii, pp. 353–378.

The two kinds of nymphs, PÉREZ (1022).

Termitidæ at water 50 metres below the surface, ELLIOT, Geograph. J. xxiv, p. 515.

Anacanthotermes subg. n. cf. *Hodotermes*.

Archotermopsis subg. n. *T. wroughtoni* (below), DESNEUX, p. 13, Isoptera.

Calotermes marginalis in Turkestan, JACOBSON, pp. 72 etc., Annuaire Mus. St. Petersb. ix.

C. desneuxi, Madagascar, p. 11, *maroccoensis*, Tangier, *planiceps*, S. Africa,

- p. 17, *auriceps*, Cameroons, p. 19, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4; *C. militaris*, Ceylon, DESNEUX, p. 146, Ann. Soc. ent. Belgique xlviii; *C. wagneri*, Brazil, DESNEUX, p. 286, t. c. : **n. spp.**
- Eutermes sudanicus*, Soudan, p. 77, *palaearcticus*, Algeria, p. 79, *chiasognathus*, Cameroons, p. 85, *salebrithorax*, Madagascar, p. 89, *mobilis*, Soudan, p. 91, *occidentalis*, Kerry Coast, p. 93, *divellens*, Madagascar, p. 94, *aluco*, Soudan, p. 95, *rapulum*, p. 99, *usambarensis*, p. 103, Usambara, *maculiventris*, Gaboon, p. 104, *clepsydra*, Madagascar, p. 108, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4 : **n. spp.**
- Hodotermes vagans septentrionalis* subsp. n., JACOBSON, p. 65, Annuaire Mus. St. Petersb. ix.
- H. (Anacanthotermes)* subg. n. p. 76) *turkestanicus*, p. 61, *ahngerianus*, p. 67, JACOBSON, t. c. **n. spp.**
- Mastotermes*, characters and importance, DESNEUX, pp. 279–281, Ann. Soc. ent. Belgique xlviii, and WASMANN, t. c.
- Rhinotermes taurus*, Surinam, DESNEUX, p. 146, t. c. **n. sp.**
- Termes lucifugus*, swarming at Bordeaux, LALOY, p. 131, Naturaliste 1904; *T. havilandi* n. n. for *latifrons* Hav. nec Sjöst., DESNEUX, p. 151, Ann. Soc. ent. Belgique xlviii; *T. desertorum*, worker and imago, DESNEUX, p. 147, t. c.
- T. canalifrons*, p. 47, Madagascar, *fidens*, West Africa, p. 52, *aurora*, Zanzibar, p. 60, *agilis*, Liberia, p. 61, *fuscofemoralis*, Red Sea, p. 62, *ramulosus*, E. Africa, p. 64, *salebrifrons*, N. E. Africa, p. 65, *erodens*, Red Sea, p. 66, *redenianus*, Usambara, p. 68, *tragardhi*, Soudan, p. 71, SJÖSTEDT, Svenska Ak. Handl. xxxviii, No. 4; *T. annamensis*, Annam, *zenkeri*, Cameroons, DESNEUX, p. 148, Ann. Soc. ent. Belgique xlviii; *T. bouvieri*, Maraquitia, p. 287, *tenuirostris*, Mexico, p. 288, DESNEUX, t. c. : **n. spp.**
- Termitogeton* subg. n. for *T. planus* Hav., DESNEUX, p. 374, t. c.
- Termopsis wroughtoni*, Kashmir, DESNEUX, p. 445, J. Bombay Soc. xv, **n. sp.**

EMBIIDÆ = EMBIOPTERA.

- [Cf. FROGGATT (557), KUSNEZOV (850), LÉGER (870), VERHOEFF (1434), WASMANN (1485).]
- Embioptera* new ordinal n. for *Embiidæ*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- Anatomy and taxonomy of *Embiidæ*, treating them as suborder nov. *Adenopoda* of *Isoptera*, VERHOEFF, Acta Ac. German. lxxxii, No. 2, 65 pp., 4 pls.
- The affinities of *Embiidæ* from a consideration of their parasites, LÉGER, pp. 365, 366, Arch. Protistenk. iii.
- Embia taurica*, habits, taxonomy etc., KUSNEZOV, pp. 138–173, Horæ Soc. ent. Ross. xxxvii.
- E. camerunensis*, W. Africa, VERHOEFF, p. 203, Acta Ac. German. lxxxii, **n. sp.**
- Euembia* subg. n. for *Embia*, male-winged species, VERHOEFF, t. c. p. 201.
- Haploembia* subg. n. for *E. solieri*, VERHOEFF, t. c. p. 201.
- Oligotoma* ? *termitophila*, Soudan, WASMANN, pl. i, fig. 6, p. 17, Jägerskiöld exp. No. 13; *O. gurneyi*, pl. xx, figg. 2, 3, p. 672, *agilis*, figg. 4, 6, p. 673, New South Wales, FROGGATT, P. Linn. Soc. N. S. Wales 1904, **n. spp.**

PERLIDÆ or PLECOPTERA.

- [Cf. BANKS (82), Klapálek (818), Navás (974).]

Patagonian *Perlidæ*, Klapálek, Hamburg. Magalhaen. Reise vii, 13 pp.

- Acroneuria nigrita*, New Mexico, BANKS, p. 98, Tr. Amer. ent. Soc. xxx, n. sp.
- Arcynopteryx* n. g. for part of *Dictyopteryx*, Klapálek, p. 7, Rozp. Ceske Ak. Praze ii, xiii, No. 17.
- Chloroperla pallidula*, New Mexico, BANKS, p. 99, Tr. Amer. ent. Soc. xxx, n. sp.
- Dictyogenus* subg. n. for *D. alpina* etc., Klapálek, p. 8, Rozp. Ceske Ak. Praze ii, xiii, No. 17.
- Dictyopterygella* n. subg. p. 5, *D. septentrionis* n. sp., Siberia, p. 6, Klapálek, t. c.
- Griopteryx* revised, Klapálek, Hamburg. Magalhaen. Reise vii.
- G. tigrina*, Peru, p. 11, *michaelseni*, Tierra-del-fuego, p. 12, id. t. c. n. spp.
- Isogenus nubecula*, nymph, structure, Klapálek, pp. 8–10, Rozp. Ceske Ak. Praze ii, xiii, No. 17.
- Teniopteryx ornata*, p. 102, *dusmeti*, p. 104, *matritensis*, p. 105, Spain, NAVÁS, Bol. Soc. Aragon. ii, n. spp.

EPHEMERIDÆ.

[Cf. NAVÁS (974), REITZENSTEIN (1157), ULMER (1423).]

- Ephemeroptera* new ordinal n. for *Ephemeridæ*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- Agnatha* Meinert = (*Plectoptera* Pack.) to be used for this Order, BÖRNER, p. 525, Zool. Anz. xxvii.
- The terms *Plectoptera*, *Anisoptera* and *Ephemeroptera*, BANKS, p. 155, Science xx.
- ULMER gives notes on *Leptophlebia*- and *Baëtis*-like nymphs from Patagonia, Hamburg. Magalhaen. Reise vii.
- Ephemeridæ* re-entering water, SLADE, p. 15, Ent. Mag. xl.
- Permian *Ephemeridæ*, new forms, see p. 125, Palæo-entomology, HANDLIRSCH.
- Swarms of a may-fly, SMITH, p. 318, Ent. News Philad. xv.
- Baëtis propinquus*, relations of sexes, MOORE, p. 289, Ent. News Philad. xv.
- Ephemera virgo* in Saône-et-Loire, MARCHAL, pp. 260–262, Bull. Soc. Autun xv.
- E. hispanica*, Burgos, NAVÁS, p. 100, Bol. Soc. Aragon. ii, n. sp.

ODONATA or PARANEUROPTERA.

- [Cf. BUTLER (211), CALVERT (220), CURRIE (336), FÖRSTER (536), HANDLIRSCH (662), HEYMONS (683), LUCAS (890), MARTIN (919), NEEDHAM (978), PIERRE (1087), RIS (1176), SLEVOGT (1305), WILLIAMSON (1531, 1532).]
- Paraneuroptera* new ordinal name for *Odonata*, SHIPLEY, p. 261, Zool. Anz. xxvii.
- The terms *Archiptera*, *Pseudoneuroptera*, *Paraneuroptera*, BANKS, p. 155, Science xx.
- WILLIAMSON revises the *Calopteryginæ* of Burma and Lower Siam, 12 genn. and 21 species, gives the characters of genera and species, some figures and synonymy and describes 1 n. sp., P. U. S. Mus. xxviii, No. 1389, pp. 165–187.
- The *Odonata*-fauna of southern S. America, RIS, Hamburg. Magalhaen. Reise vii.
- List of *Odonata* of Indo-China, MARTIN, pp. 204–221, Mission Pavie iii.
- The morphology of abdomen and its appendages, larva and imago, HEYMONS (683), HANDLIRSCH (662).

- HORTENSE BUTLER gives the results of a study of the labium in the young and adult, *Tr. Amer. ent. Soc.* xxx, pp. 111–134, pls. ii–vii.
- Eyes of *Æschna*, VIGIER (1456).
- NEEDHAM describes 40 nymphs, of which 36 for the first time, most of them being figured; they are chiefly American with about eight Batavian, *P. U. S. Mus.* xxvii, pp. 685–720, pls. xxxviii–xliv.
- Hatching of *Lestes viridis*, PIERRE, pp. 477–484, pl. iv, *Ann. Soc. ent. France* 1904.
- Acanthagrion ambiguum*, Buenos Aires, RIS, p. 13, Hamburg. Magalhaen. Reise vii, **n. sp.**
- Æschna cornigera* and allies, characters, RIS, p. 23, t. c.; *A. grandis*, habits, SLEVOGT, p. 37, *Soc. ent.* xix.
- Agrion armatum*, characters, LUCAS, p. 33, pl. iii, figg. 2–5, *Entomologist* 1904.
- Allopetalia reticulosa*, characters, cuts, RIS, pp. 21–23, Hamburg. Magalhaen. Reise vii.
- Amphiaschna grubaueri*, Malacca, FÖRSTER, p. 355, *Ins. Börse* 1904, **n. sp.**
- Antigrion n. g.* type *Agrion gayi*, RIS, p. 7, Hamburg. Magalhaen. Reise vii.
- Azuma n. g.* for *Epophthalmia elegans* Br., NEEDHAM, p. 698, *P. U. S. Mus.* xxvii.
- Cordulia aenea*, natural history notes, copula, ROCQUIGNY-ADANSON, *Rev. Sci. Bourbonnais* xvii, pp. 128, 129.
- Davidius fruhstorferi*, Tonkin, MARTIN, p. 215, *Mission Pavie* iii, **n. sp.**
- Dysphæa basitincta*, Tonkin, MARTIN, p. 218, t. c. **n. sp.**
- Echo maxima*, Tonkin, MARTIN, p. 219, t. c. **n. sp.**
- Gomphidia krugeri*, Tonkin, MARTIN, p. 216, t. c. **n. sp.**
- Gomphus thomassoni* to *Onychogomphus*, characters, MARTIN, p. 213, t. c.; *G. furcifer*, nymph; WALKER, p. 358, *Canad. Ent.* xxxvi.
- G. vermicularis*, Tonkin, MARTIN, p. 214, *Mission Pavie* iii, **n. sp.**
- Hagenius gigas*, Tonkin, MARTIN, p. 216, t. c. **n. sp.**
- Heterogomphus unicolor*, Siam, MARTIN, p. 211, t. c. **n. sp.**
- Ischnura elegans* var., F. & H. CAMPION, p. 252, *Entomologist* 1904.
- Lestes viridis*, ♂ appendages, LUCAS, p. 33, pl. iii, fig. 6, *Entomologist* 1904; *L. viridis*, emergence from egg, young larva, PIERRE, p. 30, *Bull. Soc. ent. France* 1904, GIARD, t. c. p. 31.
- Macromia septima* Selys, Java and Tonkin, MARTIN, p. 211, *Mission Pavie* iii, ? **n. sp.**
- Merogomphus n. g. paviei n. sp.*, Tonkin, MARTIN, p. 214, t. c.
- Micrathyria berenice*, nymph, CALVERT, p. 174, *Ent. News Philad.* xv.
- M. pallida*, Brazil, NEEDHAM, p. 710, *P. U. S. Mus.* xxvii, **n. sp.**
- Neurothemis septentrionis*, Sikkim, FÖRSTER, p. 363, *Ins. Börse* 1904, **n. sp.**
- Onychogomphus camelus*, Tonkin, MARTIN, p. 212, *Mission Pavie* iii, **n. sp.**
- Onychothemis abnormis* var. *n. tonkinensis*, MARTIN, p. 209, t. c.
- O. culminicola*, Upper Malacca, FÖRSTER, p. 362, *Ins. Börse* 1904, **n. sp.**
- Orolestes octomaculata*, Cambodia, MARTIN, p. 220, *Mission Pavie* iii, **n. sp.**
- Oxyagrion saliceti*, Buenos Aires, RIS, p. 9, Hamburg. Magalhaen. Reise vii, **n. sp.**
- Pseudothemis jorina*, Upper Malacca, FÖRSTER, p. 363, *Ins. Börse* 1904, **n. sp.**
- Psolodesmus dorothea*, Formosa, WILLIAMSON, p. 249, cuts, *Ent. News Philad.* xv, **n. sp.**
- Thaumatoneura pellucida*, Costa Rica, CALVERT, p. 216, *Ent. News Philad.* xv, **n. sp.**
- Trithemis aurora, minuscula*, wings, NEEDHAM, pl. xlv, p. 709, *P. U. S. Mus.* xxvii.

THYSANOPTERA.

[Cf. BÖRNER (157), DANIEL (350), FROGGATT (556).]

The *tropi*, relations with *Hemiptera*, BÖRNER (157).

Caliothrips **n. g.** p. 296, *C. woodworthi* **n. sp.**, California, p. 297, DANIEL, Ent. News Philad. xv.

Criptothrips californicus, S. California, DANIEL, p. 293, t. c. **n. sp.**

Euthrips pyri, San Leandro, DANIEL, p. 294, t. c. **n. sp.**

Idolothrips, habits, life-history, eggs, *I. spectrum* ♀ = (*marginata* Hal.), *spectrum* ♂ var. = (*lacertina* Hal.), FROGGATT, P. Linn. Soc. N. S. Wales xxix, pp. 54-57, pl. iii.

Sericothrips apteris, Berkely, DANIEL, p. 295, Ent. News Philad. xv, **n. sp.**

(G.) *APTERA* or *THYSANURA* and
COLLEMBOLA.

[Cf. BRUNTZ (196), ESCHERICH (1485), FOLSOM (522), Klapálek (816), PHILIPTSCHENKO (1045), SILVESTRI (1297, 1300).]

Aptera, as ordinal name for *Thysanura*, SHIPLEY, Zool. Anz. xxvii, p. 261.
Atelura sudanensis, White Nile, ESCHERICH, p. 20, Jägerskiöld exp. No. 13,
n. sp.

Campodea, anatomy, PHILIPTSCHENKO (1045).

Diptura n. order for *Thysanura entotropha* Grassi, BÖRNER, p. 525, Zool. Anz. xxvii.

Japyx solifugus, in Crimea, KUSNEZOV, p. 227, Rev. Russe Ent. iv.

J. sharpi, Kauai, SILVESTRI, p. 293, pl. viii, figg. 1, 2, Fauna Hawaiiensis iii, n. sp.

Lepisma hawaiiensis, Kauai, SILVESTRI, p. 296, pl. viii, fig. 19, t. c. n. sp.

Machilida, tabulation, SILVESTRI, pp. 4-9, Redia ii.

Machiloides n. g. for *Machilis appendiculata*, SILVESTRI, p. 4, t. c.

Machilis alternata, Umbria, SILVESTRI, p. 6, t. c.; *M. perkinsi*, Kauai, p. 294, *heteropus*, Kauai, Hawaii, p. 295, SILVESTRI, Fauna Hawaiiensis iii : n. spp.

Præmachilis meticulosa, Umbria, SILVESTRI, p. 7, Redia ii, n. sp.

COLLEMBOLA.

[Cf. ABSOLON (6, 7), AGREN (18), AXELSON (68, 68A), CARPENTER (243), CARPENTER & EVANS (245), HOFFMANN (694), SCHÖTT (1234).]

Apontoptera n. n. for *Collembola*, SHIPLEY, p. 261, Zool. Anz. xxvii.

Synaptera and *Collembola*, the terms, BANKS, p. 155, Science xx.

Notes on variation, etc., of a Norwegian coll. of *Collembola*, AXELSON, pp. 65-84, Ent. Tidskr. xxv.

Antennal and postantennal organ, ABSOLON, pp. 83-89, Vestnik. Klub. Prostejove iii.

Structure and function of ventral tube, cephalic glands, HOFFMANN, pp. 87-116, Zool. Anz. xxviii.

Achorutes spp., post-antennary organ, SCHÖTT, pl. i, pp. 5-10, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.

A. propinquus, Edinboro, CARPENTER & EVANS, p. 217, pl. iv, figg. 10-14, P. Phys. Soc. Edinb. xv; *A. bengtssoni*, p. 2, figg. 1-4, *serratus*, p. 5, figg. 5-7, *mitis*, p. 6, Lapland, AGREN, Arkiv Zool. ii, No. 1 : n. spp.

Anurida amorita in Siberia, AXELSON, p. 4, Ofv. Finska Forh. xlv, No. 20.

Dicyrtoma pygmaea var. n. *purpurea*, ABSOLON, p. 61, Vestnik. Klub. Prostejove ii; *D. palmata* in Siberia, AXELSON, p. 12, fig. 7, Ofv. Finska Forh. xlv, No. 20.

D. violacea, Moravia, ABSOLON, p. 61, Vestnik. Klub. Prostejove ii, n. sp.

Entombrya nivalis ab. n. *dorsalis*, AGREN, p. 22, figg. 14-16, Arkiv Zool. ii, No. 1.

- E. insularis*, Hawaii, pl. ix, figg. 7-11, *kalakaua*, Kauai, figg. 12-16, p. 301, CARPENTER, Fauna Hawaiiensis iii, **n. spp.**
- Friesea*, characters, SCHÖTT, p. 17, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.
- Heteromurus hirsutus*, Moravia, ABSOLON, p. 62, Vestnik. Klub. Prostejove ii, **n. sp.**
- Isotoma grandiceps*, amended characters, AXELSON, p. 7, Ofv. Finska Forh. xlv, No. 20; *I. bidenticulata*, characters, p. 17, figg. 11-13, AGREN, Arkiv Zool. ii, No. 1; *I. anophthalma*? unpigmented form, p. 69, *I. mucronata* Axels., a valid species, characters, pp. 72-74, AXELSON, Ent. Tidskr. xxv.
- I. intermedia*, Sweden, SCHÖTT, p. 25, Bih. Svenska Ak. xxviii, Afd. iv, No. 2; *I. poppiusi*, Siberia, AXELSON, p. 5, pl. figg. 1-4, Ofv. Finska Forh. xlv, No. 20; *I. perkinsi*, Kauai, pl. ix, figg. 17-19, p. 302, CARPENTER, Fauna Hawaiiensis iii : **n. spp.**
- Lepidocyrtus lanuginosus* ab. n. *rubiginosa*, AGREN, p. 25, Arkiv Zool. ii, No. 1.
- L. ruber*, Sweden, SCHÖTT, p. 31, Bih. Svenska Ak. xxviii, Afd. iv, No. 2; *L. heterophthalmus*, Hawaii, pl. ix, fig. 1, p. 300, CARPENTER, Fauna Hawaiiensis iii : **n. spp.**
- Neanura ornata* in Siberia, AXELSON, p. 3, Ofv. Finska Forh. xlv, No. 20.
- N. citronella*, Hawaiian islds., pl. ix, figg. 20-27, p. 303, CARPENTER, Fauna Hawaiiensis iii, **n. sp.**
- Onychiurus arcticus* is ab. of *armatus*, AGREN, p. 13, Arkiv Zool. ii, No. 1.
- Papirius rufescens* var. n. *discolor*, SCHÖTT, p. 41, pl. v, figg. 1-5, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.
- Pseudachorutes lapponicus*, Lapland, AGREN, p. 8, fig. 8, Arkiv Zool. ii, No. 1; *P. tuberculatus*, p. 13, *borneri*, p. 14, Sweden, SCHÖTT, Bih. Svenska Ak. xxviii, Afd. iv, No. 2 : **n. spp.**
- Pseudosinella sexoculata*, Sweden, SCHÖTT, p. 34, pl. iv, figg. 8-12, t. c. **n. sp.**
- Schafferia* [n. g., but previously published in 1900] p. 89, *S. emucronata*, Moravia [n. sp. previously described], ABSOLON, p. 91, pl. i, figg. 1-13, Vestnik. Klub. Prostejove iii.
- Schottella crassicornis*, p. 10, pl. ii, figg. 8-12, *sensibilis*, p. 11, figg. 13-20, Sweden, SCHÖTT, Bih. Svenska Ak. xxviii, Afd. iv, No. 2, **n. spp.**
- Sminthurus variegatus*?, Siberia, AXELSON, p. 9, Ofv. Finska Forh. xlv, No. 20.
- Tetrachantella*, characters and position, SCHÖTT, pp. 18-20, pl. iii, figg. 12, 13, Bih. Svenska Ak. xxviii, Afd. iv, No. 2.

(H.) ORTHOPTERA.

Phagocytic organs, morphology, DAWYDOFF (354-357).

Synopsis of Orthoptera of Western Europe, BURR (202).

New Permian *Orthoptera*, see p. 125, Palæoentomology, HANDLIRSCH.

FORFICULIDÆ.

[Cf. BENNETT (100), BORELLI (153, 154), BORG (156), BURR (201), CAUDELL (254, 255), DISTANT (382), MJÖBERG (950), REHN (1128).]

General catalogue, KIRBY (806A).

Natural history of *Anisolabis maritima*, BENNETT, *Psyche* xi, pp. 47-53.

Ancistrogaster pæcilocera, Cameroons, BORG, p. 576, pl. xxvi, fig. 8, *Arkiv Zool.* i, **n. sp.**

Anechura schlagintweiti, Tibet, BURR, p. 313, *Tr. ent. Soc. London* 1904, **n. sp.**

Anisolabis azteca = (*bormansi* Scudd.), CAUDELL, p. 180, *J. N. York Ent. Soc.* xii.

A. gaudens, India, *albovittata*, Madagascar, BURR, p. 291, *Tr. ent. Soc. London* 1904; *A. peregrina*, in Sweden imported from Matto Grosso, MJÖBERG, p. 131, *Ent. Tidskr.* xxv; *A. festæ*, Ecuador, BORELLI, p. 3, *Boll. Mus. Torino* xix, No. 475 : **n. spp.**

Apterygida athymia **n. n.** for *Forfic. japonica* De B., REHN, p. 540, *P. U. S. Mus.* xxvii; *A. huseinæ* to *Labidura*, REHN, p. 539, t. c.; *A. linearis*, use of forceps, BAER, p. 163, *Bull. Soc. ent. France* 1904.

A. bonchampsii, Abyssinia, p. 317, *vishnu*, Darjiling, p. 318, BURR, *Tr. ent. Soc. London* 1904, **n. spp.**

Auchenomus minor, Philippines, CAUDELL, p. 108, *J. N. York Ent. Soc.* xii, **n. sp.**

Bormansia impressicollis ♂, BURR, p. 287, *Tr. ent. Soc. London* 1904.

B. meridionalis, Transvaal, BURR in DISTANT, *Ins. transvaal.* i, p. 97, **n. sp.**

Brachylabis sjostedi, Cameroons, BORG, p. 568, *Arkiv Zool.* i; *B. malgacha*, Madagascar, BURR, p. 292, *Tr. ent. Soc. London* 1904 : **n. spp.**

Carcinophora waddyi, Martinique, BURR, p. 290, t. c.; *C. fusca*, Santiago, BORELLI, p. 1, *Boll. Mus. Torino* xix, No. 475 : **n. spp.**

Chætospasia volcana, Madagascar, BURR, p. 301, *Tr. ent. Soc. London* 1904, **n. sp.**

Challia **n. g.** near *Anataëlia*, p. 285, *C. fletcheri* **n. sp.**, China, p. 286, BURR, t. c.

Chelidura dilatata, copula and egg, XAMBEU, pp. 120, 121, *Ann. Soc. Linn. Lyon* l.

Chelisoche beelzebub to *Forficula*, characters amended, BURR, p. 322, *Tr. ent. Soc. London* 1904.

C. limbatus, Cameroons, BORG, p. 575, pl. xxvi, fig. 7, *Arkiv Zool.* i, **n. sp.**

Demogorgon longipennis, Tucuman, BORELLI, p. 4, *Boll. Mus. Torino* xix, No. 479, **n. sp.**

- Diplatys æthiops*, hab. ? , *occidentalis*, W. Indies, p. 280, *conradti*, Cameroons, viator, Madagascar, *siva*, India, p. 283, *croixi*, Malacca, p. 284, *greeni*, Ceylon, p. 285, BURR, Tr. ent. Soc. London 1904, **n. spp.**
- Forcipula quelchi*, Brit. Guiana, BURR, p. 289, t. c. **n. sp.**
- Forficula planicollis* ♂, p. 320, BURR, t. c.
- F. mikado*, Japan, p. 319, *ambigua*, *mogul*, p. 321, Darjiling, BURR, t. c. **n. spp.**
- Gonolabis* and *Gonolabidæ*, characters, BURR, pp. 293-295, t. c.
- Labia paraguayensis*, Sapucay, CAUDELL, p. 180, J. N. York Ent. Soc. xii ; *L. alluaudi*, *triangulata*, p. 297, *insularis*, p. 298, *forceps*, Madagascar, *paradoxa*, Ecuador, p. 299, BURR, Tr. ent. Soc. London 1904 : **n. spp.**
- Labidura dubroni*, p. 565, *karschi*, pl. xxvi, fig. 1, p. 566, Cameroons, BORG, Arkiv Zool. i, **n. spp.**
- Labidurodes nitidus*, Madagascar, BURR, p. 290, Tr. ent. Soc. London 1904, **n. sp.**
- Neolobophora bicolor*, Ecuador, BORELLI, p. 5, Boll. Mus. Torino xix, No. 475, **n. sp.**
- Odontopsalis* **n. g.** p. 315, *O. harmandi*, p. 316, *lewisi*, p. 317, **n. spp.**, Japan, BURR, Tr. ent. Soc. London 1904.
- Opisthocosmia micheli*, Abyssinia, p. 307, *erroris*, p. 308, *vicina*, Borneo, *nevilli*, p. 309, *brahma*, p. 310, India, *annandalei*, Malay States, p. 311, *shelfordi*, Sarawak, *temora*, Darjiling, p. 312, BURR, t. c. **n. spp.**
- Platylabia gestroi* ♀, BURR, p. 300, t. c.
- P. camerunensis*, p. 570, pl. xxvi, fig. 4, *bihastata*, fig. 5, p. 571, Cameroons, BORG, Arkiv Zool. i, **n. spp.**
- Pyragra paraguayensis*, Asuncion, BORELLI, p. 1, Boll. Mus. Torino xix, No. 479, **n. sp.**
- Sparatta bongiana*, Cameroons, BORG, pl. xxvi, fig. 3, Arkiv Zool. i ; *S. w. signata*, Mexico, BURR, p. 302, Tr. ent. Soc. London 1904 : **n. spp.**
- Spongiphora assiniensis* ♂, BURR, p. 295, t. c.
- S. geayi*, Abyssinia, id. l. c. ; *S. ochracea*, Cameroons, BORG, p. 569, pl. xxvi, fig. 6, Arkiv Zool. i ; *S. vicina*, Paraguay, BORELLI, p. 6, Boll. Mus. Torino xix, No. 479 : **n. spp.**
- Tomopygia* **n. g.** type *Cylindrogaster abnormis*, p. 287, *T. sinensis* **n. sp.**, Pekin, p. 288, BURR, Tr. ent. Soc. London 1904.

BLATTIDÆ and HEMIMERIDÆ.

[Cf. ADELUNG (11, 12), AGNUS (17), BORG (155), CAUDELL (255), NAVÁS (975), REHN (1128, 1135, 1138), RILEY (1173), REITZENSTEIN (1157), SCUDDER & COCKERELL (1267), SELLARDS (1269, 1270), STERZEL (1345), TEPPER (1370), WASSILIEFF (1488).]

General Catalogue, KIRBY (806A).

Morphology of head of *Blatta*, RILEY (1173).

Salivary glands of *P. orientalis*, LEBEDEFF (866).

Palæozoic *Blattidæ*, see Palæoentomology.

AGNUS states that *Palæoblattina douvillei* is a Trilobite, not a *Blattid*, Naturaliste 1904, p. 80.

Anaplecta platycephala, Queensland, REHN, p. 542, P. U. S. Mus. xxvii, **n. sp.**

Blatta senecta, S. Africa, REHN, p. 554, t. c. **n. sp.**

Blattella germanica injuring books, BRITTON, p. 215, Rep. Connecticut exp. Stat. 1904, pl. iii b.

Calotampra pedisequa, Siam, REHN, p. 547, P. U. S. Mus. xxvii, **n. sp.**

Chorisoneura africana, Cameroons, BORG, p. 5, Bih. Svenska Ak. xxviii, Afd. iv, No. 10 ; *C. plocea*, S. Carolina, REHN, p. 164, Ent. News Philad. xv : **n. spp.**

- Deropeltis schweinfurthi* var., ADELUNG, p. 327, Annuaire Mus. St. Petersb. viii.
- D. gabonica*, W. Africa, REHN, p. 556, P. U. S. Mus. xxvii; *D. kachovskii*, p. 319, pl. xx, fig. 6, *pallidipennis*, p. 327, Abyssinia, ADELUNG, t. c.; *D. tullbergi*, Cameroons, BORG, p. 16, pl. ii, fig. 6, Bih. Svenska Ak. xxviii, No. 10 : **n. spp.**
- Dipeltis*, a fossil cockroach, SELLARDS, p. 309, Amer. J. Sci. xviii.
- Ectobia perspicillaris* and *livida*, variation and distinctions, ADELUNG, pp. 130–137, Horæ Soc. ent. Ross. xxxvii.
- E. duskei*, S. E. Europe, ADELUNG, p. 127, t. c.; *E. maori*, New Zealand, REHN, p. 541, P. U. S. xxvii : **n. spp.**
- Ellipsidion histrionicum*, Australia, REHN, p. 544, t. c. **n. sp.**
- Epitampra camerunensis*, p. 8, pl. i, fig. 3, *electa*, p. 10, fig. 4, *infinita*, p. 11, fig. 1, *sjostedti*, p. 12, fig. 5, *pallida*, p. 13, fig. 6, *minuta*, p. 14, fig. 2, Cameroons, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10; *E. excelsa*, Himalaya, NAVÁS, p. 131, Bol. Soc. Aragon. iii; *E. trongana*, p. 548, *moloch*, p. 549, Siam, REHN, P. U. S. Mus. xxvii : **n. spp.**
- Eustegasta parva*, Cameroons, BORG, p. 31, Bih. Svenska Ak. Afd. iv, No. 10, **n. sp.**
- Gyna aurivillii*, p. 20, pl. ii, fig. 5, *oblonga*, p. 21, fig. 1, Cameroons, BORG, t. c. **n. spp.**
- Heterogamia gestroyana* var. *n. fulvopicta*, ADELUNG, p. 329, pl. xx, fig. 15, Annuaire Mus. St. Petersb. viii.
- Homæogamia subdiaphana*, New Mexico, SCUDDER, p. 19, pl. v, fig. 3, P. Davenport Ac. ix, **n. sp.**
- Isoniscus* **n. g.** near *Zetobora*, p. 27, *I. sjostedti* **n. sp.**, Cameroons, p. 28, pl. ii, fig. 3, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10.
- Kakerlac schæfferi*, Texas, REHN, p. 72, Psyche xi, **n. sp.**
- Mallatoblatta brachyptera*, Abyssinia, ADELUNG, p. 303, pl. xx, fig. 13, Annuaire Mus. St. Petersb. viii **n. sp.**
- Opistoplatia plicata*, Himalaya, NAVÁS, p. 130, Bol. Soc. Aragon. iii, **n. sp.**
- Oxyhaloa saussurei*, Cameroons, BORG, p. 29, pl. ii, fig. 2, Bih. Svenska Ak. xxviii, Afd. iv, No. 10; *O. nilotica*, Abyssinia, ADELUNG, p. 334, pl. xx, fig. 9, Annuaire Mus. St. Petersb. viii : **n. spp.**
- Panchlora stolata*, p. 23, pl. i, fig. 7, *camerunensis*, p. 24, Cameroons, BORG, Bih. Svenska Ak. xxviii, Afd. iv, No. 10, **n. spp.**
- Panesthia cetrifera*, Australia, REHN, p. 559, P. U. S. Mus. xxvii, **n. sp.**
- Periplaneta lebedinskii*, Abyssinia, ADELUNG, p. 305, Annuaire Mus. St. Petersb. viii; *P. basedowi*, S. Australia, TEPPER, p. 162, pl. xxxii, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Pilema thoracica*, habits, DISTANT, p. 97, Ins. transvaal. i.
- Proscratea bilineata*, Philippines, NAVÁS, p. 135, Bol. Soc. Aragon. iii, **n. sp.**
- Pseudoderopeltis discrepans*, p. 312, pl. xx, fig. 14, *gildessa*, p. 314, fig. 4, *saussurei*, p. 316, fig. 5, Abyssinia, ADELUNG, Annuaire Mus. St. Petersb. viii, **n. spp.**
- Rhicnoda desidiosa*, Siam, REHN, p. 552, P. U. S. Mus. xxvii, **n. spp.**
- Stylopyga flavilatera* var. *n. castanea*, ADELUNG, p. 309, Annuaire Mus. St. Petersb. viii.
- Temnopteryx deropeltiformis* and *Ischnoptera uhleriana*, habits, CAUDELL, p. 78, P. ent. Soc. Washington vi.
- Theganopteryx nitida*, Cameroons, BORG, p. 4, pl. i, fig. 8, Bih. Svenska Ak. xxviii, Afd. iv, No. 10, **n. sp.**
- Thyrsochera tessellata*, Siam, REHN, p. 545, P. U. S. Mus. xxvii, **n. sp.**

MANTIDÆ.

[Cf. CAUDELL (255), CESNOLA (256B), KIRBY (804), NAVÁS (975), REHN (1129, 1136), TEPPER (1370), WERNER (1509), WILLIAMS (1530).]

General Catalogue, KIRBY (806A).

Habits and ootheca of *Gongylus gongyloides*, WILLIAMS, Tr. ent. Soc. London 1904, pp. 125-137.

Acanthops tuberculata ♀, REHN, p. 570, P. U. S. Mus. xxvii.

Carvilia costalis, Abyssinia, KIRBY, p. 85, Ann. Nat. Hist. xiii, **n. sp.**

Centromantis **n. g.** for part of *Eremiaphila*, **n. spp.** named but not described, WERNER, p. 404, Anz. Ak. Wiss. xxvii.

Hapalopeza maculata, Ceylon, KIRBY, p. 84, Ann. Nat. Hist. xiii, **n. sp.**

Harpagonyx carlottæ, Costa Rica, REHN, p. 568, P. U. S. Mus. xxvii, **n. sp.**

Heterochæta orientalis, E. Africa, KIRBY, p. 87, Ann. Nat. Hist. xiii, **n. sp.**

Humbertiella ocularis ♂, KIRBY, p. 82, t. c.

H. ? brunneri, Lombok, KIRBY, p. 83, t. c. **n. sp.**

Mantis religiosa in N. France, VUILLEMIN, pp. 27-29, Feuille Natural. xxxv; *M. religiosa*, value of dimorphic colour, CESNOLA, Biometrika iii, p. 58.

Oxyopsis **n. n.** for *Oxyops* SAUSS., CAUDELL, p. 184, J. N. York Ent. Soc. xii.

Paramusonia **n. n.** for *Musonia* SAUSS. & Z., REHN, p. 567, P. U. S. Mus. xxvii.

Photina gracilipes, Para?, KIRBY, p. 86, Ann. Nat. Hist. xiii, **n. sp.**

Polyspilota elegans, Himalaya, NAVÁS, p. 132, Bol. Soc. Aragon. iii, **n. sp.**

Pseudochæta **n. g.** p. 87, for *P. strachani* **n. sp.**, Lagos, p. 88, KIRBY, Ann. Nat. Hist. xiii.

Pseudomantis pulchellus, S. Australia, TEPPER, p. 163, Tr. R. Soc. S. Austral. xxviii, **n. sp.**

Pseudomiopteryx infusca ♀, REHN, p. 566, P. U. S. Mus. xxvii.

Pyrgomantis jonesi, W. Africa, KIRBY, p. 83, Ann. Nat. Hist. xiii, **n. sp.**

Sphendale robusta, Nepal, KIRBY, p. 86, t. c. **n. sp.**

Stagmatoptera typhon, Nicaragua, REHN, p. 107, Canad. Ent. xxxvi; *S. insatiabilis*, Costa Rica, REHN, p. 572, P. U. S. Mus. xxvii: **n. spp.**

Stagmomantis theophila, Costa Rica, REHN, p. 563, t. c. **n. sp.**

Theopompa westwoodi, W. Africa, KIRBY, p. 81, Ann. Nat. Hist. xiii, **n. sp.**

Vates townsendi, Mexico, REHN, p. 573, P. U. S. Mus. xxvii, **n. sp.**

PHASMIDÆ.

[Cf. CAUDELL (251, 255), KIRBY (805), REHN (1130, 1131), SCUDDER & COCKERELL (1267).]

Note on classification, with new subfamilies, KIRBY, pp. 372, etc., Ann. Nat. Hist. xiii.

Remarks on classification of *Phasmidæ*, REHN, p. 107, P. Ac. Philad. xvi.

General Catalogue, KIRBY (806A).

Ovaries, oogenesis, parthenogenesis, *Bacillus rossii*, DAIBER, pp. 177-202, pls. iii, iv, Jena. Zeitschr. xxxix.

Rearing; parthenogenesis, POLAK, p. 148, Ent. Ber. Nederland. i.

Acanthoclonia? paradoxa, Santarem, KIRBY, p. 444, Ann. Nat. Hist. xiii, **n. sp.**

Acanthomina **n. g.** for *Anophelepis rhipheus* Westw., KIRBY, p. 438, t. c.

- Anchiale nævia, stollii* etc., note, REHN, p. 88, P. Ac. Philad. lvi.
Aplopus cytherea ♀, REHN, p. 63, t. c.
A. similis, Swan isld., p. 65, *achatus*, Porto Rico, p. 68, REHN, t. c. **n. spp.**
Arrhidaeus apalamnus, Obi, REHN, p. 85, t. c. **n. sp.**
Aruanoidea aruana ♂ and varr., REHN, p. 79, t. c.
Bacillus coloradus, pl. i, fig. 4, p. 21, SCUDDER & COCKERELL, P. Davenport Ac. ix.
Bacteria, ferula is type, p. 61, *B. cubensis* ♀, p. 62, REHN, P. Ac. Philad. lvi; *B. tridens* Burm. to *Pseudosermyle*, REHN, p. 51, t. c.
Bactricia ridleyi, Singapore, KIRBY, p. 429, Ann. Nat. Hist. xiii, **n. sp.**
Bactrododema and *Pulophus*, REHN, p. 70, P. Ac. Philad. lvi.
Bacunculus stramineus, New Mexico, SCUDDER, p. 20, pl. i, fig. 1, P. Davenport Ac. ix; *B. dubia*, Paraguay, CAUDELL, p. 186, J. N. York Ent. Soc. xii : **n. spp.**
Bostra incompta, p. 57, *remiformis*, p. 58, Costa Rica, REHN, P. Ac. Philad. lvi; *B. jaliscensis*, Mexico, REHN, p. 514, t. c. : **n. spp.**
Calvisia maculicollis Westw. (as *Phasma*) = *atrosignata* Br., REHN, p. 72, t. c.
C. maculata, Penang, KIRBY, p. 435, Ann. Nat. Hist. xiii, **n. sp.**
Carausius bractus, Siam, p. 42, *mammatus*, p. 44, *obiensis*, p. 46, Obi, REHN, P. Ac. Philad. lvi, **n. spp.**
Ceratisceus n. g. Clitumninae, C. laticeps n. sp., Paraguay, CAUDELL, p. 188, J. N. York Ent. Soc. xii.
Cerorys bigibbus, Nicaragua, REHN, p. 48, P. Ac. Philad. lvi, **n. sp.**
Datames equalis, Obi, REHN, p. 89, t. c. **n. sp.**
Eubulides spuria, Australia, KIRBY, p. 441, Ann. Nat. Hist. xiii, **n. sp.**
Eurycantha willeyi (= *horrida* Sharp nec Boisd.) New Britain, *portentosa*, Rossel isld., p. 442, *sifia*, Thursday isld., p. 443, KIRBY, t. c. **n. spp.**
Eurycnema magnifica, New Guinea, p. 439, *viridissima*, N. Australia, p. 440, KIRBY, t. c. **n. spp.**
Haaniella n. n. for *Heteropteryx*, Haan nec Gray, KIRBY, p. 444, t. c.
Haplopus eadne, characters, cuts, CAUDELL, p. 950, P. U. S. Mus. xxvii.
Heliastus sumichrasti var. *n. rosea*, CAUDELL, p. 951, t. c.
Heteronemia ignava, Costa Rica, REHN, p. 54, P. Ac. Philad. lvi, **n. sp.**
Ignacia n. g. for *Pseudophasma* Bol. nec Kirb., REHN, p. 95, t. c.;
I. appendiculata, Nauta, KIRBY, p. 446, Ann. Nat. Hist. xiii, **n. sp.**
Lonchodes Gray = (*Dixippus* Stål), KIRBY, p. 373, Ann. Nat. Hist. xiii.
L. ? viridis, Tonkin, KIRBY, p. 373, t. c. **n. sp.**
Macella caulodes, Siam, REHN, p. 80, P. Ac. Philad. lvi, **n. sp.**
Marmessoidea phluctainoides referred to *Arrhidaeus*, KIRBY, p. 438, Ann. Nat. Hist. xiii.
M. phluctainoides, Japan, REHN, p. 73, P. Ac. Philad. lvi, **n. sp.**
Myronides ashmeadi, Siam, REHN, p. 38, t. c. **n. sp.**
Necroscia, N. roscipennis to be type, KIRBY, p. 436, Ann. Nat. Hist. xiii,
N. tonkinensis, Tonkin, id. p. 437, t. c. **n. sp.**
Neohirasea n. g. for *Parapachymorpha japonica*, REHN, p. 84, P. Ac. Philad. lvi.
Oncotophasma n. g. for part of *Bostra*, REHN, p. 59, t. c.
Oreophates n. g. near *Heteronemia* for *Bacteria peruana* Sauss., REHN, p. 56, t. c.
Orxines, xiphias Westw. is type, REHN, p. 71, t. c.
Oxyartes lamellatus, Tonkin, KIRBY, p. 374, Ann. Nat. Hist. xiii, **n. sp.**
Olcypoides iridescens, Trinidad, KIRBY, p. 445, t. c. **n. sp.**
Orthonecrosia n. n. for *Necrosia* Brunn., with *O. pulcherrima*, Borneo, p. 436, *ruficeps*, Solomon islds., p. 437, **n. spp.**, KIRBY, t. c.
Paradeptynia n. g. near *Baculum*, *P. fosteri n. sp.*, Paraguay, CAUDELL, p. 187, J. N. York Ent. Soc. xii.
Phænotharos n. g. for *Lopaphus struthioneus* Westw., KIRBY, p. 433, Ann. Nat. Hist. xiii.

- Phasma*, type is *P. empusa*, KIRBY, p. 439, t. c.
Phraortes mikado, Japan, REHN, p. 40, P. Ac. Philad. lvi, **n. sp.**
Phyllium scythe and *pulchrifolium*, variation and distinction, REHN, p. 106, t. c.
Planudes crenulipes, Costa Rica, REHN, t. c. **n. sp.**
Promachus? *latus*, p. 375, *bicolor*, p. 376, Tonkin, KIRBY, Ann. Nat. Hist. xiii, **n. spp.**
Pseudophasma phæton, p. 95, *cryptochlore*, p. 98, Costa Rica, REHN, P. Ac. Philad. lvi; *P. inca*, Peru, p. 447, *cambridgei*, p. 448, Santarem, KIRBY, Ann. Nat. Hist. xiii: **n. spp.**
Sermyle physconia, Costa Rica, REHN, p. 51, P. Ac. Philad. lvi, **n. sp.**
Sipyloidea pæciptera, Obi, REHN, p. 77, t. c. **n. sp.**
Sosibia peninsularis, Penang, KIRBY, p. 434, Ann. Nat. Hist. xiii, **n. sp.**
Stælonchodes n. g. (*Lonchodes* pars), p. 372, *S. gracillimus n. sp.*, Tonkin, p. 373, KIRBY, t. c.
Stratocles multilineatus, p. 91, *costaricensis*, p. 93, Costa Rica, REHN, P. Ac. Philad. lvi, **n. spp.**
Tersomia n. g. Bacteriinae, p. 431, for *T. brasiliensis n. sp.*, Iguarassu, p. 432, KIRBY, Ann. Nat. Hist. xiii.
Xerosoma glyptomerion, Costa Rica, REHN, p. 101, P. Ac. Philad. lvi, **n. sp.**

GRYLLIDÆ.

- [Cf. BRUNER (195), REHN (1131), SCUDDER & COCKERELL (1267), VOSS (1461), WALKER (1465).]
 Phagocytic organs in *Gryllidæ*, DAWYDOFF (356).
 Spermatogenesis, peculiar, *Gryllus*, VOINOV (1460).
Ectatoderus borealis, New Mexico, pl. iv, fig. 4, p. 58, SCUDDER, P. Davenport Ac. ix, **n. sp.**
Myrmecophila acervorum ♂, CSIKI, pp. 85, 88, Allatt. Kozl. Magyar. Tars. iii; *M. acervorum, ochracea*, habits, SILVESTRI, Ann. Mus. Napoli (n. s.) i, No. 13.
Nemobius fasciatus var. *n. abortivus*, CAUDELL, p. 248, Canad. Ent. xxxvi.
N. griseus, p. 182, *angusticollis*, p. 186, Ontario, WALKER, Canad. Ent. xxxvi; *N. brevicaudus*, Colorado, BRUNER, p. 57, Bull. Exp. Stat. Colorado 94: **n. spp.**
Æcanthus niveus, natural history, HOUGHTON, pp. 57–61, Ent. News Philad. xv.
Paranemobius schauinslandi, pl. xxxii, figg. 1–4, p. 567, ALFKEN, Zool. Jahrb. Syst. xix.
Thamnoscirtus cæruleus, Mexico, REHN, p. 548, P. Ac. Philad. lvi, **n. sp.**

LOCUSTIDÆ or TETTIGONIIDÆ.

- [Cf. COCKERELL (290), GILLETTE (605), HANCOCK (655), HUTTON (729), KRAUSZE (843, 844), NAVÁS (975), REHN (1131, 1132, 1139), SCUDDER & COCKERELL (1267), TEPPER (1370), WALKER (1466).]
Locustidæ, notes on some Australian, including *Acridopeza reticulata*, FROGGATT, pp. 733–737, plate, Agric. Gaz. N. S. W. xv.
 Annotated list of *Locustidæ* of Ontario, characters, song, etc., WALKER, Canad. Ent. xxxvi, pp. 325 etc.
 Phagocytic structures, *Cleandrus*, DAWYDOFF (357).
Anabrus simplex, habits, GILLETTE, pp. 321–324, pl. xix, Ent. News Philad. xv.

- Arethaca carita*, New Mexico, pl. iv, fig. 5, p. 52, SCUDDER, P. Davenport Ac. ix, **n. sp.**
- Camptonotus carolinensis*, leaf-rolling habits, CAUDELL, pp. 46-49, P. ent. Soc. Washington vi.
- Capnobotes*, table of species, *C. occidentalis*, habits, and var. *n. viridis*, COCKERELL, pp. 179-181, Entomologist 1904.
- Conocephalus ultimus*, Tonkin, KRAUSZE, p. 213, Ins. Börse 1904, **n. sp.**
- Ceuthophilus aridus*, Colorado, BRUNER, p. 57, Bull. Exp. Stat. Colorado 94 ; *C. virgatipes*, Georgia, REHN & HEBARD, p. 798, P. Ac. Philad. 1904 ; *C. politus*, pl. iv, fig. 3, p. 56, *ater*, p. 57, New Mexico, SCUDDER, P. Davenport Ac. ix ; *C. macropus*, Mexico, REHN, p. 545, P. Ac. Philad. lvi : **n. spp.**
- Cyphoderris monstrosa*, characters, natural history, var. *n. piperi*, CAUDELL, pp. 47-53, J. N. York Ent. Soc. xii.
- Dichopetada brevicauda*, New Mexico, pl. iv, fig. 1, p. 51, SCUDDER, P. Davenport Ac. ix, **n. sp.**
- Drymadusa arizonensis*, Arizona, REHN, p. 573, P. Ac. Philad. lvi, **n. sp.**
- Ephippiger vitium*, habits, XAMBEU, p. 124, Ann. Soc. Linn. Lyon l.
- E. pantingana*, Spain, NAVÁS, p. 191, Bol. Soc. Aragon. iii, **n. sp.**
- Eremopedes popeana*, New Mexico, pl. iv, fig. 2, p. 54, SCUDDER, P. Davenport Ac. ix, **n. sp.**
- Gammaroparnops crassicuris*, ALFKEN, pl. xxxii, figg. 5-9, Zool. Jahrb. Syst. xix.
- Gryllacris scripta*, Philippines, NAVÁS, p. 138, Bol. Soc. Aragon. iii ; *G. atrofrons*, S. Australia, TEPPER, p. 167, Tr. R. Soc. S. Austral. xxviii : **n. spp.**
- Gymnoplectron stephensiensis*, ALFKEN, pl. xxxii, fig. 10, p. 588, Zool. Jahrb. Syst. xix.
- Hexacentrus stali*, Tonkin, KRAUSZE, p. 213, Ins. Börse 1904, **n. sp.**
- Holochlora stali*, Tonkin, KRAUSZE, p. 29, t. c. **n. sp.**
- Orchelimum minor*, habits, DAVIS, p. 132, Canad. Ent. xxxvi ; *O. glaberrimum*, habits, HANCOCK, Psyche xi, pp. 69-71, pl. v.
- Phrixocnemis inhabilis*, St. Louis, REHN, p. 282, Ent. News Philad. xv, **n. sp.**
- Plagiostira albofasciata*, New Mexico, pl. iii, fig. 2, p. 55, SCUDDER & COCKERELL, P. Davenport Ac. ix, **n. sp.**
- Platycleis roeseli* var. *diluta*, ADELUNG, p. xxxv, Annuaire Mus. St. Petersb. viii.
- Pleiopectron serratum*, Chatham islands, HUTTON, p. 154, Tr. N. Zealand Inst. xxxvi, **n. sp.**
- Pristoceuthophilus marmoratus*, California, REHN, p. 280, Ent. News Philad. xv, **n. sp.**
- Pycnogaster brevipes* ♀, NAVÁS, pl. iv, Bol. Soc. Aragon. iii.
- Pyrrhizia brunneri*, Tonkin, KRAUSZE, p. 29, Ins. Börse 1904, **n. sp.**
- Saga*, species of Asia Minor and Syria, synonymy, WERNER, pp. 81, 82, Zool. Anz. xxviii.
- Stipator grandis*, Mexico, REHN, p. 544, P. Ac. Philad. lvi, **n. sp.**

ACRIDIIDÆ.

[Cf. BOLÍVAR (144-147), BRUNER (195, 614), EWING (472), FROGGATT (558), HANCOCK (655), LYNCH ARRIBALZAGA (897), MORSE (961, 962), NAVÁS (975), REHN (1131-1133, 1137), REHN & HEBARD (1134), RÖHLER (1185), TEPPER (1370).]

Revision of *Pyrgomorphidæ*, pts. I-VII, BOLÍVAR, Boll. Soc. espan. iv.
 Monograph of Ceylon *Tettigidæ*, HANCOCK, Spolia Zeylan. ii, pp. 97-157, 3 pls. and map.

- Notes on N. American *Acridiidae*, systematic, biological, distributional, MORSE, Publ. Carnegie Inst. No. 18.
- Antennal sense-organs, *Tryxalis*, RÖHLER, Zool. Anz. xxviii, pp. 188-192, cut.
- Notes and figures of a few species of Australian *Acridiidae*, FROGGATT, Agric. Gaz. N. S. W. xv, pp. 240-244, 1 pl.
- Experiments as to functions of nervous system and respiration, EWING, Kansas Univ. Sci. Bull. ii, No. 11.
- Acantherus* **n. g.** *Tryxalinae*, p. 22, *piperatus* **n. sp.**, New Mexico, pl. iii, fig. 3, p. 23, SCUDDER, P. Davenport Ac. ix.
- Acantholobus* **n. g.** p. 131, for part of *Criotettix* Bol., *A. miliarius cuneatus* var. **n.**, p. 133, HANCOCK, Spolia Zeylan. ii.
- Achurum sumichrasti*, pl. i, fig. 6, p. 34, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Acolophus minor*, Colorado, BRUNER, p. 60, Bull. Exp. Stat. Colorado 94, **n. sp.**
- Acrida turrita*, distribution, SHUGUROV [in Russian], p. 109, Rev. Russe Ent. iv.
- Acridium peregrinum*, migratory swarm, MORSE, p. 528, J. Bombay Soc. xv.
- Acrocara maculipennis*, pl. i, fig. 1, p. 49, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Acrolophitus variegatus*, Texas, BRUNER, p. 48, t. c. **n. sp.**
- Æolophilus crassus*, New Mexico and Mexico, SCUDDER, p. 42, P. Davenport Ac. ix, **n. sp.**
- Ageneotettix occidentalis*, Colorado, BRUNER, p. 58, Bull. Exp. Stat. Colorado 94, **n. sp.**
- Amblytropidia mysteca*, pl. i, fig. 14, p. 66, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- A. magna*, Mexico, p. 63, *trinitatis*, S. America, p. 65, *costaricensis*, Nicaragua, p. 66, *inegnita*, p. 67, *elongata*, p. 68, Mexico, BRUNER, t. c. **n. spp.**
- Amphitornus ornatus*, pl. i, fig. 13, p. 58, BRUNER, t. c.
- Anarchita* **n. g.** for *Pyrgomorpha aptera* Bol., BOLÍVAR, p. 459, Bol. Soc. espan. iv.
- Apterolettix* **n. g.** *A. obtusus* **n. sp.**, Ceylon, HANCOCK, p. 140, Spolia Zeylan. ii.
- Arphia canora*, New Mexico, REHN, p. 564, P. Ac. Philad. lvi; *A. truculenta*, Mexico, REHN, p. 522, t. c. : **n. spp.**
- Boopedon hoagi*, p. 519, *gracile*, p. 520, Mexico, REHN, t. c. ; *B. fuscum*, Arizona, p. 96, *savannarum*, Nebraska, p. 97, *diabolicum*, pl. i, fig. 1, *flaviventris*, Mexico, p. 98, BRUNER, Biol. Centr.-Amer. Orthopt. ii : **n. spp.**
- Boëtettix argentatus*, pl. i, fig. 24, p. 52, BRUNER, t. c.
- Caconda plicatula*, Angola, BOLÍVAR, p. 110, Bol. Soc. espan. iv, **n. sp.**
- Calamaecis* **n. g.** near *Orthacris*, *C. clendoni* **n. sp.**, Mexico, REHN, p. 529, P. Ac. Philad. lvi.
- Caloptenus italicus* in France in 1901, CREUSOT, pp. 28-30, Bull. Soc. Autun xv.
- Campylocantha vegana*, New Mexico, SCUDDER & COCKERELL, p. 40, P. Davenport Ac. ix, **n. sp.**
- Cephalocoema chapadensis*, Brazil, REHN, p. 681, P. Ac. Philad. 1904, **n. sp.**
- Chrotogonus*, revision, BOLÍVAR, pp. 91-110, Bol. Soc. espan. iv.
- C. abyssinicus*, p. 97, Africa, *brevis*, Kurrachee, p. 99, *lameerei*, p. 100, *occidentalis*, p. 104, *gabonicus*, p. 105, W. Africa, *rollini*, Boma Sundi, *bloyeti*, Kondoia, p. 106, *varelai*, E. Africa, *marshalli*, Salisbury, p. 107, BOLÍVAR, t. c. **n. spp.**
- Cladonotus latiramus*, Ceylon, HANCOCK, p. 114, pl. i, fig. 1, Spolia Zeylan. ii, **n. sp.**

- Conozoa acuminata*, p. 32, pl. ii, fig. 4, *corrugata*, p. 33, *melleola*, fig. 2, *picturata*, p. 34, New Mexico, SCUDDER, P. Davenport Ac. ix, **n. spp.**
- Coryphistes cyanopteroides*, p. 164, *serratus*, p. 165, *nigroconspersus*, p. 166, S. Australia, TEPPER, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Criotettix spinilobus*, Ceylon, HANCOCK, p. 129, *Spolia Zeylan.* ii, **n. sp.**
- Cuculligera flexuosa* var. *n. azurea*, NAVÁS, p. 195, Bol. Soc. Aragon. iii.
- C. capucina*, Spain, NAVÁS, p. 193, t. c. **n. sp.**
- Dactylotum histricum*, Mexico, REHN, p. 539, P. Ac. Philad. lvi, **n. sp.**
- Dasyleurotettix* **n. g.** near *Diotarus*, *D. curriei* **n. sp.**, Liberia, REHN, p. 658, t. c.
- Deltonotus* **n. g.** *Cladonotinæ*, *D. tectiformis* **n. sp.**, Ceylon, HANCOCK, p. 111, pl. i, fig. 2, *Spolia Zeylan.* ii.
- Dichromorpha mexicana*, pl. i, fig. 18, *longipennis*, Mexico, p. 87, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Encoptolophus coloradensis*, Fort Collins, BRUNER, p. 58, Bull. Exp. Stat. Colorado 94, **n. sp.**
- Eotettix pusillus*, *palustris*, N. America, MORSE, p. 7, Psyche xi, **n. spp.**
- Erianthus nipponensis*, Japan, REHN, p. 672, P. Ac. Philad. 1904, **n. sp.**
- Eritettix brachypterus*, Mexico, BRUNER, p. 53, Biol. Centr.-Amer. Orthopt. ii, **n. sp.**
- Erucius magnificus* (= *vitreus* Brunn.), Labuan, REHN, p. 674, P. Ac. Philad. 1904, **n. sp.**
- Euparatettix* **n. g.** *E. parvus* **n. sp.**, Ceylon, HANCOCK, p. 145, *Spolia Zeylan.* ii.
- Eupedetes* **n. g.** near *Eritettix*, p. 24, *carinatus* **n. sp.**, New Mexico, pl. i, fig. 2, p. 25, SCUDDER, P. Davenport Ac. ix; *E.*, descr. reproduced, Biol. Centr.-Amer. Orthopt. ii, p. 54.
- Gesonia zonocera*, Philippines, NAVÁS, p. 136, Bol. Soc. Aragon. iii, **n. sp.**
- Gomphocerus meridionalis*, Mexico, BRUNER, p. 93, Biol. Centr.-Amer. Orthopt. ii, **n. sp.**
- Hedotettix gracilis abortus* var. *n.*, HANCOCK, p. 151, *Spolia Zeylan.* ii.
- H. attenuatus*, Ceylon, id. l. c. **n. sp.**
- Hesperotettix gillettei*, *coloradensis*, Colorado, BRUNER, p. 61, Bull. Exp. Stat. Colorado 94, **n. spp.**
- Humpatella severini*, Congo, BOLÍVAR, p. 438, Bol. Soc. espan. iv, **n. sp.**
- Hybusa reedi*, Chile, REHN, p. 679, P. Ac. Philad. 1904, **n. sp.**
- Lamellitettix* **n. g.** near *Mazarredia*, p. 125, *L. acutus* **n. sp.**, Ceylon, p. 126, pl. ii, fig. 6, HANCOCK, *Spolia Zeylan.* ii.
- Laufferia* **n. g.** for *Ochrophlebia chloronota*, BOLÍVAR, p. 445, Bol. Soc. espan. iv.
- Lepteia* **subg. n.** of *Pyrgomorphella* for *P. debilis* Finot, BOLÍVAR, p. 457, t. c.
- Leuconotus* **n. g.** *L. biolleyi* **n. sp.**, Costa Rica, BRUNER, p. 57, Biol. Centr.-Amer. Orthopt. ii.
- Linoceratium* **n. g.** near *Orphulella*, *L. boucardi* **n. sp.**, Central America & Colombia, BRUNER, p. 84, t. c.
- Loxilobus* **n. g.** near *Criotettix*, *L. acutus*, pl. i, fig. 3, p. 134, *rugosus*, p. 135, **n. spp.**, Ceylon, HANCOCK, *Spolia Zeylan.* ii.
- Macherocera obscura*, p. 50, *magna*, *pacifica*, p. 51, Mexico, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Maura venusta*, p. 320, *modesta*, p. 322, *marshalli*, p. 323, *selysi*, p. 325, Africa, BOLÍVAR, Bol. Soc. espan. iv, **n. spp.**
- Mazarredia aptera*, Labuan, REHN, p. 663, P. Ac. Philad. 1904, **n. sp.**
- Melanoplus flabellifer*, *brevipennis* var. *n.*, BRUNER, p. 65, Bull. Exp. Stat. Colorado 94.
- M. symmetricus*, *divergens*, p. 8, *deceptus*, *similis*, p. 9, *celatus*, *sylvestris*,

- carnegiei*, p. 10, *strumosus*, *tribulus*, p. 11, *devius*, *decoratus*, p. 12, *australis*, p. 13, N. America, MORSE, Psyche xi; *M. stoneri*, New Jersey, REHN, p. 85, Ent. News Philad. xv; *M. sanguineus*, p. 63, *tristis*, p. 64, *dimidipennis*, p. 66, Colorado, BRUNER, Bull. Exp. Stat. Colorado 94; *M. scitus*, p. 44, *neomexicanus*, p. 46, *bicoloratus*, p. 48, *quadratus*, p. 49, New Mexico, SCUDDER, P. Davenport Ac. ix: **n. spp.**
- Melanotettix* **n. g.** near *Stenobothrus*, p. 80, *M. dibelonus*, pl. i, fig. 16, **n. sp.**, Mexico, p. 91, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Mermiria texana*, pl. i, fig. 19, *maculipennis*, fig. 9, BRUNER, p. 38, t. c.
- Mestobregma thomasi* **n. n.** for *cinctum* Br. nec Thomas, CAUDELL, p. 125, P. ent. Soc. Washington vi.
- Mitraria pontificalis* Liberia, REHN, p. 664, P. Ac. Philad. 1904, **n. sp.**
- Monistria ligata*, Sydney, BOLÍVAR, p. 436, Bol. Soc. espan. iv, **n. sp.**
- Napaia gracilis*, pl. i, fig. 2, p. 90, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Ochrophlebia proxima*, S. Africa, BOLÍVAR, p. 444, Bol. Soc. espan. iv, **n. sp.**
- Ochrophlegma* **subg. n.** of *Ochrophlebia*, BOLÍVAR, p. 443, t. c.
- Ochrotettix* **n. g.** *O. salinus* **n. sp.**, Mexico, pl. i, figg. 4, 5, BRUNER, p. 56, Biol. Centr.-Amer. Orthopt. ii.
- Opeia imperfecta*, Texas and Mexico, p. 59, *pallida*, *mexicana*, pl. i, fig. 15, p. 60, *palmeri*, *lineata*, p. 61, Mexico, BRUNER, t. c. **n. spp.**
- Orchetypus ocreatus*, Congo, REHN, p. 670, P. Ac. Philad. 1904, **n. sp.**
- Orphula azteca*, pl. i, fig. 3, pp. 73, 74, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- O. meridionalis*, Costa Rica, id. p. 73, t. c. **n. sp.**
- Orphulella graminea*, Arizona, p. 78, *meridionalis*, p. 81, *costaricensis*, Costa Rica, *prominula* p. 82, *robusta*, p. 83, Mexico, BRUNER, t. c. **n. spp.**
- Papagoa* **n. g.** *Tryxalineæ*, *P. arizonensis* **n. sp.**, Arizona, BRUNER, p. 42, t. c.
- Parachlæbata* **n. g.** near *Orphulella*, p. 83, *P. pratensis* **n. sp.**, Cuba, p. 84, pl. i, fig. 10, BRUNER, t. c.
- Parasphenia dubia*, p. 440, *picticeps*, p. 441, Africa, BOLÍVAR, Bol. Soc. espan. iv, **n. spp.**
- Paropomala pallida* p. 40, *dissimilis*, p. 41, North America, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Perixerus variabilis*, Mexico, REHN, p. 541, P. Ac. Philad. lvi, **n. sp.**
- Phaneroturis* **n. g.** *P. cupido*, pl. i, fig. 17, **n. sp.**, Guatemala, p. 88, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Phymateus*, tabulation of species, with varr. **n.**, BOLÍVAR, pp. 403–418, Bol. Soc. espan. iv.
- P. pulcherrimus*, Abyssinia, p. 408, *coralliferus*, Transvaal, p. 410, *puniceus*, p. 415, *cardinalis*, p. 416, Madagascar, BOLÍVAR, t. c. **n. spp.**
- Phyteumas* **n. g.** for *Phymateus olivaceus* Karsch, BOLÍVAR, p. 402, t. c.
- Platehippius* **subg. n.** of *Platystolus*, for *ustulatus* Ramb., NAVÁS, p. 197, Bol. Soc. Aragon. iii.
- Platystolus*, cf. *Platehippius*.
- P. obrius*, Spain, NAVÁS, p. 196, Bol. Soc. Aragon. iii, **n. sp.**
- Plectrotettix calidus*, p. 101, *excelsus*, *macneilli*, pl. i, fig. 12, p. 102, Mexico, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Plerisca* **n. g.** *Pyrgomorphinæ*, *peringueyi* **n. sp.**, Cape Good Hope, p. 442, BOLÍVAR, Bol. Soc. espan. iv.
- Pæcilocerus tessellatus*, India, BOLÍVAR, p. 433, t. c. **n. sp.**
- Psoloessa buddiana*, pl. i, fig. 8, p. 104, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Pyrgomorpha inæqualipennis*, hab. ?, *cylindrica*, Angola, p. 453, *capensis*, S. Africa, p. 455, BOLÍVAR, t. c. **n. spp.**
- Pyrgomorphella sphenarioides*, Abyssinia, *madecassa*, Madagascar, BOLÍVAR, p. 458, Bol. Soc. espan. ii, **n. spp.**
- Rubellia brancsiki*, Madagascar, BOLÍVAR, p. 437, t. c. **n. sp.**

- Scelimena logani*, Ceylon, aquatic, HANCOCK, p. 120, pl. i, fig. 5, *Spolia* Zeylan. ii; *S. abbotti*, Siam, REHN, p. 660, P. Ac. Philad. 1904 : **n. spp.**
- Schistocerca philippina*, Mindanao, NAVÁS, p. 137, Bol. Soc. Aragon. iii; *S. peruviana*, Peru, LYNCH ARRIBÁLZAGA, p. 2, An. Mus. Buenos Aires (3) ii : **n. spp.**
- Seyllina physopoda*, Himalaya, NAVÁS, p. 133, Bol. Soc. Aragon. Ci. nat. iii, **n. sp.**
- Silvitettix n. g.* p. 55, *S. communis n. sp.*, Costa Rica, p. 56, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Sinaloa brevispinis*, Mexico, REHN, p. 534, P. Ac. Philad. lvi, **n. sp.**
- Sisantum n. g.* near *Orphulella*, *S. notochloris n. sp.*, pl. i, fig. 11, p. 69, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Spharagemon saxatile* var. **n. planum**, MORSE, p. 13, Psyche xi.
- Sphenariinae*, revision, BOLÍVAR, pp. 306-328, Bol. Soc. espan. iv.
- Stenacris* Walk. = (*Arnilia* Stål), REHN & HEBARD, p. 787, P. Ac. Philad. 1904.
- Syrbula pacifica*, p. 44, *robusta*, Mexico, *modesta*, Arizona, p. 46, BRUNER, Biol. Centr.-Amer. Orthopt. ii, **n. spp.**
- Tæniopoda tamaulipensis*, Mexico, REHN, p. 531, P. Ac. Philad. lvi, **n. sp.**
- Tanita n. g.* p. 446, for *Pyrgomorpha* part, with *T. longiceps*, p. 447, *loosi*, p. 449, *ferrierei*, *purpurea*, p. 450, **n. spp.**, Africa, BOLÍVAR, Bol. Soc. espan. iv.
- Tapesia n. n.* for *Petasia*, p. 311, *T. producta*, p. 383, *karschi*, p. 315, Africa, **n. spp.**, *T. spumans* varr. **n.** pp. 316-318, BOLÍVAR, t. c.
- Taphronota calliparea* var. **n. poultoni**, p. 397, BOLÍVAR, t. c.
- T. dimidiata*, Abyssinia, p. 397, *merceti*, p. 398, *amaranthina*, p. 400, W. Africa, BOLÍVAR, t. c. **n. spp.**
- Tenuitarsus n. g.* *Chrotogoninae*, *revoili n. sp.*, Somali land, BOLÍVAR, p. 90, t. c.
- Tetanorhynchus biastatus*, p. 677, *smithi*, p. 678, Brazil, REHN, P. Ac. Philad. 1904, **n. spp.**
- Tettigidia pulchella*, British Guiana, REHN, p. 669, t. c. **n. sp.**
- Tettix atypicalis*, p. 142, with var. *ceylonus*, p. 143, Ceylon, HANCOCK, *Spolia* Zeylan. ii, **n. sp.**
- Thyripton n. g.* p. 68, *T. vitripenne n. sp.*, Mexico, p. 69, BRUNER, Biol. Centr.-Amer. Orthopt. ii.
- Trimerotropis inconspicua*, Colorado, BRUNER, p. 59, Bull. Exp. Stat. Colorado 94; *T. rubripes*, New Mexico, REHN, p. 568, P. Ac. Philad. lvi; *T. cyanea*, pl. ii, fig. 3, p. 36, *alliciens*, fig. 1, p. 37, New Mexico, SCUDDER, P. Davenport Ac. ix : **n. spp.**
- Zapata n. g.* near *Aulocara*, *Z. brevipennis*, pl. i, fig. 22, **n. sp.**, Mexico, BRUNER, p. 103, Biol. Centr.-Amer. Orthopt. ii.

XIV. ECHINODERMA.

BY

F. A. BATHER.

CONTENTS.

| | Page |
|--|------|
| Introduction | 3 |
| Corrigenda in Previous Records | 6 |
| I.—TITLES | 7 |
| II.—BIOLOGY. | |
| A. Evolution. | |
| i General Principles | 31 |
| ii Relations of Echinoderma | 31 |
| iii Phylogenies of smaller groups | 31 |
| B. Morphology. | |
| i Anatomy | 32 |
| (This is divided into Classes a—h, as under IV, and each Class is subdivided as follows):— | |
| 1. General Accounts. | |
| 2. Symmetries. | |
| 3. Homologies of Classes. | |
| 4. Skeletal tissue or Stereom. | |
| 5. Skeletal anatomy. | |
| 6. Hydrocoel and associated cavities, Respiratory organs. | |
| 7. Coelom and other Body-cavities and their Contents. | |
| 8. Digestive system. Cuvierian organs. | |
| 9. Nervous systems and sense-organs. | |
| 10. Mesodermal tissues (exc. skeletal). | |
| 11. Axial organ or Ovoid gland. | |
| 12. Generative organs and gonads. | |
| ii Variation :— | |
| a. In form | 34 |
| b. In form and surface-characters | 34 |
| c. In colour | 34 |
| d. Meristic (1 & 2) | 34 |
| e. Abnormalities | 34 |

| | Page |
|--|------|
| iii Secondary Sexual Characters :— | |
| a. Differences of Form or Structure | 34 |
| b. Differences of colour | 34 |
| c. Protection of young | 34 |
| c. Physiology :— | |
| i General | 34 |
| ii Circulation | 35 |
| iii Respiration | 35 |
| iv Alimentation and Digestion | 35 |
| v Excretion and its Products | 35 |
| vi Sensation | 35 |
| vii Miscellanea and Experimental | 35 |
| d. Bionomics :— | |
| i General Accounts (Vacant) | |
| ii Special habits | 35 |
| iii Habitat (in Classes a—h, as under IV) | 35 |
| iv Feeding (ditto) (ditto) | 35 |
| v Defence and Protection (Vacant) | |
| vi Locomotion | 35 |
| vii Autotomy and Regeneration (in Classes a—h) | 36 |
| viii Parasites and Commensals (ditto) | 36 |
| ix Echinoderms as Food | 36 |
| x Echinoderms in Geological Aspect | 36 |
| e. Miscellaneous :— | |
| i Research and Instruction (a. Preservation. b. Methods of research. c. Museum exhibits and Collections. d. Instruction) | 37 |
| ii Economics | 37 |
| iii Bibliography | 37 |
| iv Historical, Popular notions, &c. | 37 |
| f. Auxology :— | |
| i General principles (Vacant) | |
| ii General accounts | 37 |
| iii Formation of Gonads | 37 |
| iv Oviposition, Fertilisation, Segmentation | 37 |
| v Larval stages | 38 |
| vi Organogeny, 1-12, as under II, B, i. | 38 |
| vii Post-larval growth-stages | 38 |
| viii Developmental mechanics and Experimental Embryology | 38 |
| (Under each of the above a—h indicate Classes as under IV.) | |

III.—DISTRIBUTION.

A. Geographical :—

| | |
|--|----|
| i General | 39 |
| ii Atlantic Ocean and adjacent Seas | 40 |
| iii Indian Ocean and adjacent Seas | 40 |
| iv Pacific Ocean and adjacent Seas | 41 |
| v Arctic Ocean and adjacent Seas | 41 |
| vi Antarctic Ocean and adjacent Seas | 42 |

| | Page |
|---|----------|
| B. Geological :— | |
| i General | 42 |
| ii Cainozoic :— | |
| a. General | 42 |
| b. Pleistocene | 42 |
| c. Pleiocene | 42 |
| d. Meiocene | 42 |
| e. Oligocene | (Vacant) |
| f. Eocene | 43 |
| iii Mesozoic :— | |
| a. General | (Vacant) |
| b. Cretaceous (1. Upper. 2. Lower) | 43 |
| c. Jurassic (1. Upper. 2. Middle. 3. Lower) | 45 |
| d. Lias (including Rhaetic) | 45 |
| e. Trias | 46 |
| iv Palæozoic :— | |
| a. General | 46 |
| b. Permian | 46 |
| c. Permo-Carboniferous | 46 |
| d. Upper Carboniferous | 46 |
| e. Lower Carboniferous | 46 |
| f. Devonian | 46 |
| g. Silurian | 46 |
| h. Ordovician | 47 |
| k. Cambrian | (Vacant) |
| l. Pre-Cambrian | (Vacant) |

IV.—SYSTEMATIC.

| | |
|---|----|
| A. Echinoderma, general | 47 |
| B. Holothurioidea | 47 |
| C. Echinoidea | 50 |
| D. Asteroidea | 74 |
| E. Ophiuroidea | 80 |
| F. Crinoidea | 87 |
| G. Cystidea and Edrioasteroidea | 93 |
| H. Blastoidea | 95 |
| K. Incertæ Sedis | 96 |

INTRODUCTION.

I. TITLES. The total 303 is thus made up: 1891, 1; 1892, 3; 1896, 2; 1898, 2; 1899, 2; 1900, 3; 1901, 10; 1902, 12; 1903, 27; 1904, 239; 1905, 2. The sudden decline in both the total and the number for the year is partly due to a change in the method of obtaining the titles, partly to the fact that longer working hours at the British Museum (Nat. Hist.) render it more difficult for members of the staff to utilize the library of that establishment. In these circumstances the task of copying titles, indexing names, and sorting slips has been mainly performed by Miss Grant, to whose intelligent care I am deeply indebted. Making further allowance for the usual deficiency, the following numbers of writings dealing with Echinoderms in the years 1891–1904 inclusive, prove a genuine increase in the annual output: 189, 171, 166, 155, 172, 219, 198, 230, 264, 318, 314, 289, 317, 240. That this has *not* been accompanied by increase in the length of the Record is clear from comparison of my predecessor's

1891 Record (devoting 91 pages to 186 papers and a few abstracts) with the 1902 Record (where 307 papers with many notes and abstracts are indexed in 88 pages). The length of a Record for a given year depends less on the number of titles than on the proportion of large monographs, and in such works 1904 was peculiarly rich.

II. BIOLOGY. The Echinoderm volume of DELAGE & HÉROUARD'S 'Traité de Zoologie concrète' (54) gives an admirable summary of the morphology, especially of living forms, the Phylum as a whole and each Class being described in terms of an ideal type. This method, though LAMBERT'S criticism of it is most just, forms a valuable complement to the evolutionary method adopted in the corresponding volume of Lankester's 'Treatise' (Zool. Rec. 1900, No. 19). There is, however, a chapter on phylogeny, in which the authors adopt as at least *ben trovato* the Pelmatozoic theory elaborated in that treatise. They add full accounts of the Physiology and Embryology of each extant Class. In a separate paper (121) HÉROUARD puts forth his own hypothesis of the origin of Echinoderms from a metamerically segmented Dipleuraea. A more elaborate speculation is started by E. MEYER (190): a typically segmented Annelid, taking to a half-sedentary, partly tubicolous life gives rise to the three groups of Prosopygia—Sipunculoidea, Phoronoidea, and Bryozoa; at an early stage in this history branched off the hypothetical *Astrelminthes*, of which the Dipleurula is the ontogenetic equivalent; these possessed a terminal anus, an anterior pair of nephridia with internal openings near the diaphragm, a crown of tentacles with ciliated grooves round the terminal mouth, and a pair of symmetric diaphragm-sacks as precursors of the ambulacral system. SIMROTH (256) dismissing all other theories as fantastic, and brushing aside palaeontology, considers that the Echinoderms are derived from their own parasites, the Myzostomes, in this way "dass je ein Darmblindsack in eine Sinnesknospe hineinwucherte und sich mit dieser verband. Das dürfte das ganze Geheimnis sein."

Anatomy.—A large number of important details, beautifully illustrated, are contributed by AGASSIZ (3) to our knowledge of the Echinoid test, principally in abyssal Spatangoids. Since this memoir suffers from the absence of an index, a list of the genera dealt with is given under III, A, iv. A similar assemblage is handled by DE MEIJERE (57), but the structural features which appeal to him are so different that the two authors scarcely seem to treat of the same class of animals. The anatomy of the test also receives elucidation from MORTENSEN (194–195), who specially discusses the homologies of pedicellariae. TORNQUIST'S study of the apex in *Schizaster* (268) will help the classification of this difficult genus; I regret my inability to record his paper on Eocene fossils from Madagascar. The existence of an inner and outer series of plates in the ambulacrum of *Palaeodiscus*, as maintained by Sollas, is confirmed by SPENCER (264) who also confirms the views of Roemer, Meek, and Jaekel as to the structure of the food-groove in *Agelacriniidae*. The paper deserved better proof-reading than papers seem to get with our leading society.

Physiology, Bionomics, Auxology.—OESTERGREN (204) publishes an interesting note, and UEXKULL (274) a profound and fascinating study, of Ophiurid arm-movements. The reproduction of Starfish from isolated rays is convincingly proved by MONKS (193) & KELLOGG (139). SCHMIDT'S (246) exact description of the early stages in *Echinus* larva should be useful for comparison with experimental results, while DELAGE'S account (52) of *Asterias* larvae, though based on parthenogenetic individuals, contains facts of value to the morphologist, who will of course also read MACBRIDE (172) on *Ophiothrix*, and should glean something from the numerous descriptions of minute individuals and of growth-stages in various Echinoids which enrich the pages of AGASSIZ (3). Miss KLEM'S (142) criticism of Jackson & Jaggard's work on the growth of *Melonites* is not

immediately intelligible. Among papers on experimental embryology one cannot refrain from noting the beautiful experiments of GARBOWSKI (94) and the startling fact incidentally announced by JANSSENS (136) that all the experts at Naples, trying all methods on all manner of material for a whole breeding season could not get a solitary case of parthenogenesis.

III. DISTRIBUTION. The chief interest of the following papers is faunistic. On the Ophiurids collected by the 'M. Sars' GRIEG (106) bases an interesting discussion of the cold-water fauna of the North Sea and its limits, and deals in similar manner with the *Crinoidea* (107). CLARK (38) revises and describes the Echinoderm fauna of Woods Hole. KOEHLER's study of 'Siboga' Ophiurids (143) extends the range of many species and emphasizes the wide bathymetric limits of others. FOURTAU (83) gives an interesting account of the recent and Pleistocene Echinoid fauna of the Gulf of Suez, and draws conclusions as to its connections with the Indian Ocean and the Mediterranean.

ROWE (235) extends his zoning of the English Chalk to the Yorkshire coast which presents several remarkable features of Echinoderm distribution, e. g. *Zeuglopleurus rowei* in Marsupites zone, *Infulaster rostratus* from zone of *M. cortestudinarium* to that of *Actinocamax quadratus*, and *Cardiaster ananchytis* from *M. coranguinum* to *A. quadratus* zone. The bionomics of Solenhofen Echinoderms are studied by WALTHER (281). FRAIPONT (85) publishes photographs of Echinoderms from the Black Marble of the Belgian Carboniferous, a fauna hitherto undescribed and unfortunately too ill preserved for satisfactory determination. *Hemiaster cubicus* has been largely quoted from Sinai, but in the collections at his disposal NEWTON (196) finds only *Linthia oblonga*.

IV. SYSTEMATIC. The classification of *Echinoderma* both recent and fossil, down to subgenera, given by DELAGE & HÉROUARD (54) is valuable as giving a more complete list of names than can be found in any existing work on the subject, with an index showing synonyms and even misprints. The adoption of such groups as *Palasteriidae* and *Euasteriidae*, or *Palophiuridae* and *Colophiuridae*, the separation of *Synapta* from all other Holothurians, and the division of Inadunate Crinoids into *Larviformida* and *Fistulida* are steps possibly warranted but certainly retrograde. The formation of Family names by the addition of *-inae* to the full name of a genus (e. g. *Ophiohelusinae*) accords neither with etymology nor the custom of systematists. These and similar vagaries of nomenclature, though indexed in this Record, are not emphasized as novelties. Under *Asteroidea*, however, the authors propose the new generic names *Echinodiscaster* for *Echinodiscus* Stürtz, and *Calvasterias* for *Calveria hystrix* [better known as *Korethraster hispidus*], while they mention *Goniodon*, as well as the Ophiurid *Astrodia*, now first indexed as new genera. The details of their classification of *Echinoidea* are largely due to MORTENSEN.

MISS KLEM's (142) bibliography and list of palaeozoic Echinoids is a useful aid to the memory, but should not be trusted implicitly. Among recent sea-urchins BELL (22) founds *Eobrissus*, a new Spatangoid. The memoir on Panamic deep-sea Echinoids by AGASSIZ (3) is less systematic than morphological; it contains a new genus, *Pilematechinus*, also *Centrocidaris*, a new subgenus of a genus not stated, and much condemnation of De Meijere & Mortensen. The latter (195) in describing Regular Echinoids collected in the Gulf of Siam, gives a fresh classification of the Subclass, and a most careful study of *Diadematidae* and *Temnopleuridae*; in the matter of new genera his restraint is commendable. His taxonomic methods are followed by DE MEIJERE (57), who describes new species of Echinoids and one new genus, *Selenechinus*, from the Malay Archipelago, and redescribes the interesting *Echinocorytidae* and *Pourtalesidae* introduced in his preliminary note; his summary of results is welcome to those who cannot stomach the details of spines and spicules. In describing new

species of *Plesiolampas* and *Hemiaster* from the Eocene of N. Nigeria, BATHER (18) considers the nature of the heteronomy more important for classification than the fascioles. P. DE LORIOI (162) describes many species, new and old from Patagonia, among them a new Asteroid genus *Lahillea*, a name perilously close to *Lahillia* Cossmann 1899; also an Echinoid fauna from Honduras similar to that in the Comanche series of Texas; finally he believes that he has discovered the type-specimen of that contentious species *Scutella striatula* M. de Serres.

The type-specimens of many inadequately described or figured species of Ophiurids are redescribed by KOEHLER (144). Among 151 species of deep-sea Ophiurids collected by the 'Siboga,' the same author (143) finds 112 new species and the new genera *Ophiopallas*, *Ophiocirce*, *Ophiomoeris*, *Ophiocrates*, *Ophiomidas*, *Ophioleuce*, *Ophiochrysis*, *Ophiodoris*, *Ophiomytis*, and *Astrocharis*.

Following up the observations of Mortensen, GRIEG (107) shows the systematic value of genital pinnules and other small points in *Antedon*. American Crinoids of Devonian age are revised and described by Miss WOOD (291), who founds the new genera *Tripleurocrinus* and *Tylocrinus*. In a valuable study of various Devonian and Silurian Cystidea of N. America, SCHUCHERT (249) introduces the new genera *Tetracystis* and *Trimerocystis*; his discussion of *Camarocrinus* is the most convincing yet published.

The following table gives the numbers of the new names proposed, so far as can be ascertained from ordinary perusal of the works recorded.

| | New genera | Altered generic names | New sub- genera | New species | Altered specific names | New varr. |
|----------------|---------------|-----------------------------|-----------------------|----------------|------------------------------|--------------|
| Holothurioidea | 0 | 0 | 0 | 7 | 0 | 0 |
| Echinoidea | 3 | 0 | 1 | 50 | 0 | 4 |
| Asteroidea | 2 | 2 | 0 | 9 | 0 | 0 |
| Ophiuroidea | 11 | 0 | 0 | 114 | 0 | 1 |
| Crinoidea | 2 | 0 | 0 | 32 | 1 | 8 |
| Cystidea | 2 | 0 | 0 | 11 | 0 | 1 |
| Blastoidea | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 20 | 2 | 1 | 223 | 1 | 14 |

CORRIGENDA in previous Records.

Record for 1894, vol. XXXI:—

p. 43. *Freyella spinosa*. For 'Soudan' read 'N.E. of C. Verd Is.'

Record for 1901, vol. XXXVIII:—

p. 10. No. 22. BEEDE, J. W. Reference should read "Tr. Kansas Ac. xvi, pp. 70-84 (June, 1899)."

p. 11. No. 36. BOESE, E. After "vertiente" insert "oriental."

Record for 1903, vol. XL:—

p. 32. No. 282. SAVIN, L. This is an abstract of SAVIN (247) Zool. Rec. 1902.

The Recorder is always glad to receive corrections, and would be specially grateful if Authors, Editors, or Publishers would occasionally enable him to remove the asterisk indicating that a work has not been seen.

Further personal remarks by the Recorder are placed in [].

I. TITLES.*

ABDERHALDEN, E. See FUEHNER, H. (90).

1. ABRIC, P. A propos de la fécondation spermatozoïdale et chimique et de la parthénogenèse. C.R. Soc. Biol. lvii, pp. 271, 272. (28 Oct.)
[II, F, viii.]

ACKERMANN, A. (2) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 839. (30 Dec. 1902.)

2. ACLAND, H. D. On a new cave on the eastern side of Gibraltar. Quart. J. Geol. Soc. lx, pp. 30-36, 2 text-figg., pl. vi. (15 Feb.)
[III, B, ii, b.]

3. AGASSIZ, A. The Panamic deep sea Echini (being No. 32 of Reports on an exploration...by the U. S. ss. "Albatross," during 1891...) Mem. Mus. Harvard, xxxi, x+246 pp. (5 blank), cxii pls., 319 text-figg. (Nov.) [II, A, iii : B, i, c, 2, 5 ; ii, c ; iii, a : c, vii : F, vi, c, 5 ; vii, c. III, A, i, ii, iv. IV, c.]
Abstract : in LUDWIG (166).

AIRAGHI, C. (2 & 3) Zool. Rec. 1903. Abstracts : by VINASSA, Geol. Centrbl. iv, p. 729 (1 Mar. 1904) & vi, p. 310 (15 Mar. 1905).

4. ALBERT [HONORÉ CHARLES] (Prince de Monaco). Sur la 5^e campagne scientifique de la Princesse Alice II. C.R. Ac. Sci. cxxxviii, pp. 1398-1400. (June.) [III, A, ii.]

5. ALBERT, F. Los perjuicios que causan las estrellas de mar a la pesquería. Act. Soc. Chili, xii, pp. 279-284. (Jan. 1903.) [II, E, ii.]

6. ALBRECHT, E. Ueber die Bedeutung myelinogener Substanzen im Zellleben. Verh. Deutsch. path. Ges. vi, pp. 95-109. [II, F, iii, c.]

7. AMI, H. M. Preliminary lists of the organic remains occurring in the various geological formations comprised in the map of the Ottawa district, including formations in the provinces of Quebec and Ontario, along the Ottawa River. Appendix to Report on the geology and natural resources of the area included in the map of the city of Ottawa and vicinity, by R. W. ELLS. Rep. Geol. Surv. Canada (n. s.), xii, pp. 49G-77G. (1901.) [III, B, iv, h.]

8. —. Lists of fossils obtained from the several formations along the Ottawa River pertaining to the report on sheet No. 121, Quebec and Ontario (Grenville sheet). Appendix to Report on the geology of Argenteuil, Ottawa and part of Pontiac counties, &c., by R. W. ELLS. Rep. Geol. Surv. Canada (n. s.), xii, pp. 139J-143J. (1901.)
[III, B, iv, h.]

9. ANDERSSON, K. A. ... "Brutpflege bei *Antedon hirsuta*" ... [read before] Naturvetenskapliga Studentsällskapet, Upsala. Zool. Anz. xxvii, p. 662. (14 June.)
Preliminary to ANDERSSON (10).

10. —. Brutpflege bei *Antedon hirsuta* Carpenter. Wiss. ergebn. Schwedisch. Südpolar Expedition 1901-1903. Bd. v, Lief. 1, 8 pp., ii pls. [II, B, i, f, 12 ; iii, c : F, iii, f ; iv, f ; vii, f.]
Abstract : in LUDWIG (166).

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

The Symbols in [] refer to the divisions of the Subject-Index, II, III, IV. Those referring to the Systematic portion [IV, A-K] are inserted only when some question of definite importance to the systematist is dealt with in the work. The names of the genera mentioned in any work can generally be gathered from the lists given under Distribution [III, A or B], and the species can then be traced by turning to Section IV. Only where this was not possible have names been inserted after the title.

11. ANDREWS, E. A. Notes on the fauna of Jamaica. Johns Hopkins Univ. Circ. xi, pp. 72-77. (April, 1892.) [II, F, iv. III, A, ii.]
12. [ANON.] A retrospect of palaeontology in the last forty years. Geol. Mag. (n. s.) dec. v, vol. i, pp. 49-56. (Feb.) [II, E, iv.]
- ARIOLA, V. (11) Zool. Rec. 1902. Also appeared as Boll. Mus. Genova, 1901, No. 111, pl. ix. (1901.) Abstract by H. LUDWIG, Zool. Centrbl. x, p. 78 (10 Feb. 1903).
13. —. La merogonia e l'ufficio del centrosoma nella fecondazione merogonica. Atti Soc. Ligustica, xv, pp. 40-50. (Mar.) [II, F, viii.]
14. ARMASCHEWSKY, P. Obshchaya gheologhicheskaya Karta Rossii. List 46-Y Poltava-Khar'kov-Oboyan. (Allgemeine geologische Karte von Russland. Blatt 46. Poltawa-Charkow-Obojan.) Trudui geol. Kom. xv, No. 1, vi+318 pp., 1 map. (1903.) [III, B, iii, b, 1.]
- ARNOLD, R. See HAEHL, H. L. (110).
- BAERTLING, R. See FOLLMANN, O.
15. BARRON, T. On the occurrence of Lower Miocene beds between Cairo and Suez. Geol. Mag. (n. s.), dec. v, vol. i, pp. 603-608. (Dec.) [III, B, ii, d.]
- BARTHEL, P. (14) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 79. (10 Feb. 1903.)
16. BASEDOW, H. Note on Tertiary exposures in the Happy Valley District, with description of a new species of *Septifer*. Tr. R. Soc. S. Austral. xxviii, pp. 248-252, 1 text-fig. [III, B, ii, f.]
17. BATHER, F. A. How sea-urchins are turned into flint. [In illustration of] Labelling of objects in the Geological Department, British Museum of Natural History. Geol. Mag. (n. s.), dec. v, vol. i, pp. 218-219. (May.) [II, D, x: E, i, c.]
18. —. Eocene echinoids from Sokoto. Geol. Mag. (n. s.) dec. v, vol. i, pp. 292-304, pl. xi. (July.) [II, B, i, c, 2, 5. III, B, ii, f. IV, c.]
See also remarks by Author and by R. B. NEWTON, Geogr. J. 1904, pp. 518-522 (Nov. 1904); by A. DE LAPPARENT, C.R. Ac. Sci. cxxxix, p. 1186 (Jan. 1905).
Abstracts: in J. R. Micr. Soc. 1904, p. 535 (Oct.): Bibl. geogr. ann. xiv, item 802 (15 Sept. 1905): by Author, Geol. Centrbl. iv, p. 586 (Oct. 1904). Review: by J. LAMBERT, Rev. paleozool. ix, pp. 47-48 (Jan. 1905).
- See also FOX, H. (84), GRÖNWALL, K. A. (109).
19. BAUMBERGER, E. Fauna der untern Kreide im westschweizerischen Jura. I. Teil. Stratigraphische Einleitung. Abh. Schweiz. Ges. xxx, 60 pp., iii pls. (1903.) [III, B, iii, b, 2.]
20. —. Beiträge zur Kenntniss der Kreidebildungen auf dem Tessenberg und im Jorat (Bernerjura). Mt. Ges. Bern 1903, pp. 6-16, 4 text-figg. [III, B, iii, b, 2.]
21. BEEDE, J. W. & ROGERS, A. F. Coal Measure faunal studies. III—Lower Coal Measures. Kansas quart. xii, pp. 459-473 [= Kansas Univ. Bull. ii, No. 15]. (June.) [III, B, iv, d.]
- BELL, F. J. (17) & (19) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 73 (10 Feb. 1903).
22. —. Description of a new genus of Spatangoids. Ann. Nat. Hist. (7), xiii, pp. 236-237. (March.) [III, A, iii. IV, c, *Eobrissus*.]
Abstract in J. R. Micr. Soc. 1904, p. 311 (June).

- 22A. [BELL, F. J.] The Echinoderma found off the coast of South Africa. Part I. Echinoidea. Marine investigations in S. Africa, vol. iii, pp. 167-175 (5 Oct.). [II, B, iii, b. III, A, iii. IV, c.]
23. BELLINI, R. Notizie sulle formazioni fossilifere neogeniche recenti della regione vulcanica napoletana e malacofauna del Monte Somma. Boll. Soc. Napoli, xvii, pp. 1-16. (20 Jan.) [III, B, ii, b.]
24. BERG, L. Zamyetka o verkhne-myelov'ikh Otlozheniyakh na bereghakh Aral'skagho morya. (Eine Notiz über Obercretaceische Ablagerungen an den Ufern des Aralsees [Vorläufige Mitteilung].) Bull. Soc. Moscou, 1903, Beilage, pp. 8-12. [III, B, iii, b, I.]
Abstract: by A. W. PAVLOW, Geol. Centrbl. iv, pp. 711-712 (1 March 1904).
- BERGH, R. S. See BOVERI, T., BULLER, A. H. R., DELAGE, Y., DRIESCH, H., HERBST, C., LOEB, J., STEINBRUECK, H., STEVENS, N. M., TEICHMANN, E., VIGUIER, C., ZIEGLER, H. E.
25. BERGMANN, W. Bericht ueber die wissenschaftlichen Leistungen in der Naturgeschichte der Echinodermen während des Jahres 1892. Arch. Naturg. lxxiii, pp. 239-282. (Dec.) [II, E, iii.]
26. BERTOLO, P. Ricerche chimiche sopra le uova del riccio di mare (*Strongylocentrotus lividus*). Boll. Acc. Gioen. lxxix, pp. 12-26. [II, B, i, c, 12: c, vii.]
27. BERTRAND, G. Recherches sur l'existence normale de l'arsenic dans l'organisme. Res. Camp. Scient. Monaco, xxiv, 30 pp. (1 Sept. 1903.) [II, c, vii: E, i, b.]
- BLANCKENHORN, M. See FOURTAU, R. (83).
28. BOEHM, J. Ueber die Obertriadische Fauna der Bäreninsel. Svenska Ak. Handl. xxxvii, No. 3, 76 pp., vii pls. (1903 [i.e. 1904].) [III, B, iii, e.]
29. BOHN, G. Influence du milieu extérieur sur l'oeuf. Parthénogénèses expérimentale et naturelle. Rev. gen. Sci. xv, pp. 242-250. (15 Mar.) [II, F, viii.]
30. BOULE, M. Sur de nouveaux fossiles de la côte orientale de Madagascar. Bull. Soc. geol. France (4), iv, pp. 172, 173. (Aug. [recd. in London June, 1905].) [III, B, iii, b, I.]
- BOVERI, T. (23) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, pp. 885-887 (15 Dec. 1903).
31. —. Noch ein Wort ueber Seeigelbastarde. Arch. Entwickmeh. xvii, pp. 521-525. (8 Jan.) [II, F, viii.]
Abstracts: by R. FICK, Zool. Centrbl. xi, p. 818 (30 Dec. 1904); by O. MAAS, Zool. Centrbl. xii, p. 73 (28 Feb. 1905).
32. BRANNER, J. C. The stone reefs of Brazil, their geological and geographical relations, with a chapter on the coral reefs. Bull. Mus. Harvard, xlv, 286 pp., xcix pls. (May.) [II, D, x.]
- BRYCE, T. H. (35) Zool. Rec. 1902. Abstract by R. FICK, Zool. Centrbl. xi, pp. 20-22 (26 Jan. 1904).
- BULLER, A. H. R. (38) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. ix, pp. 671-672 (4 Nov. 1902).
- BURNE, R. H. See ROYAL COLLEGE OF SURGEONS (237).
33. BURNET, A. The Upper Chalk of North Lincolnshire. Geol. Mag. (n. s.), dec. v, vol. i, pp. 172-176. (April.) [III, B, iii, b, I.]
- CAULLERY, M. & SIEDLICKI, M. (28) Zool. Rec. 1903. Abstract by R. FICK, Zool. Centrbl. xi, p. 192 (19 April, 1904).

34. CAYEUX, L. Géologie des environs de Nauplie. Existence du Jurassique supérieur et de l'Infracrétacé en Argolide (Grèce). Bull. Soc. geol. France (4), iv, pp. 87-105, 3 text-figg. [II, D, x. III, B, iii, b, 2.]
35. CHADWICK, H. C. Report on the Crinoidea collected by Professor HERDMAN, at Ceylon, in 1902. Rep. Ceylon Pearl Oyster Fisheries, Part II, Supplem. Report xi, pp. 151-158, i. pl., 4to, London: Royal Society. (Oct.) [II, B, ii, d, 2; c: D, vii. III, A, iii. IV, F.]
36. CHAPMAN, F. On a collection of Upper Palaeozoic and Mesozoic fossils from West Australia and Queensland, in the National Museum, Melbourne. P. Soc. Victoria (n. s.), xvi, pp. 306-335, pls. xxvii-xxx. (March.) [III, B, iv, c.]
- CHECCHIA, G. (30) Zool. Rec. 1903. Abstract: by VINASSA, Geol. Centrbl. iv, p. 347 (1 Dec. 1903).
37. —. Osservazioni sulle Orbitoidi. Riv. ital. pal. xi, pp. 79-81. (15 May, 1905 [i.e. end of June].) [III, B, ii, f.]
- CHUN, C. (42) Zool. Rec. 1902. Abstract: by F. ZSCHOKKE, Zool. Centrbl. x, pp. 663-676 (2 Oct. 1903).
38. CLARK, H. L. The echinoderms of the Woods Hole region. Bull. U.S. Fish Comm. 1902, pp. 545-576, pls. i-xiv. [II, B, ii, c, d, 1: D, ix: E, i, a, b; ii: F, vii, b, c, d. III, A, ii. IV, B, c, D, E.]
39. CLARK, W. B. Systematic paleontology of the Miocene deposits of Maryland. Echinodermata. Maryland geol. Surv. Miocene, pp. 430-433, pls. cxix, cxx. [III, B, ii, d.]
40. CLARKE, J. M. & LUTHER, D.D. Stratigraphic and palaeontologic map of Canandaigua and Naples quadrangles. Bull. N. York Mus. lxiii, pp. 3-76. (June.) [III, B, iv, f.]
41. CLERC, A. Ferments digestifs de quelques Echinodermes. C.R. Soc. Biol. lvi, pp. 798-800. (20 May.) [II, c, iv.]
42. CLERC, M. Étude monographique des fossiles du Dogger de quelques gisements classiques du Jura Neuchâtelois et Vaudois. Abh. Schweiz. pal. Ges. xxxi, 108 pp., iii pls. [III, B, iii, c, 3. IV, c.]
43. COLE, W. *Henricia sanguinolenta* in the Colne River. Essex Natural. xiii, p. 301. (Aug.) [III, A, ii.]
44. COLLET, P. Notices géologiques et paléontologiques pour servir à la géologie de l'arrondissement de Sainte-Ménéhould. Avec la description des fossiles nouveaux par.....A. PERON et J. LAMBERT. Bull. Soc. Reims, xii, pp. 17-87, iii pls. on pp. 83, 85, 87; 20 text-figg. [III, B, iii, b, 1.]
45. *COMBES, P. Structure des radioles d'oursins. Le Cosmos (n. s.) I, pp. 9-12, 7 text-figg. [II, B, i, c, 4.]
46. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers, xxxiii, pp. 35-93. [III, B, ii, d.]
47. —. Les faluns de l'Anjou et de la Touraine dans le Saumurois. Bull. Soc. Angers, xxxiii, pp. 216-223. [III, B, ii, d.]
48. COUTIÈRE, H. Note sur le commensalisme de l'*Arete dorsalis* var. *Pacificus* H. Coutière, d'après les notes de M. L. SEURAT, naturaliste, à Rikitea (îles Gambier). Bull. Mus. Paris, x, pp. 58-60. [II, D, viii, c.]
- CUSHMAN, J. A. See KLEM (142).
49. DAINELLI, G. La fauna eocenica di Bribir in Dalmazia. Parte 1^a. Paleontogr. ital. x, pp. 141-274, pls. xv-xvii. [III, B, ii, f.]

50. [DAINELLI, G.] Contributo allo studio dell' Eocene medio dei dintorni di Ostroviza in Dalmazia. Atti Acc. Lincei (5), xiii, Sem. 2, pp. 277-282. [III, B, ii, f.]
DALL, W. H. See REID, C. (225).
51. DEKHUYZEN, M. C. Ergebnisse von osmotischen Studien, namentlich bei Knochentischen, an der Biologischen Station des Bergenser Museums während eines Aufenthalts vom 23 Juli bis 27 Aug. 1904. [II, c, vii.]
- DELAGE, Y. (64) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. x, pp. 110-112 (24 Feb. 1903).
52. —. Élevage des larves parthénogénétiques d'*Asterias glacialis*. Arch. Zool. exp. (4), ii, pp. 27-42, pl. ii, 12 text-figg. (15 April.) [II, E, i, b: F, v, d; viii.]
Abstracts: J. R. Micr. Soc. 1904, p. 420 (Aug.); LUDWIG (166).
53. —. La parthénogenèse par l'acide carbonique obtenue chez les oeufs après l'émission des globules polaires. Arch. Zool. exp. (4) ii, pp. 43-46. (15 April.) [II, F, viii.]
Abstract in LUDWIG (166).
54. — & HÉROUARD, E. Traité de zoologie concrète. III. Les Échinodermes. 8vo, x+496 pp., liii pls., 565 text-figg. Paris: Schleicher. (1903 [i.e. 30 March, 1904, fide Schleicher frères & Cie. in litt.].)
The classification of the Regular Echinoids, except Palechinida, is by T. MORTENSEN. [II, A, iii: B, i (a-h) I: c, i: D, vii, a: E, i, d; iii: F, ii, a. III, A, i. IV, A-K.]
Review: by J. LAMBERT, Rev. paléozool. viii, pp. 188-190 (July, 1904).
55. DEL CAMPANA, D. Faunula del Giura superiore di Collalto di Solagna (Bassano). Boll. Soc. geol. Ital. xxiii, pp. 239-269, pl. vii. (12 Aug.) [III, B, iii, c, 1.]
56. —. Contributo allo studio del Trias superiore del Montenegro. Atti Acc. Lincei, xiii, Rendiconti, pp. 554-559. (4 Dec.) [III, B, iii, e.]
- DE MEIJERE, J. C. H. (53) Zool. Rec. 1903. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 78 (10 Feb. 1903).
57. —. Die Echinoidea der Siboga-Expedition. Uitkomst. H. M. Siboga.....utgegeven Max Weber, Monogr. xliii. 4to, 252 pp., xxiii pls. Leiden: Brill. (Feb.) [II, A, iii: B, i, c, 5, 6; ii, c; d, 2: D, iii, c: F, vii, c. III, A, iii. IV, c.]
Abstract in LUDWIG (166).
- DENDY, A. See HUTTON, F. W. (129).
58. DENNANT, J. & KITSON, A. E. Catalogue of the described species of fossils (except Bryozoa and Foraminifera) in the Cainozoic fauna of Victoria, South Australia and Tasmania. Rec. Geol. Surv. Victoria, i, pp. 98-147, map. (1903.) [III, B, ii, a.]
- DE REGNY, V. See VINASSA DE REGNY, P. [E.]
59. DESTINEZ, P. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. Ann. Soc. geol. Belgique, xxxi, pp. M 143-M 151. (18 Jan.) [III, B, iv, e.]
60. —. Faune et flore des psammites du Condroz (Famennien). Ann. Soc. geol. Belgique, xxxi, pp. M 247-M 257. (21 July.) [III, B, iv, f.]
61. DE VESCOVI, P. Notizie sulla formazione di un nuovo lago nella provincia di Roma e considerazioni dal punto di vista della fauna lacustre. Boll. Soc. zool. Ital. v, pp. 55-71. (1896.) [III, B, ii, c.]
Abstract: by R. MELI, Boll. Soc. geol. Ital. xxiii, p. lvii (1904).

62. DIBLEY, G. E. The discovery of Marsupites in the Chalk of the Croydon area. *Geol. Mag.* (n. s.), dec. v, vol. i, pp. 525-526. (Oct.) [III, B, iii, b, 1.]
63. DI MAURO, S. Sopra un nuovo infusorio ciliato parassita dello *Strongylocentrotus lividus* e dello *Sphaerechinus granularis* (*Anophrys echini* n. sp.). *Boll. Acc. Gioen.* lxxxi, pp. 13-20, text-figg. (May.) [II, D, viii, c.]
64. DOFLEIN, F. Brachyura. *Wiss. Ergebn. Deutsch. Tiefsee-Exped. Valdivia*, vi. [II, D, viii, b.]
65. DOLLFUS, G. F. Faune malacologique du miocène supérieur de Rennes (étage Redonien, gîte d'Apigné) (Ille-et-Vilaine). *C.R. Ass. Franc.* xxxii, 2^e Part, pp. 656-663. (1903.) [III, B, ii, d.]
66. DOUVILLÉ, H. Notice sur les travaux scientifiques de M. Henri Douvillé. 4to, 110 pp., 165 text-figg. Lille: Bigot frères. (1903.) [II, A, iii: B, i, a, 4; c, 5: D, iii, c. IV, c.]
Abstract by E. HAUG, *Geol. Centrbl.* v, p. 492 (15 Sept. 1904).
67. —. Nummulitique du Sud-Ouest. *Bull. Soc. geol. France* (4), iv, pp. 283-284. (Oct. [recd. in London, Jun. 1905]). [III, B, ii, f.]
68. —. Sur quelques fossiles de Madagascar. *Bull. Soc. geol. France* (4), iv, pp. 207-217, pl. viii. (Aug. [recd. in London, Jun. 1905].) [III, B, iii, b, 2; c, I, 3.]
69. DOUXAMI, H. Feuilles de Chambéry et Albertville. Revision de Nantua et Annecy. *Bull. Carte geol. France*, x, pp. 185-191, 2 text-figg.; pp. 558-562, 2 text-figg. (1898, 1899.) [III, B, ii, d.]
70. DOWLING, D. B. Report on an exploration of Ekwan River, Sutton Mill Lakes and part of the west coast of James Bay. [includes] Appendix I.—Preliminary list of fossils by J. F. WHITEAVES, *Ann. Rep. Geol. Surv. Canada*, xiv, Part F, pp. 1-60, pls. i, ii, text-figg. (Oct.) [III, B, iv, g.]
71. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). *Palæontogr.* I, pp. 229-288, pls. xxviii-xxxii. (March.) [III, B, iv, f.]
- DRIESCH, H. (72) *Zool. Rec.* 1902. Abstract by R. S. BERGH, *Zool. Centrbl.* ix, pp. 772-774 (16 Dec. 1902). (69) *Zool. Rec.* 1903. Abstract by O. MAAS, *Zool. Centrbl.* xii, p. 72 (28 Feb. 1905).
- DUBOIS, A. See SCHARDT, H. (244).
72. DUBOIS, R. Du cuivre normal dans la série animale (Animaux marins et terrestres). *Ann. Soc. Linn. Lyon*, xlvii, pp. 93-97. (1901.) [II, c, vii.]
Abstract: see DUBOIS (99) *Zool. Rec.* 1900.
73. DUBUISSON, H. Dégénérescence des ovules. *C.R. Soc. Biol.* lvii, pp. 554-555. (16 Dec.) [II, F, viii.]
- DUN, W. S. See ETHERIDGE, R. (75).
- DUNGERN, E. v. (75) *Zool. Rec.* 1902. Abstract by M. RADWAŃSKA, *Kosmos Polski.* xxix, pp. 116-120 (Apr. 1904). (71) *Zool. Rec.* 1903. Abstract by R. FICK, *Zool. Centrbl.* xi, p. 162 (19 Apr. 1904).
- ELLS, R. W. See AMI, H. M. (7 & 8).
- ENRIQUES, P. (73) *Zool. Rec.* 1903. Abstract by H. LUDWIG, *Zool. Centrbl.* x, p. 149 (10 Mar. 1903).
- ESCH, E. See OPPENHEIM, P. (201), SOLGER, F. (258).
74. ETHERIDGE, R. JUN. Notes on Australian Cretaceous fossils. *Rec. Austral. Mus.* v, pp. 248-252, pls. xxvii, xxviii. (16 Jun.) [III, B, iii, b, 1. IV, F.]

75. [ETHERIDGE, R. JUN.] The occurrence of *Pisocrinurus*, or an allied genus, in the Upper Silurian rocks of the Yass district. Rec. Austral. Mus. v, pp. 287-292, pl. xxxvii. (22 Dec.) [III, B, iv, a, g. IV, F.]
Abstract: by W. S. DUN, Geol. Centrbl. vi, p. 571 (1 June, 1905).
FARQUHAR, H. See HUTTON, F. W. (129).
76. FEARNSIDES, W. G. On the occurrence of a limestone with Upper Gault fossils at Barnwell, near Cambridge. Quart. J. Geol. Soc. lx, pp. 360-363. (15 Aug.) [III, B, iii, b, 2.]
- FICK, R. See BOVERI (31), BRYCE, T. H., CAULLERY, M., DUNGERN, E. VON, FISCHER, M. H., GUENTHER, K., HARTMANN, M., LOEB, J., LOEB (155), SCHUECKING, A., WEDEKIND, W.
77. FIEDLER, O. Ueber Versteinerungen aus den Arlbergschichten bei Bludenz und einige neue Fundorte von Flysch und Aptychenkalken im oberen Grossen Walser-Tal Vorarlbergs. Zeitschr. Deutsch. geol. Ges. lvi, Briefl. Mitt. pp. 8-13. [III, B, iii, e.]
78. FINCKH, A. E. Biology of the reef-forming organisms at Funafuti atoll. Royal Society's Report on Funafuti, pp. 125-150. (Feb.) [II, D, iii, c; iv, b; x.]
- FISCHER, M. H. (83) Zool. Rec. 1903. Abstract by R. FICK, Zool. Centrbl. xi, p. 22. (26 Jan. 1904.)
79. FLEGEL, K. Ueber das Alter der oberen Quader des Heuscheuergebirges. Centrbl. Mineral. 1904, pp. 395-399. [III, B, iii, b, 1.]
- FLIEGEL, F. See JAEKEL, O.
80. FOERSTE, A. F. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4), xviii, pp. 321-342, 1 pl. (Nov.) [III, B, iv, g.]
- FOLLMANN, O. (114) Zool. Rec. 1901. Abstracts by E. KOKEN, N. Jahrb. Min. 1905, i, p. -181- (Feb.); by R. BÄRTLING, Geol. Centrbl. vi, p. 525 (15 May, 1905).
81. FORTIN, R. "Un Echinide provenant du Cénomanien de la vallée de l'Oison... *Peltaster umbrella* Agass." Bull. Soc. Rouen (4), xxxix, p. 126. [III, B, iii, b, 1.]
— See also NIBELLE, M. (197).
82. FOURTAU, R. Contribution à l'étude de la faune crétacique d'Égypte. Bull. Inst. Egypt. (4), iv, pp. 231-349, pls. i-v. [III, B, iii, b, 1.]
83. —. Contribution à l'étude des Échinides vivant dans le Golfe de Suez. Bull. Inst. Egypt. (4), iv, pp. 407-446, 1 pl. (Dec.) [II, D, ix: B, iv. III, A, iii: B, ii, b, c. IV, c.]
Abstracts: by J. LAMBERT, Rev. paleozool. ix, p. 164 (July, 1905); by M. BLANCKENHORN, Geol. Centrbl. vii, p. 48 (Sept. 1905).
84. FOX, H. Supplementary notes on some coast sections in the parish of St. Minver. [containing note on echinoderms by F. A. BATHER.] Tr. geol. Soc. Cornwall, xii, pp. 747-752, 1 pl. (Mar.) [III, B, iv, f.]
- FOX-STRANGWAYS, C. See STRANGWAYS, C. F. (266).
85. FRAIPONT, J. Contribution à l'étude de la faune du Calcaire carbonifère de Belgique. I. Échinodermes du marbre noir de Dinant (Viséen inférieur, Vla). Ann. Soc. geol. Belgique, ii, Mém. pp. 1-12, pl. i-v. [III, B, iv, e. IV, c, D, F.]
Review: by A. TORNQVIST, N. Jahrb. Min. 1905, ii, p. 147 (15 July, 1905).
86. FRITEL, P. H. Echinodermes fossiles. Les Oursins [continued]. Naturaliste, xxiv, pp. 185-188, 10 text-figg. (15 Aug. 1902.) [III, B, i. IV, c.]

87. [FRITEL, P. H.]* [Same continued.] *Naturaliste*, xxvi, pp. 65-67, 14 text-figg. (15 Mar.) [III, B, i. IV, c.]
88. FRÍČ [FRITSCH], A. O lobolitu ze spodního siluru. [A Lobolith from the Lower Silurian.] *Vesmir*, xxxiii, p. 277. 1 text-fig. [II, B, i, f, 5. III, B, iv, h. IV, F.]
Abstract: by PERNER, *Geol. Centrbl.* vi, p. 59. (15 Jan. 1905.)
- FUCHS, T. (89) *Zool. Rec.* 1902. Abstract by J. MEISENHEIMER, *Zool. Centrbl.* ix, p. 758 (16 Dec. 1902).
89. FUEHNER, H. Ueber die Einwirkung verschiedener Alkohole auf die Entwicklung der Seeigel. *Arch. exp. Path.* li, pp. 1-10, 9 text-figg. (1903.) [II, F, viii.]
Abstract: in LUDWIG (205) *Zool. Rec.* 1903.
90. —. Pharmakologische Studien an Seeigeleiern. Der Wirkungsgrad der Alkohole. *Arch. exp. Path.* lii, pp. 69-82, 7 text-figg. [II, F, viii.]
Abstracts: in LUDWIG (166); by E. ABDERHALDEN, *Arch. Rassen*, i, pp. 755-756 (1904).
91. FUERTH, O. v. Vergleichende chemische Physiologie der niederen Tiere. xiv+670 pp., 8vo, Jena: Fischer (1903). [II, c, i: F, viii.]
Abstract: in LUDWIG (205) *Zool. Rec.* 1903.
92. FUGGER, E. Die oberösterreichischen Voralpen zwischen Irrsee und Traunsee. *Jahrb. geol. Reichsanst.* liii, pp. 295-350, pl. xiv, 11 text-figg. (30 Dec. 1903.) [III, B, ii, f; iii, b, 1.]
- GAGEL, C. (97) *Zool. Rec.* 1903. Review by J. LAMBERT, *Rev. paleozool.* ix, p. 163. (July, 1905.) [IV, c, *Chuniola*, *Maretia*, *Spatangus*.]
93. GARBOWSKI, T. O rozwoju partenogenetycznym rozgwiazd. (Ueber Parthenogenetische Entwicklung der Asteriden.) *Bull. Ac. Cracovie*, 1903, pp. 810-830, pl. xviii. (13 Jan.) [II, F, viii.]
Abstract in LUDWIG (166).
94. —. O transplantacyi blastomer u jeżowców. (Ueber Blastomeren-transplantation bei Seeigeln.) (Vorläufige Mitteilung.) *Bull. Ac. Cracovie*, 1904, pp. 169-183. (21 Apr.) [II, F, viii.]
Abstract in LUDWIG (166).
95. GARDINER, J. S. The Maldive and Laccadive Groups, with notes on other coral formations in the Indian Ocean. *Fauna & Geogr. Mald. Laccad. Archip.* i, pp. 12-50, 146-183, 313-346, 376-428, xii pls., 30 text-figg. (1901/03.) [II, D, iii, a; iv, b, c; x.]
96. —. Notes and observations on the distribution of the larvae of marine animals. *Ann. Nat. Hist.* (7), xiv, pp. 403-410. (Dec.) [III, A, i.]
Prel. Report in *Nature*, lxx, p. 262 (14 July).
97. GAUTHIER, V. Illustrations des Echinoides fossiles des terrains jurassiques de la Tunisie, recueillis... par G. Le Mesle. *Explor. Scient. Tunisie. Paleont. et Geol. Fasc.* iii. pt. xxxii [with explanation, no other text]. (1895 i.e. Nov. 1904.)
Retarded publication of the plate belonging to GAUTHIER (98) *Zool. Rec.* 1897, where the species are indexed.
98. GEMMILL, J. F. *Ichthyonema grayi* (Gemmill and v. Linstow). *Tr. Soc. Glasgow* (n.s.), vi, pp. 299-301. (Dec. 1903.) [II, D, viii, c.]
99. — & LINSTOW, O. von. *Ichthyonema grayi* Gemmill u. v. Linstow. *Arch. Naturg.* lxvii, i, pp. 113-118, pl. viii. (1902.) [II, D, viii, c.]

100. GIARD, A. Sur la parthénogenèse artificielle par dessèchement physique. C.R. Soc. Biol. lvi, pp. 594-596. (22 Apr.) [II, F, viii.]
Abstract in LUDWIG (166).
101. GLANGEAUD, P. Le Portlandien du bassin de l'Aquitaine. Bull. Carte geol. France, x, pp. 25-61, 1 map, 9 text-figg. (1898.)
[III, B, iii, c, 1.]
102. GOURDON, M. Note sur les Échinides Pyrénéens espagnols de la collection Maurice Gourdon, offerte au Muséum de Nantes. Bull. Soc. Ouest France (2), iv, pp. 215-225. (31 Dec.)
[II, E, i, c. III, B, ii, f; iii, b, 1.]
- GRABAU, A. W. (109) Zool. Rec. 1903. Abstract by Author, Geol. Centrbl. iv, p. 537 (Oct. 1904).
- 102A. —. Stratigraphy of the Traverse Group of Michigan. Rep. State Geologist Michigan, 1901, pp. 161-210. (1902.) [III, B, iv, f.]
- GRAVE, C. (105) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 837 (30 Dec. 1902).
- GRAVIER, C. See PERRIER [J. O.] E. (211).
103. GREENE, G. K. Contribution to Indiana Palaeontology. Part xvii, pp. 168-175, pls. xlix-li. (9 May.) [III, B, iv. IV, F.]
Descriptions of spp. of *Batocrinus* by R. R. ROWLEY.
104. —. Ditto. Part xviii, pp. 176-184, pls. lii-liv. (22 June.)
[III, B, iv, f. IV, F.]
Descriptions of spp. of *Echinoderma* by R. R. ROWLEY.
105. —. Ditto. Part xix, pp. 185-197, pls. lv-lviii. (20 July.)
[II, B, ii, d, 2; e. III, B, iv, e, f. IV, F, H.]
Descriptions of spp. of *Crinoidea* and *Blastoidea*, and a review of HAMBACH'S "Revision of the Blastoidea," by R. R. ROWLEY.
- GRIEG, J. A. (113) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 73 (10 Feb. 1903).
106. —. Echinodermen von dem norwegischen Fischereidampfer "Michael Sars" in den Jahren 1900-1903 gesammelt. I. Ophiuroidea. Bergens Mus. Aarbog, 1903, No. 13, 45 pp., 4 text-figg. (March.) [II, B, ii, b, c: F, vii, e. III, A, ii. IV, C, D, E.]
107. —. Echinodermen von... "Michael Sars"... II. Crinoidea. Bergens Mus. Aarbog, 1904, No. 5, pp. 1-39, 3 text-figg. (Oct. ?)
[II, B, i, f, 5: F, v, f. III, A, i, ii. IV, F.]
108. GRÖNWALL, K. A. Geschiebestudien, ein Beitrag zur Kenntnis der ältesten baltischen Tertiärlagerungen. Jahrb. geol. Landesanst. Berlin, xxiv, pp. 420-439, 5 text-figg. M. O. 60.
[II, D, x. III, B, ii, f; iii, b, 1.]
109. —. Forsteningsførende Blokke fra Langeland, Sydfyn og Aerø samt Bemaerkninger om de aeldre Tertiaerdannelser i det baltiske Omraade. Résumé. Blocs fossilifères de l'île de Langeland, du sud de la Fionie et de l'île d'Aerø et remarques sur les dépôts tertiaires anciens du territoire baltique, pp. 55-62. Danmarks geol. Unders. II R, No. 15, viii + 64 pp., 6 text-figg. 1 Kr. 75 Øre. (Dec.)
[II, D, x. III, B, ii, f.]
Specimens exhibited by F. A. BATHER, Abstr. P. Geol. Soc. London, Feb. 1905, p. 56.
- GUENTHER, K. (121) Zool. Rec. 1903. Abstracts: by R. FICK, Zool. Centrbl. xi, pp. 22-24 (26 Jan. 1904); in J. R. Micr. Soc. 1905, p. 166 (April).
110. HAEHL, H. L. & ARNOLD, R. The Miocene diabase of the Santa Cruz mountains in San Mateo County, California. P. Amer. Phil. Soc. xliii, pp. 15-53, 25 text-figg. [III, B, ii, c.]

111. HALL, T. S. Notes on some Victorian echinoids. *Victorian Natural.* xxi, pp. 70-73. (Sept.) [III, A, iv. IV, c.]
- 111A. HALLER, B. Lehrbuch der vergleichenden Anatomie. Lief. 1, vi, 424 pp., 412 text-figg. Jena: Fischer. (1902.)
[II, A, iii: B, i, a, 1; c, 5: E, i, d: F, v, a. IV, A.]
Echinodermen, pp. 109-153.
112. HAMANN, O. Echinodermen (Stachelhäuter). iv. Klasse. Echinoidea, Seeigel (Schluss). v. Klasse. Crinoidea, Seelilien. Bronn's Klassen und Ordnungen des Thierreichs, ii, Abth. 3, Lief. 65, 66, pp. 1367-1430. (Apr.) [II, B, i, f, 1: E, iii, iv. IV, c, F.]
Section G. Systematik, pp. 1367-1413 by M. MEISSNER.
- HAMBACH, G. (126) *Zool. Rec.* 1903. Reviews: by J. LAMBERT, *Rev. paleozool.* ix, pp. 91-92 (Apr. 1905); by R. R. ROWLEY in GREENE (105). Abstract: in *J. R. Micr. Soc.* 1905, p. 58 (Feb.).
113. HARGITT, C. W. Some unsolved problems of organic adaptation. *Science* (n. s.), xix, pp. 132-145. (22 Jan.) [II, c, v.]
HARTMANN, M. (122) *Zool. Rec.* 1902. Abstract by R. FICK, *Zool. Centrbl.* x, pp. 290-291 (5 May, 1903).
114. HARTOG, M. Some problems of reproduction.-II. *Quart. J. Micr. Sci.* (n. s.), xlvii, pp. 583-608. [II, F, iv, a.]
HAUG, E. See DOUVILLÉ, H. (66).
115. HENNIG, A. Finnes en lucka emellan senon och danien i Danmark? [Is there a gap between Senonian and Danian in Denmark?] *Geol. Foren. Stockholm Forh.* xxvi, pp. 29-66.
[II, D, iii, f. III, B, iii, b, 1.]
Abstract: by J. LAMBERT, *Rev. paleozool.* viii, p. 192 (July, 1904).
— See also TÖRNEBOHM, A. E. (267).
116. HENRI, V. & LALOU, S. Régulation osmotique des liquides internes chez les échinodermes. *J. Physiol. Path.* vi, pp. 9-24. [II, c, ii.]
HERBST, C. [A.] (123) *Zool. Rec.* 1902. Abstract by R. S. BERGH, *Zool. Centrbl.* x, pp. 112-115 (24 Feb. 1903).
117. —. Ueber die zur Entwicklung der Seeigellarven nothwendigen anorganischen Stoffe, ihre Rolle und ihre Vertretbarkeit. III. Theil. Die Rolle der nothwendigen anorganischen Stoffe. *Arch. Entwick.-mech.* xvii, pp. 306-520, pls. xiv-xvii. (8 Jan.) [II, F, viii.]
Abstract in LUDWIG (166).
118. —. Vorläufige Uebersicht ueber die Rolle der zur Entwicklung der Seeigellarven notwendigen anorganischen Stoffe. *Verh. Ver. Heidelb.* (n. s.), vii, pp. 367-394. (Feb.)
Condensed from HERBST (117).
119. —. Ueber die künstliche Hervorrufung von Dottermembranen an unbefruchteten Seeigeleiern. Zweite Mittheilung. Die Hervorrufung von Dottermembranen durch Silberspuren. *Mt. Stat. Neapel*, xvi, pp. 445-457. (2 Dec.) [II, F, viii.]
Abstracts: *J. R. Micr. Soc.* 1905, p. 318 (June); LUDWIG (166).
HERDMAN, JANE B. See HERDMAN, W. A. (120).
120. HERDMAN, W. A. & JANE B. Report on the Echinoderma collected by Professor Herdman, at Ceylon, in 1902. With notes and additions by F. J. BELL. Report Ceylon Pearl Oyster Fisheries, Part II, Supplementary Report x, pp. 137-150, 2 text-figg. 4to, London: Royal Society. (Oct.) [II, B, i, c, 5; ii, b, c: D, ii, c; iii, c; vii, e. III, A, iii. IV, D.]

- [HERDMAN, W. A.] See also CHADWICK, H. C. (35).
- HÉROUARD, E. (126 & 127) Zool. Rec. 1902. Abstracts by H. LUDWIG, Zool. Centrbl. x, p. 74 & p. 79. (10 Feb. 1903.)
121. —. Théorie de la *Pentastomaea*. Bull. Soc. zool. France, xxix, pp. 70–81. (10 May.) [II, A, ii.]
Abstracts: J. R. Micr. Soc. 1904, p. 534 (Oct.); LUDWIG (166).
122. —. Nouveau procédé pour l'élevage des larves et des petits animaux. *Chlorella vulgaris* en culture pure. Bull. Soc. zool. France, xxix, pp. 110–114. (15 June.) [II, E, i, b: F, v, d.]
— See also DELAGE, Y. (54).
- HILL, W. See JUKES-BROWNE, A. J. (137).
123. HIND, W. Life-zones in the British Carboniferous rocks. Rep. Brit. Ass. 1903, pp. 185–192. (Aug.) [III, B, iv, e.]
124. HINDE, G. J. Report on the materials from the borings at the Funafuti atoll. Royal Society's Report on Funafuti, pp. 186–361. (Feb.) [III, B, ii, b.]
125. —. On the zone of *Marsupites* in the Chalk at Beddington, near Croydon, Surrey. Geol. Mag. (n. s.) dec. v, vol. i, pp. 482–487. (Oct.) [III, B, iii, b, 1.]
126. HOLM, G. Kinnekulles berggrund. Sveriges geol. Unders. Afh. (Ser. C.) No. 172, pp. 1–76, pls. i & ii, text-figg. (1901.) Price of complete memoir 5 kr. [II, D, x. III, B, iv, h.]
127. HOLMES, W. M. List of fossils collected. P. Croydon Club, 1903–04, pp. 45–46. [III, B, iii, b, 1.]
- HORNE, J. See PEACH, B. N. (209).
128. HUNTER, S. J. On the morphology of artificial parthenogenesis in the sea-urchin, *Arbacia*. Science (n. s.), xix, pp. 213–214. (5 Feb.) [II, F, viii.]
129. +HUTTON, F. W. Index Faunae Novae Zealandiae. 8vo, viii + 372 pp. London: Dulau, 12s. 6d. [III, A, iv.]
Echinoderma on pp. 286–292. Holothurian list furnished by A. DENDY, Echinoids and Asteroids revised by H. FARQUHAR (see Preface).
130. HYDE, IDA H. Differences in electrical potential in developing eggs. Amer. J. Physiol. xii, pp. 241–275. (1 Nov.) [II, F, iv.]
131. JACKSON, H. C. The action of potassium cyanide upon the unfertilised egg. Science (n. s.), xix, pp. 105–106. (15 Jan.) [II, F, viii.]
- JAEKEL, O. (154) Zool. Rec. 1903. Abstract by FLIEGEL, Geol. Centrbl. vi, p. 59 (15 Jan. 1905).
132. —. "Ueber sogenannte Lobolithen." Zeitschr. Deutsch. geol. Ges. lvi, pp. 59–63, Protok. [II, B, i, f, 5.]
133. —. Ueber einen Pentacriniden der deutschen Kreide. SB. Ges. naturf. Berlin, 1904, pp. 191–196, i pl. [II, B, i, f, 5. III, B, iii, b, 1. IV, F.]
Abstract: by J. LAMBERT, Rev. palaeozool. ix, p. 161 (July, 1905).
134. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. Jahrb. geol. Reichsanst. liv, pp. 75–90. (15 Sept.) [III, B, iii, b, 1.]
135. —. Vorläufiger Bericht ueber die Klippenfazies im böhmischen Cenoman. Verh. geol. Reichsanst. 1904, pp. 297–303. (30 Sept.) [III, B, iii, b, 1.]

136. JANSSENS, F. A. Production artificielle de larves géantes et monstrueuses dans l'*Arbacia*. Cellule, xxi, pp. 247-294, pls. i-viii. [II, F, iii; viii.]
 Prelim. Notice (156) Zool. Rec. 1903. Abstract in LUDWIG (166).
137. JUKES-BROWNE, A. J. The Upper Chalk of England. With contributions by W. HILL. Mem. Geol. Surv. U. K. Cretaceous Rocks of Britain, vol. iii, x+566 pp., i pl., text-figg. 10s. (Mar.) [III, B, iii, b, 1. IV, c.]
 Review: Geol. Mag. (n. s.) dec. v, vol. i, pp. 277-280 (Jun. 1904).
138. KARAKASH, N. (KARAKASCH, N.). Gheologhicheskiya nablyudeniya po dolinam ryek Urukha, Ardon, Malki, Kichmalki i v okrestnostyakh Kislovodsk. Observations géologiques dans les vallées des fleuves Ouroutch, Ardon, Malka, Kitchmalka et dans les environs de Kislowodsk sur le versant septentrional du Caucase. Trudui St. Peterb. Obshch. Sect. Geol. xxiv, pp. 1-28, i pl. (1896.) [III, B, iii, b, 1.]
 Abstract: by Author in Russian and German, in Annuaire geol. min. Russie, iii, pp. 164-171. (1899.)
139. KELLOGG, V. L. Restorative regeneration in nature of the starfish *Linckia diplax* (Müller & Troschel). J. exp. Zool. i, pp. 353-356, 6 text-figg. [II, D, vii, d.]
 Abstracts: in LUDWIG (166); in J. R. Micr. Soc. 1905, p. 598 (Oct.).
140. KIAER, H. Dyrelivet [Animal life] i Drøbaksund. Nyt. Mag. Naturv. xlii, pp. 61-89, pls. i, ii, 4 text-figg. (Feb.) [II, D, iii, a; viii, b: F, vii, d. III, A, ii.]
 KILIAN, W. & LEENHARDT, F. (159) Zool. Rec. 1897. Also reprinted in Ann. Univ. Grenoble, viii, pp. 209-222 (1897).
 —. See also SAVIN, L.
 KITSON, A. E. See DENNANT, J. (58).
141. KITTL, E. Geologie der Umgebung von Sarajevo. Jahrb. geol. Reichsanst. liii, pp. 516-748, pls. xxi-xxiii, 47 text-figg., map. (10 Aug.) [III, B, iii, e; iv, e. IV, c, F.]
142. KLEM, MARY J. A revision of the Palaeozoic Palaeëchinoidea, with a synopsis of all known species. Tr. Ac. St. Louis, xiv, pp. 1-98, pls. i-v. (5 May.) [II, B, ii, a: E, iii: F, vii, c. IV, c.]
 Reviews: by J. LAMBERT, Rev. paleozool. April, 1905, p. 93; by J. A. CUSHMAN, Amer. Natural. xxxix, pp. 754-756 (Oct. 1905).
 Abstracts: in J. R. Micr. Soc. 1905, p. 59 (Feb.); by R. RUEDEMANN, Geol. Centrbl. vi, p. 571 (1 June, 1905).
- KOEHLER, R. (155) Zool. Rec. 1902. Abstract: by H. LUDWIG, Zool. Centrbl. x, p. 78 (27 Jan. 1903).
143. —. Ophiures de l'expédition du Siboga. Ie. partie: Ophiures de mer profonde. Monogr. XLVa. Uitkomst. H. M. Siboga... uitgegeven Max Weber. 4to, 167 pp., xxxvi pls. Leiden: Brill. (Feb.) [II, B, i, e, 12; ii, c, d, 1, e: D, viii, e. III, A, iii. IV, E.]
 Abstract in LUDWIG (166).
144. —. Ophiures nouvelles ou peu connues. Mem. Soc. zool. France, xvii, pp. 54-119, 98 text-figg. [II, B, ii, c. III, A, iii. IV, E.]
 KOKEN, E. See FOLLMANN, O.
145. KOSTANECKI, K. Étude cytologique de la parthénogénèse artificielle des oeufs de *Mactra* sous l'influence de K Cl. (also entitled "Zmiany w jajku, etc." and "Ueber die Veränderungen, etc.") Bull. Ac. Cracovie, 1904, pp. 70-91. (7 March.) [II, F, viii.]

146. KRAEPELIN, K. Das Naturhistorische Museum. Hamburg in naturw. u. medizinisch. Beziehung, pp. 124-149, 9 text-figg. Hamburg (1901). [II, E, i, c.]
- KRAHELSKA, M. See LOEB, J.
- LALOU, S. See HENRI, V. (116).
- LAMBERT, J. (176) Zool. Rec. 1903. Abstract by author, Bull. Soc. Reims xiii, procès-verb. pp. iv-vi (10 Nov. 1904).
147. —. Sur quelques petits Hémiaster de la Craie blanche. Bull. Soc. Yonne, lvii, pp. 21-31. (March.) [III, B, iii, b, 1. IV, c.]
Abstract by author, Rev. paleozool. viii, pp. 191-192 (July, 1904).
148. —. Note sur l'Infralias de la Vendée et des Deux-Sèvres. IV. Échinides. Bull. Soc. geol. France (4), iii, pp. 538-545, pl. xviii. (March.) [III, B, iii, d. IV, c.]
Abstracts: by author, Rev. paleozool. viii, p. 191 (July, 1904); by A. TORNQUIST, N. Jahrb. Min. 1905, ii, p. 147 (15 July, 1905).
— . See also BATHER (18), COLLET (44), DELAGE (54), FOURTAU (83), GAGEL, C., HAMBACH, G., HENNIG (115), JAEKEL (133), KLEM (142), LEUTHARDT (152), LISSAJOUS (153), LORIOL (162), NEWTON (196), SCHUCHERT (249), SCHUETZE (251), SEGUIN, C., TORNQUIST (268), VINASSA DE REGNY, P., WOLLEMAN (290), WOODS (293).
149. LANG, A. Sul significato biologico della bellezza di una parte della fauna marina. Act. Soc. Helvet. lxxxvi, pp. 102-117. [II, B, i, a, 2.]
Abstracts: in Rev. Scient. (4), xx, pp. 760, 761 (12 Dec. 1903): Arch. Sci. Nat. (4) xvi, pp. 594-596 (15 Nov. 1903).
150. LANGENHAN, O. Der mittlere und obere Muschelkalk des Seebergs mit ihren Versteinerungen. Naturw. u. Geschichtliches vom Seeberg, pp. 52-54. Gotha: Thienemann. (1901.) [III, B, iii, e.]
151. LANZI, M. Diatomee contenute nel canale alimentare di Oloturie del Mediterraneo. Atti Acc. Pont. Lincei, lvii, pp. 172-179. [II, D, iv, b.]
- LAPPARENT, A. DE. See BATHER, F. A. (18).
- LEENHARDT, F. See KILIAN, W.
152. LEUTHARDT, F. Die Crinoidenbänke im Dogger der Umgebung von Liestal. Ber. naturf. Ges. Basel, 1902/03, pp. 89-115, pls. ii, iii, 2 text-figg. [II, D, x. III, B, iii, c, 3. IV, F.]
Abstracts: by O. WILCKENS, N. Jahrb. Min. 1905, i, p. -298- (April); by J. LAMBERT, Rev. paleozool. ix, p. 161 (July, 1905).
- LINSTOW, O. VON. See GEMMILL, J. F. (99).
153. LISSAJOUS, M. Échinides jurassiques des environs de Mâcon. Bull. Soc. hist. nat. Macon, ii, pp. 159-184, pl. ii. (Aug.) [II, B, ii, e. III, B, iii, c, 1, 2, 3; d.]
A continuation of LISSAJOUS (189), Zool. Rec. 1903.
Review: by J. LAMBERT, Rev. paleozool. ix, pp. 43-45 (Jan. 1905).
154. LO BIANCO, S. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. (Beiträge zur Kenntnis des Meeres und seiner Bewohner, Bd. I.) 8vo, viii + 92 pp., xlii pls., 1 map. Jena: Fischer, M. 20. [III, A, ii.]
- LOEB, J. (170) Zool. Rec. 1902. Abstract: by R. S. BERGH, Zool. Centrbl. ix, p. 753 (16 Dec. 1902).—(172) Zool. Rec. 1902. Abstracts: by R. FICK, Zool. Centrbl. x, p. 379 (5 May, 1903); by MARYA KRAHELSKA, Kosmos polski, xxix, pp. 110-116 (Apr. 1904).—(192) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, p. 885 (15 Dec. 1903).—(194) Zool. Rec. 1903. Abstract by R. FICK, Zool. Centrbl. xi, pp. 784-785 (6 Dec. 1904).

155. [LOEB, J.] Further experiments on the fertilization of the egg of the sea-urchin with sperm of various species of starfish and a holothurian. Publ. Univ. California, Physiol. i, pp. 83-85. (10 Feb.) [II, F, viii.]
Abstracts : by R. FICK, Zool. Centrbl. xi, p. 785 (6 Dec. 1904); in LUDWIG (166).
156. —. Ueber Befruchtung, künstliche Parthenogenese und Cytolyse des Seeigeleis. Arch. ges. Physiol. ciii, pp. 257-265. (23 June.)
Abstract in LUDWIG (166). [II, F, viii.]
157. —. Ueber die Natur der Loesungen, in welchen sich die Seeigeleier zu entwickeln vermögen. T. c. pp. 503-509. (9 July.) [II, F, viii.]
Abstract in LUDWIG (166).
158. —. Weitere Versuche ueber heterogene Hybridisation bei Echinodermen. Arch. ges. Physiol. civ, pp. 325-350, 2 text-figg. (9 Sept.)
Abstract in LUDWIG (166). [II, F, viii.]
159. —. Further experiments on heterogeneous hybridization in Echinoderms. Publ. Univ. California, Physiol. ii, pp. 5-30. (9 Dec.) [II, F, viii.]
A translation by J. B. MACCALLUM of LOEB (158).
— See also ABRIC, P. (1).
160. LOISEL, G. Revue annuelle d'Embryologie. 2^{me} partie : Recherches sur l'oeuf, technique embryologique. Rev. gen. Sci. xv, pp. 144-153. (15 Feb.) [II, F, viii.]
- ŁOMNICKI, J. (174) Zool. Rec. 1902. Abstract by L. SZAJNOCHA, Geol. Centrbl. iv, p. 405 (15 Dec. 1903).
161. LOOMIS, F. B. The dwarf fauna of the pyrite layer at the horizon of the Tully limestone in Western New York. Bull. N. York State Mus. lxix, pp. 892-920 and 1240-1248, pls. i-v. (Nov. 1903.) [III, B, iv, f.]
162. LORIOL, P. DE. Notes pour servir a l'étude des Echinodermes. (2e. sér.), Fascicule II, 4to, 68 pp., iv pls. (= pp. 51-116, pls. iv-vii of series). Bâle & Geneve : Georg & Co. (Feb.) [II, B, ii, c : F, vii, c. III, A, ii : B, ii, c, d ; iii, b, I, 2. IV, c, D, E, F.]
Abstract : by J. LAMBERT in Rev. paleozool. viii, pp. 127, 128 (April, 1904).
- LORY, P. (202) Zool. Rec. 1903. Also published Ann. Univ. Grenoble, xiii, pp. 603-615, ii pls. (1901 ?)
163. —. Sur le faciès à Entroques dans le Lias des Alpes suisses et françaises. C.R. Soc. Helvet. 1902, p. 94, reprinted in Arch. Sci. Nat. (4), xiv, p. 468 (15 Nov. 1902), also Eclog. geol. Helvet. vii, p. 334 (Jan. 1903). [II, D, x.]
- & SAYN, G. (197) Zool. Rec. 1897. Also reprinted in Ann. Univ. Grenoble, viii, pp. 139-166, i pl. (1896).
164. LUDWIG, H. Brutpflege bei Echinodermen. Zool. Jahrb. Suppl. vii (Weismann Festschr.), pp. 683-699. [II, B, iii, c : E, iv. III, A, i.]
165. —. Notiz ueber Brutpflege bei Echinodermen. Zool. Anz. xxvii, p. 423. (22 March.) [II, B, iii, c.]
Abstract in J. R. Micr. Soc. 1904, p. 420 (Aug.).
166. —. Echinoderma. Zool. Jahresber. for 1904. (Aug. 1905.) [II, E, iii.]
Gives Literature for 1904, and Abstracts of: AGASSIZ (3), ANDERSSON (10), DELAGE (52, 53), DE MEJERE (57), FUEHNER (90), GARBOWSKI (93, 94), GIARD (100), HERBST (117, 119), HEROUARD (121), JANSSENS (136), KELLOGG (139), KOEHLER (143), LOEB (155-159), LYON (169, 171), MACBRIDE (172), MEISSNER (186), MORTENSEN (195), ÖSTERGREN (202, 204), PETRUNKEWITSCH

(217), POLARA (220), SCHMIDT (246), SMIROTH (256), SPAULDING (263), ZIEGLER (298).

[LUDWIG, H.] See also :—ACKERMANN, A., ARIOLA, V., BARTHEL, P., BELL, F. J., DE MEIJERE, J. C. H., ENRIQUES, P., FUEHNER, H., FUERTH, O. VON, GRAVE, C., GRIEG, J. A., HÉROUARD, E., KOEHLER, R., ÖSTERGREN, H., PERRIER, R., RANKIN, W. M., RUSSO, A., THEEL, H.

167. *LUKAS, F. Psychologie der niedersten Thiere. Eine Untersuchung über die ersten Spuren psychischen Lebens im Tierreiche. 276 pp., 34 text-figg. Wien & Leipzig. [II, c, vi.]
Abstract by P. MAYER, Zool. Jahresber. 1904 (Aug. 1905).
168. LUPI, A. Fauna miocenica presso Tagliacozzo. Boll. Soc. geol. Ital. xxiii, pp. xxviii–xxix. (10 May.) [III, B, ii, d.]
LUTHER, D. D. See CLARKE, J. M. (40).
169. LYON, E. P. Rhythms of CO₂ production during cleavage. Science (n. s.), xix, pp. 350–353. (26 Feb.) [II, F, iv, c.]
Abstract in LUDWIG (166).
170. —. A Biological Examination of Distilled Water. Biol. Bull vi, pp. 198–202. (March.) [II, E, i, b.]
171. —. Rhythms of susceptibility and of carbon dioxide production in cleavage. Amer. J. Physiol. xi, pp. 52–58. (1 April.)
Abstract in LUDWIG (166). [II, F, viii.]
MAAS, O. See BOVERI, T. (31), DRIESCH, H.
172. MACBRIDE, E. W. The early stages in the development of *Ophiotrix fragilis*. Amer. Natural. xxxviii, pp. 508–511, 5 text-figg. (Aug.) [II, F, iv.]
Abstract in LUDWIG (166).
- MACCALLUM, J. B. See LOEB, J. (159).
173. M'CLURE, W. F. Starfish and their injuries. Scient. Amer. xc, p. 98, text-figg. (30 Jan.) [II, D, vii, d.]
174. MCINTOSH, D. C. On the Echinodermata of the Firth of Clyde and variation in *Ophiocoma nigra*. Rep. Brit. Ass. 1903, pp. 696–697. (Aug.) [III, A, ii.]
An Abstract, mainly of MCINTOSH (212) Zool. Rec. 1903.
175. MADER, C. Recherches sur les propriétés hypnotiques des couleurs d'aniline en général et du bleu de méthylène en particulier. Bull. Soc. zool. France, xxviii, pp. 204–210. (1903.) [II, E, i, a.]
176. MADSEN, V. On Jurassic fossils from East Greenland. Medd. Gronland, xxix, pp. 157–210, pls. vi–x, 1 map. Translated by ETHEL G. SKEAT. [III, B, iii, c, 3.]
177. —. Nils Olof Holst : Kvartär-studier i Danmark och norra Tyskland. Geol. Foren. Stockholm Forh. xxvi, pp. 433–452. En kritisk Anmeldelse. Geol. Foren. Stockholm Forh. xxvi, pp. 529–534.
Criticism of HOLST's paper. [II, B, ii, b.]
178. MAIRE, V. Coupe du Rauracien inférieur prise au Prélôt dans la tranchée de la route de Champlitte à Talmay. Bull. Soc. Grayloise d'Émul. vii, pp. 161–167. [II, D, x. III, B, iii, c, 2.]
179. MALARD, A. E. Des variations mensuelles de la faune et de la flore maritimes de la baie de la Hougue (janvier et février). Bull. Mus. Paris, 1902, pp. 190–197. (1902.) [II, F, iv, e. III, A, ii.]
180. —. Sur un Lamellibranche nouveau, parasite des Synaptès. Bull. Mus. Paris, 1903, pp. 342–346. (1903, ? 1904.) [II, D, viii, b.]

181. MALLADA, L. Explicacion del mapa geológico de España. Tomo v. Sistemas infracretáceo y cretáceo. Mem. Com. geol. Espana, 520 pp. [III, B, iii, b.]
182. MANDOUL, H. Recherches sur les colorations tégumentaires. Ann. Sci. nat. (8), xviii, pp. 225-468. (Oct. 1903.) [III, c, v.]
183. MARIANI, E. Appunti geologici sul secondario della Lombardia occidentale. Atti Mus. Milano, xliii, pp. 113-157. [III, B, iii, d.]
184. MARINE BIOLOGICAL ASSOCIATION, U. K. Plymouth Marine Invertebrate fauna. Being notes of the local distribution of species occurring in the neighbourhood, compiled from the Records of the Laboratory. J. Mar. Biol. Ass. (n.s.), vii, pp. 155-298, i chart. (Dec.) [II, D, iii, a ; viii, c. III, A, ii.]
Echinoderma, pp. 206-211.
185. †MARTENS, E. v. Die Mollusken (Conchylien) und die uebrigen Wirbellosen Thiere in Rumpf's Rariteitskammer. Rumphius Gedenkboek, Kolon. Mus. Haarlem, pp. 109-136. (1902.) [II, E, iii. III, A, iii.]
- MAYER, P. See LUKAS, F. (167).
- MEISENHEIMER, J. See FUCHS, T., ROEMER, F. (229).
186. MEISSNER, M. Asteroideen. Ergeb. Hamburger Magalhaensische Sammelreise, Lief vii, No. 1, 8vo, 28 pp., i pl. Hamburg: Friederichsen. Abstract in LUDWIG (166). [II, B, iii, c. III, A, vi.]
— See also HAMANN, O. (112).
187. MELI, R. Escursione geologica sul littorale di Nettuno. Boll. Soc. geol. Ital. xxiii, pp. xxxvi-xli. [III, B, ii, b.]
— See also DE VESCOVI, P. (61).
188. MENGEL, O. Observations géologiques sur la partie sud-est des Corbières (région de Maury et Estagel). Bull. Soc. geol. France (4), iv, pp. 256-281. (Oct. [recd. in London, June, 1905].) [III, B, iii, d.]
189. MEUNIER, S. Sur des concrétions quartzeuses renfermées dans la craie blanche de Margny (Oise). Bull. Soc. geol. France (4), iv, pp. 218-222. (Aug.) [II, D, x.]
190. MEYER, E. Theoretische Betrachtungen ueber die ersten Anfänge des ambulacralen Wassergefässsystems der Echinodermen und die Abstammung ihrer bilateralen Vorfahren. Zool. Jahrb. Anat. xxi, Heft 2, 40 pp., 5 text-figg. [II, A, ii.]
Abstracts: by Author, C.R. Congr. Zool. vi, p. 367 (1905); J. R. Micr. Soc. 1905, p. 443 (Aug.).
— See also SCHLUETER, C.
191. †MICHAILOVSKIJ, M. Zoologische Ergebnisse der Russischen Expeditionen nach Spitzbergen. Echinodermen. Nachtrag. Annuaire Mus. St. Petersb. viii, pp. 392-394. (Mar.) [III, A, v.]
192. —. Die Echinodermen der zoologischen Ausbeute des Eisbrechers "Jermaks" von Sommer 1901. Annuaire Mus. St. Petersb. ix, pp. 157-188. [II, B, ii, e : D, iii, a : F, vii, b, d, e. III, A, v. IV, B-F.]
- MONACO, PRINCE OF. See ALBERT HONORÉ (4).
193. MONKS, SARAH P. Variability and autotomy of *Phataria*. P. Ac. Philad. lvi, pp. 596-600, pl. xlii. (Oct.) [II, B, ii, b : D, vii, d.]
Abstract in J. R. Micr. Soc. 1905, p. 442 (Aug.).
- MORGAN, T. H. (226) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, p. 887 (15 Dec. 1903).
- MORTENSEN, T. (227) Zool. Rec. 1903. The date (Jan.) refers to author's separate. The volume was published in 1904 (? Dec.).

194. [MORTENSEN, T.] On some Echinothurids from Japan and the Indian Ocean. *Ann. Nat. Hist.* (7), xiv, pp. 81-93, pls. ii-v. (Aug.)
[II, B, i, c, 5. III, A, iii, iv. IV, c.]
195. —. The Danish expedition to Siam 1899-1900. II. Echinoidea (1). *Danske Selsk. Skr.* (7), i, No. 1, 124 pp., vii pls., 1 map. (Sept.)
[II, B, i, c, 5; d, 5; ii, c, e: D, viii, c: F, vii, c. III, A, iii, iv. IV, c.]
Abstracts: *J. R. Micr. Soc.* 1905, p. 189 (April); LUDWIG (166).
— See also DELAGE, Y. (54), PETERSEN, C. G. J. (215).
196. NEWTON, R. B. *Linthia oblonga* (Orbigny) from Sinai. *Geol. Mag.* (n. s.), dec. v, vol. i, pp. 441-445, pl. xv. (Sept.)
[II, B, i, c, 2. III, B, iii, b, 1. IV, c.]
Abstract: by J. LAMBERT, *Rev. paleozool.* ix, p. 48 (Jan. 1905).
— See also BATHER, F. A. (18).
197. NIBELLE, M. *Compte Rendu de l'excursion à Montivilliers et à Saint-Jouin le Dimanche 14 Juin 1903.* *Bull. Soc. Rouen* (4), xxxix, pp. 175-179.
[III, B, iii, b, 1.]
Fossils by R. FORTIN.
198. NOBRE, A. Subsídios para o estudo da fauna marinha do norte de Portugal. *Ann. Sci. nat. Porto*, viii, pp. 37-94. (1903.) [III, A, ii.]
199. —. Subsídios para o estudo da fauna marinha do sul de Portugal. *T. c.* pp. 153-160. (1903.) [III, A, ii.]
200. NORDMANN, V. En klump sammenkittede Molluskskaller fra havbunden ved Laeso. [A cemented mass of mollusc shells from the sea-floor at Laeso.] *Medd. Dansk. Geol. For.* ix, pp. 37-44, 2 text-figg. (1903.) [II, D, x.]
- OPPENHEIM, P. (210) *Zool. Rec.* 1902. Abstract: by A. TORNQUIST, *N. Jahrb. Min.* 1905, ii, pp. 149-151 (15 July, 1905).
201. —. Ueber Tertiärfossilien, wahrscheinlich eozänen Alters, von Kamerun. In E. ESCH, *Geol. v. Kamerun*, pp. 243-285, pls. vi-ix. 8vo, Stuttgart.
[III, B, ii, f.]
- ÖSTERGREN, H. (244) *Zool. Rec.* 1903. Abstract by H. LUDWIG, *Zool. Centrbl.* x, p. 150 (10 March, 1903).
202. —. ...“ueber die arktischen Seesterne”... [read before] *Naturvetenskapliga Studentsällskapet*, Upsala. *Zool. Anz.* xxvii, pp. 614-616. (3 June.)
[III, A, v. IV, D.]
Abstract in LUDWIG (166).
203. —. ...“eine neue *Psolus*-Art, *Ps. valvatus*”... [read before] *Naturvetenskapliga Studentsällskapet*, Upsala. *Zool. Anz.* xxvii, pp. 659-662. (14 June.)
[III, A, ii. IV, B.]
204. —. Ueber die Funktion der Füßchen bei den Schlangensterne. *Biol. Centrbl.* xxiv, pp. 559-565, 2 text-figg. (1 Sept.)
[II, c, vi, vii: D, iv, e; vi.]
Abstracts: *J. R. Micr. Soc.* 1904, p. 656 (Dec. 1904); LUDWIG (166).
205. PACE, S. Note on two species of *Cucumaria* from Plymouth, hitherto confused as *C. montagui* (Fleming): *C. normani*, n. sp., and *C. saxicola*, Brady and Robertson. *J. Mar. Biol. Ass.* (n. s.), vii, pp. 305-309. (Dec.)
[III, A, ii. IV, B.]
Abstract: in *J. R. Micr. Soc.* 1905, p. 189 (April).
- PÁLFY, M. v. See TOULA, F. (269).
206. PARKINSON, [J.] H. Ueber eine neue Culmfauna von Königsberg unweit Giessen und ihre Bedeutung für die Gliederung des rheinischen Culm. *Zeitschr. Deutsch. geol. Ges.* lv, pp. 331-374, pls. xv, xvi. (Feb.)
[III, B, iv, e. IV, c.]
Abstract: by the author, *Geol. Mag.* (n. s.), dec. v, vol. i, pp. 272-276 (June, 1904).

207. PARONA, C. La pesca marittima in Liguria. Atti Soc. Ligustica, ix, pp. 327-393; also in Boll. Mus. Genova, lxvi, 69 pp., & Giorn. ital. Pesca Agric. ii, pp. 261-271, 295-304, 336-341, 360-366. (1898.)
[II, D, ix.]
208. PATRINI, P. Rinvenimento di fossili pliocenici nell' escavazione della galleria di Gattico presso Borgamanero. Rend. Ist. Lombardo (2), xxxvi, pp. 738-750. (1903.)
[III, B, ii, c.]
- PAVLOW, A. W. See BERG, L. (24).
- PELLAT, E. (252) Zool. Rec. 1903. Abstract: by A. TORNQVIST, N. Jahrb. Min. 1905, ii, p. -149- (15 July, 1905).
209. PEACH, B. N. & HORNE, J. The Canonbie Coalfield: its geological structure and relations to the Carboniferous rocks of the north of England and central Scotland. Tr. R. Soc. Edinb. xl, pp. 835-877, pls. i-iv. (1903 [i.e. Feb. 1904].)
[III, B, iv, e.]
- PERNER, [J.]. See FRIČ, A. (88).
210. PERON [P. A.]. "Note faisant connaitre les conditions...du gisement des radioles décrits [par A. VALETTE]." Bull. Soc. geol. France (4), i, pp. 10-11. (June, 1901.)
Same as PERON (238), Zool. Rec. 1901.
— See also COLLET, P. (44).
211. PERRIER, [J. O.] E. & GRAVIER, C. La tachygénèse ou accélération embryogénique, son importance dans les modifications des phénomènes embryogéniques; son rôle dans la transformation des organismes. Ann. Sci. nat. (8), xvi, pp. 133-374, 119 text-figg. (Feb. 1903.)
[II, A, ii.]
Abstract: by P. MAYER, Zool. Jahresber. 1903 (Aug. 1904).
- PERRIER, R. (254) Zool. Rec. 1903. Review by H. LUDWIG, Zool. Centrbl. x, pp. 150-152 (10 March, 1903).
212. —. Holothuries du cap Horn. Bull. Mus. Paris, 1904, pp. 13-17 [not 16 as in author's copy]. (Mar.)
[III, A, vi. IV, B.]
213. —. Nouvelle contribution à l'étude des Holothuries de la Nouvelle-Zélande. Bull. Mus. Paris, 1904, pp. 367-370, 1 text-fig. (Dec.)
[III, A, iv. IV, B.]
214. —. Sur une nouvelle espèce de Chiridota. Bull. Mus. Paris, 1904, pp. 370-371, 1 text-fig. (Dec.)
[III, A, vi. IV, B.]
- PERVINQUIÈRE, L. See VALETTE, A.
215. PETERSEN, C. G. J. & WINGE, H. Affaldsdynger fra Stenalderen i Danmark undersøgte for Nationalmuseet. VII. Bløddyr-Skaller. [Stone Age, Denmark...Mollusc-shells.] (1903.)
[III, B, ii, b.]
216. PETRASCHECK, W. Ueber die jüngsten Schichten der Kreide Sachsens. Abh. Ges. Isis, 1904, pp. 3-10.
[III, B, iii, b.]
217. PETRUNKEWITSCH, A. Künstliche Parthenogenese. Zool. Jahrb. Anat. Suppl. Bd. vi, pp. 77-138, pls. viii-x, 8 text-figg.
[II, F, viii.]
Abstract: for technique, by E. SCHÖEBEL, Zeitschr. wiss. Mikr. xx, pp. 440-441 (1904); in LUDWIG (166).
- See WILSON, E. B. (288).
218. PIERI, J. B. L'ovulase et le développement des oeufs vierges. Rev. gen. Sci. xv, pp. 630-631. (15 July.)
[II, F, viii.]
219. PLATE, L. Beiträge zur Technik des Sammelns, der Konservierung und der Aufstellung biologischer Gruppen mariner Tiere. Verh. Deutsch. zool. Ges. 1903, pp. 143-158. (1903.)
[II, E, i, a.]
- POLARA, G. (260) Zool. Rec. 1903. Abstract: by author, Monit. Zool. ital. xiv, pp. 336-338 (Dec. 1903).

220. [POLARA, G.] Sopra una nuova gonade delle Oloturie. Zool. Anz. xxviii, pp. 33-37, 4 text-figg. (13 Sept.) [II, B, i, b, 12.]
Abstracts: in J. R. Micr. Soc. 1904, p. 656 (Dec.); LUDWIG (166).
POLKINGHORNE, B. C. See WRIGHT, W. (294).
221. RABELLE, —. Note sur la carrière de Craie phosphatée de Séruribemont. Ann. Soc. geol. Nord. xxxii, pp. 128-130. (1903.) [III, B, iii, b, 1.]
222. RADKEVICH, GH. A. (RADKEWITSCH, G.). O faunye myelov'-ikh peskov i peschanikov Podol'skoï ghubernii. (Sur la faune des sables et des grès crétacées du gouvernement de Podoli). Zapiski Kiev. Obshch. xvi, pp. xxviii-xxxvii. (1900.) [III, B, iii, b, 1.]
RADWAŃSKA, M. See DUNGERN, E. VON.
- RANKIN, W. M. (252) Zool. Rec. 1901. Abstract by H. LUDWIG, Zool. Centrbl. x, p. 74 (10 Feb. 1903).
223. RAVN, J. P. J. Bemaerkninger om lagserien i Stevns klint samt om *Cyathidium Holopus* Steenstr. Geol. Foren. Stockholm Forh. xxvi, pp. 347-354. [II, D, iii, f.]
224. REBOUL, P. Catalogue des types paléontologiques contenus dans les collections de Grenoble. Trav. Lab. geol. Grenoble, vii, pp. 127-149. [II, E, i, c.]
REGNY, V. DE. See VINASSA DE REGNY, P. [E.].
225. REID, C. The marine Tertiary fauna of America and Europe. [A review of DALL, W. H. Contrib....Tertiary fauna of Florida.] Geol. Mag. (n.s.), dec. v, vol. i, pp. 136-138. (March.) [III, B, i, i.]
226. RETZIUS, G. Zur Kenntnis der Spormien der Evertebraten. Biol. Untersuch. (n.s.), xi, pp. 1-32, xii pls. [II, F, iii.]
227. RICHARDSON, G. B. Report of a reconnaissance in Trans-pecos Texas. Univ. Texas Min. Surv. Bull. ix. = Bull. Univ. Texas, xxiii, 120 pp., xi pls. (Nov.) [III, B, iii, b, 2; iv, e.]
228. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon. (n. s.), Fasc. xiv, pp. 1-252, pls. i-viii. [II, D, x. III, B, iii, c, 3.]
RICHTMAN, W. O. See TRUE, R. H. (270).
229. ROEMER, F. Die Meeresfauna von Spitzbergen und ihre Beziehungen zu den Meeresstroemungen. Ber. Senckenberg. Ges. 1902, pp. 139-143. (1902.) [III, A, v.]
Abstract by J. MEISENHEIMER, Zool. Centrbl. x, p. 923 (29 Dec. 1903).
- ROGERS, A. F. See BEEDE, J. W. (21).
230. ROLLIER, L. Beweis, dass die Nattheim-Wettinger-Schichten (weiss Jura E = Ober-Kimeridge) auch auf der Basler Tafellandschaft, etc., ursprünglich vorhanden waren. Vierteljahrshr. Ges. Zurich, xlviii, pp. 458-472, 3 text-figg. [III, B, iii, c, 1.]
231. — & TRIBOLET, M. DE. Sur la découverte de l'Oxfordien pyriteux dans le canton de Neuchâtel. Bull. Soc. Neuchâtel, xxvii, pp. 31-38, 1 fig. (1899.)
Essentially the same as (284) Zool. Rec. 1900.
232. ROUSSEL, J. Contribution à l'étude géologique des Pyrénées. Bull. Carte geol. France, xi, pp. 233-257, 10 text-figg. (1900.) [III, B, iii, b, 1.]
233. —. I. Le Primaire de Betchat et de Cabanères. La granulite et l'ophite de Betchat et de Salies-du-Salat. II. Le pli du Raz Mouchet. III. Transgressivité et denudation, les klippen des

- Pyrénées, l'age des couches à Caprines et à Orbitolines de la bande crétacée de Gabachou-Padern. Bull. Carte geol. France, xii, pp. 305-349, 2 maps, 7 text-figg. (1902.) [III, B, iii, b, 1. IV, G.]
234. [ROUSSEL, J.] Tableau stratigraphique des Pyrénées. Bull. Carte geol. France, xv, pp. 1-120, pls. i-iii. (Feb. 1904.) [III, B, i.]
235. ROWE, A. W. The zones of the White Chalk of the English coast. IV.—Yorkshire. The maps and cliff sections by C. D. SHERBORN. The White Chalk of the Yorkshire coast from Speeton to Bridlington. P. Geol. Ass. xviii, pp. 193-296, pls. xvii-xl. (19 Feb.) Index by C. D. SHERBORN, t. c. pp. 375-384. (10 June.) [III, B, iii, b, 1.]
236. ROWLEY, R. R. The Echinodermata of the Missouri Silurian and a new brachiopod. Amer. Geol. xxxiv, pp. 269-282, pl. xvi. (Nov.) [III, B, iv, g. IV, F, G, H.]
- . See GREENE, G. K. (103-105).
237. ROYAL COLLEGE OF SURGEONS. Descriptive and illustrated Catalogue of the physiological series of comparative anatomy contained in the museum of the Royal College of Surgeons of England. The Echinodermata by R. H. BURNE. Second edition. Vol. ii, x+518 pp. London: Taylor & Francis. (1902.) [II, B, i, a, 9.]
- RUEDEMANN, R. See KLEM, MARY J. (142), SPENCER, W. K. (264), WOOD, E. (291).
- RUSSO, A. (269) Zool. Rec. 1901 & (245) Zool. Rec. 1902. Abstracts by H. LUDWIG, Zool. Centrbl. x, pp. 74-77 (10 Feb. 1903).
238. RZEHA, A. Das Liasvorkommen von Freistadt in Mähren. Zeitschr. mähr. Landesmus., iv, pp. 89-152, pl. i, 10 text-figg. [III, B, iii, d. IV, F.]
239. —. Neue Fossilien aus dem Lias von Freistadt in Mähren. Verh. geol. Reichsanst. 1904, pp. 132-133. (Mar.) [III, B, iii, d.]
240. SALTER, MARY. The fossils of Torquay and its neighbourhood, and where to find them. 28 pp. (2 of them as plates), 18 × 12 cm. London: Headley Bros., 1s. 6d. [Dated 1903, pubd. Feb. 1904.] [III, B, iii, b, 1.]
- SAVIN, L. (247) Zool. Rec. 1902. Abstract by W. KILIAN, Geol. Centrbl. iii, p. 736 (July, 1903).
241. SAVORNIN, J. Structure du Djebel Maâdid et du Talemtaga. Bull. Soc. geol. France (4), iv, pp. 137-155, pl. vii. (Aug.) [III, B, ii, d ; iii, b, 1.]
- SAYN, G. See LORY, P.
242. SCHAEFER, H. F. Beiträge zur Kenntnis der Rhät- und Lias-Ablagerungen des Grossen Seebergs bei Gotha. Naturw. u. Geschichtliches vom Seeberg. pp. 19-35. Gotha: Thienemann. (1901.) [III, B, iii, d.]
243. SCHARDT, H. Mélanges géologiques sur le Jura neuchâtelois et les régions limitrophes. Quatrième fascicule. Bull. Soc. Neuchatel, xxxi, pp. 253-324, pls. i-iii, 11 text-figg. (1903 [? = 1904 ; recd. April, 1905].) [II, D, x ; III, B, iii, c, 2, 3.]
244. — & DUBOIS, A. Le Crétacique moyen du synclinal de Val-de-Travers-Rochefort. Bull. Soc. Neuchatel, xxviii, pp. 129-157, 7 text-figg. (1901.) [III, B, iii, b, 1 & 2.]
- SCHLUETER, C. (252) Zool. Rec. 1902. Abstract by E. MEYER, Geol. Centrbl. iv, p. 536 (Oct. 1904).

245. [SCHLUETER, C.] Zu *Caratomus*. Zeitschr. Deutsch. geol. Ges. Iv, Briefl. Mitt. p. 8. (1903 [i.e. 1904].) [iv, c]
246. SCHMIDT, H. Zur Kenntnis der Larvenentwicklung von *Echinus microtuberculatus*. Verh. Ges. Wurzburg (n. s.), xxxvi, pp. 297-336, pls. iv-viii, 4 text-figg. [II, E, i, b : F, iv, c.]
Abstracts : J. R. Micr. Soc. 1904, p. 534 (Oct.); LUDWIG (166).
- SCHOEBEL, E. See PETRUNKEWITSCH, A. (217).
247. [SCHUCHERT, C.] Paleontological collections from Europe. Smithson. Collect. xlv, pp. 448-450, pls. ci, cii. (15 Jun.) [II, E, i, c.]
248. —. A noteworthy crinoid. T. c. p. 450, pl. ciii. (15 June.) [II, E, i, c.]
249. —. On Siluric and Devonian Cystidea and *Camarocrinus*. Smithson. Collect. xlvii, pp. 201-272, pls. xxxiv-xliv, 24 text-figg. (4 Nov.) [II, B, i, f, 5 ; ii, e : E, iv : F, vii, g. III, B, iv, f, g. IV, F, G.]
Contains description of *Echinoencrinites fenestratus* by G. TROOST.
Abstract : by J. LAMBERT, Rev. paleozool. ix, p. 92 (April, 1905).
- SCHUECKING, A. (290) & (291) Zool. Rec. 1903. Abstracts by R. FICK, Zool. Centrbl. xi, pp. 161-162, 163 (19 April, 1904).
250. —. Zur Physiologie der Befruchtung. Centrbl. Physiol. xvii, pp. 625-628. [II, F, iv.]
251. SCHUETZE, E. Die Fauna der schwäbischen Meeresmolasse. I. Teil: Spongien und Echinodermen. Jahresh. Ver. Württemb. 1904, pp. 147-188, pls. ii-v. (June.) Also issued as Mt. Nat. Kab. Stuttgart No. 26, with same pagination (Mar.). [III, B, ii, d. IV, C, D, F.]
Review : by J. LAMBERT, Rev. paleozool. viii, pp. 192, 193 (July, 1904). Abstract by Author, Geol. Centrbl. iv, p. 627 (Nov. 1904).
- SEGUIN, [C.] (277) Zool. Rec. 1901 & (257) Zool. Rec. 1902. Abstracts : by A. TORNQUIST, N. Jahrb. Min. 1905, ii, p. -148- (15 July, 1905). (292) Zool. Rec. 1903. Review : by J. LAMBERT, Rev. paleozool. ix, p. 45 (Jan. 1905).
252. SEMON, R. Einige neue Ambonesische Raritäten. Rumphius Gedenkboek Kolon. Mus. Haarlem, pp. 94-97, 1 text-fig. (1902.) [III, A, iii.]
- SEURAT, L. See COUTIÈRE, H. (48).
- SHERBORN, C. D. See ROWE, A. (235).
253. SHIPLEY, A. E. On the ento-parasites collected by the Skeat Expedition to Lower Siam and the Malay peninsula in the years 1899-1900. P. Zool. Soc. London, 1903, vol. ii, pp. 145-156, pl. xvi. (Oct. 1903.) [II, D, viii, b.]
254. SHORT, A. R. A description of some Rhaetic sections in the Bristol district, with considerations on the mode of deposition of the Rhaetic series. Quart. J. Geol. Soc. lx, pp. 170-193. (14 May.) [III, B, iii, d.]
- SIEDLICKI, M. See CAULLERY, M.
255. SIEMIRADZKI, J. Fauna kopalna warstw Oxfordzkiej i Kimerydzkiej w Polsce. Część II [Fossil fauna of the Oxfordian & Kimmeridgian beds in Poland, Section II.] Ślimaki, Małże, Ramionopławy i Szkarłupnie. Pam. Ak. Krakow, xviii, pp. 93-142. (1892.) [III, B, iii, c, I.]
256. SIMROTH, H. Ueber den Ursprung der Echinodermen. Verh. Deutsch. zool. Ges. xiv, pp. 77-103, 15 text-figg. [II, A, ii.]
Abstract in LUDWIG (166).
- SKEAT, ETHEL G. See MADSEN, V. (176).

257. SMITH, J. List of shells etc. observed on the Ardeer and Irvine Beaches, Ayrshire. Tr. Soc. Glasgow (n. s.), iii, pp. 243-248. (1892.) [III, A, ii.]
258. SOLGER, F. Die Fossilien der Mungokreide in Kamerun und ihre geologische Bedeutung, mit besonderer Berücksichtigung der Ammoniten, in E. ESCH, Beitr. z. Geol. v. Kamerun, pp. 83-242, pls. iii-v, 75 text-figg. 8vo, Stuttgart. (Nov.) [III, B, iii, b, 1.]
259. SOLLMANN, T. The simultaneous action of pilocarpine and atropine on the developing embryos of the sea-urchin and starfish.—A contribution to the study of the antagonistic action of poisons. Amer. J. Physiol. x, pp. 352-361. (1 Feb.) [II, F, viii.]
260. —. Structural changes of ova in anisotonic solutions and saponin. Amer. J. Physiol. xii, pp. 99-115. (1 Sept.) [II, F, viii.]
261. SOVĬNSKIĬ, V. (SOWINSKY, W.). Vvedenie v izuchenie faunui Ponto-Kaspijsko-Aral'skagho morskogho basseina, razsmatryvaemof s tochkī zryeniya samostoyalel'noi zoogeograficheskoi provintzii. (Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante.) Zapiski Kiev. Obshch. xviii, Mém. pp. i-xiii, 1-487, 1-216, pls. i-iv. [III, A, ii.]
262. SPAULDING, E. G. The special physics of segmentation as shown by the synthesis, from the standpoint of universally valid dynamic principles, of all the artificial parthenogenetic methods. Biol. Bull. vi, pp. 97-122. (Feb.) [II, F, viii.]
263. —. The rhythm of immunity and susceptibility of fertilized sea-urchin eggs to ether, to HCl, and to some salts. Biol. Bull. vi, pp. 224-240, 2 text-figg. (April.) [II, F, viii.]
Abstract in LUDWIG (166).
264. SPENCER, W. K. On the structure and affinities of *Palaeodiscus* and *Agelacrinus*. P. R. Soc. London, lxxiv, pp. 31-46, pl. i, 12 text-figg. (19 July.) (II, A, iii : B, i, c, 5 ; g, 5.)
Prelim. Abstract: in Nature, lxx, p. 261 (14 July, 1904).
Abstracts: in J. R. Micr. Soc. 1904, p. 656 (Dec.); by R. RUEDEMANN, Geol. Centrbl. vi, p. 312 (15 Mar. 1905).
265. SPERRY, W. L. Notes on *Metacrinus*. Rep. Michigan Ac. Sci. 1904, pp. 195-199. [II, B, i, f, 12; ii, d, 2. iv, F.]
- SPRINGER, F. (297) Zool. Rec. 1903. The details quoted were taken from a definite statement on the title-page of the author's reprint. It now appears that this statement was a printer's error and that the pages are 219-223, while the date of publication was November 1904.
- STEINBRUECK, H. (267) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. ix, p. 774 (16 Dec. 1902).
- STEVENS, NETTIE M. (270) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. x, p. 416 (19 June, 1903).
266. STRANGWAYS, C. F. The Geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales (Explan. Sheets 54 & 55 new ser.; 95 S.W. and 95 S.E. old. ser.), viii+120 pp., xi pls., text-figg. [III, B, iii, b, c.]
- SZAJNOCHA, L. See ŁOMNICKI, J.
- TEICHMANN, E. (303) Zool. Rec. 1903. Abstract by R. S. BERGH, Zool. Centrbl. x, pp. 888-892 (15 Dec. 1903).
- THEEL, H. (277) Zool. Rec. 1902. Abstract by H. LUDWIG, Zool. Centrbl. ix, p. 838 (30 Dec. 1902).

267. TÖRNEBOHM, A. E. & HENNIG, A. Beskrifning till Blad 1 & 2 omfattande de topografiska kartbladen Landskrona, Lund, Kristianstad, Malmö, Ystad, Simrishamn. Sveriges geol. Unders. (Ser. A1, a), 198 pp., iii pls., 1 map. [III, B, iii, b, 1.]
- TOKUNAGA, S. See YOSHIWARA, S. (295).
268. TORNQUIST, A. Die Beschaffenheit des Apikalfeldes von *Schizaster* und seine geologische Bedeutung. Zeitschr. Deutsch. geol. Ges. lv, pp. 375-392, pl. xva. (1903 [i.e. Feb. 1904].) [II, A, iii : B, i, c, 5 ; ii, e. III, B, ii, a. IV, c.]
Review : by J. LAMBERT, Rev. paleozool. ix, p. 97 (April, 1905).
Abstract : by Author, Geol. Centrbl. vi, p. 428 (15 April, 1905).
— See also FRAIPONT, J. (85), LAMBERT, J. (148), OPPENHEIM, P., PELLAT, E., SEGUIN [C.].
269. TOULA, F. Die sogenannten Grauwacken- oder Liaskalke von Theben-Neudorf (Dévény-Ujfalú). Verh. Ver. Presburg, xxii, pp. 23-30. (1902.) [III, B, iii, e.]
Abstracts by M. v. PÁLFY, Foldtani Kozl. xxxii, p. 417 (Jan. 1903) & Geol. Centrbl. iv, p. 222 (15 Oct. 1903).
- TRIBOLET, M. DE. See ROLLIER, L. (231).
- +TROOST, G. See SCHUCHERT, C. (249).
270. TRUE, R. H. & RICHTMAN, W. O. Artificial sea-waters as tested in aquaria. In Report of work at Woods Hole Laboratory. Science (n. s.), xix, pp. 252-253. (12 Feb.) [II, c, vii.]
271. *TULLBERG, T. Ueber Conservirung von Evertetraten in ausgedehntem Zustand. Stockholm. (1891.) [II, E, i, a.]
Abstract in BERGMANN (25), p. 271.
272. UDDEN, J. A. Geology of Jefferson County. Rep. geol. Surv. Iowa, xii, pp. 355-437, 1 map, 4 text-figg. (1903.) [II, D, x. III, B, iv, e.]
273. —. The geology of the Shafter Silver mine district, Presidio county, Texas. Bull. Univ. Texas Min. Surv. viii, 60 pp., 11 text-figg., 2 folding plates. [III, B, iii, b, 2 ; iv, b.]
274. UEXKUELL, J. von. Studien ueber den Tonus. II. Die Bewegungen der Schlangensterne. Zeitschr. Biol. xvi, pp. 1-37, pls. i, ii. [II, B, i, e, 5 : c, vi, vii : D, iii, e ; iv, e ; vi ; vii, e.]
275. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Anden Udgave. [General account of the geology of Denmark. Ed. 2.] Danmarks geol. Unders. iii. Raekke, No. 2, 360 pp., iii pls., text-figg. Kr. 4.50. [III, B, iii, b, 1.]
- VALETTE, A. (283) Zool. Rec. 1902. Abstract : by L. PERVINQUIÈRE, Geol. Centrbl. iv, p. 123 (15 Sept. 1903).
276. VERNON, H. M. Variation in Animals and Plants. Cr. 8vo, x+416 pp., text-figg. London : Paul, 5s. (Feb. 1903.) [II, F, viii.]
- VETTERS, H. See WALTHER, J. (281).
- VIGUIER, C. (286) & (287) Zool. Rec. 1902. Abstract by R. S. BERGH, Zool. Centrbl. ix, p. 678 (4 Nov. 1902).
277. —. Hybridations anormales. C.R. Ac. Sci. cxxxviii, pp. 1116-1118. (May.) [II, F, viii.]
278. —. Influence du milieu extérieur sur l'œuf. Rev. gen. Sci. xv, pp. 475-476. (30 May.) [II, F, viii.]
279. —. Développements anormaux indépendants du milieu. C.R. Ac. Sci. cxxxviii, pp. 1718-1720. (July.) [II, F vii]

- VINASSA DE REGNY, P. [E.] (315) Zool. Rec. 1903. Review by J. LAMBERT, Rev. paleozool. ix, p. 94 (April, 1905). [IV, c.]
 —. See also AIRAGHI, C., CHECCHIA, G.
280. VOLZ, W. Zur Geologie von Sumatra. Beobachtungen und Studien. Pal. Abh. x, pp. 87–196, pls. i–xii, 3 maps, 45 text-figg. (Feb.) [III, B, iv, d.]
281. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Denk. Ges. Jena, xi, Haeckel Festschrift, pp. 133–214, pl. viii, 21 text-figg. (Mar.) [II, D, vi, e, f. III, B, iii, c, I. IV, F.]
 Abstract: by H. VETTERS, N. Jahrb. Min. 1905, i, pp. 458–462–(July, 1905).
- WEDEKIND, W. (319) Zool. Rec. 1903. Abstract: by R. FICK, Zool. Centrbl. x, pp. 448–450 (19 June, 1903).
282. WELCH, R. Greensand Section at Whitehead. Irish Natural. xiii, p. 49. (Feb.) [III, B, iii, b, 2.]
283. WELSCH, J. Feuille de Niort. Bull. Carte geol. France, xi, pp. 117–121. (1900.) [III, B, iii, c, 2.]
284. WEYSSE, A. W. A synoptic text-book of zoology for colleges and schools. 8vo. New York and London: Macmillan. \$4.00. (Jan.) [II, E, i, d.]
285. WHITEAVES, J. F. *Uintacrinus* and *Hemiaster* in the Vancouver Cretaceous. Amer. J. Sci. (4), xviii, pp. 287–289. (Oct.) [III, B, iii, b, I. IV, c.]
 —. See also DOWLING, D. B. (70).
286. WHITFIELD, R. P. Notice of a remarkable case of reproduction of lost parts shown on a fossil crinoid. Bull. Amer. Mus. xx, pp. 471–472, pls. xi, xii, xiii. (10 Dec.) [II, D, vii, f.]
 Abstract by R. RUEDEMANN, Geol. Centrbl. vii, p. 168 (15 Oct. 1905).
287. WILCKENS, O. Ueber Fossilien der oberen Kreide Sued-Patagoniens. Vorläufige Mittheilung. Centrbl. Mineral. 1904, pp. 597–599. [III, B, iii, b, I.]
 —. See also LEUTHARDT, F. (152).
288. WILSON, E. B. Cytasters and Centrosomes in artificial parthenogenesis. Zool. Anz. xxviii, pp. 8–12. (23 Aug.) [II, F, viii.]
 Abstract: in J. R. Micr. Soc. 1905, p. 167 (April).
- WINGE, H. See PETERSEN, C. G. J. (215).
289. WOLLEMAN, A. Die Fauna des Untersenons von Querum bei Braunschweig. Centrbl. Mineral. 1904, pp. 33–38. (1 Feb.) [III, B, iii, b, I.]
290. —. Alte und neue Aufschlüsse im Flammenmergel, Variansplaener und Turon in der Umgegend von Braunschweig. Jahresb. Ver. Braunschweig, xiv, pp. 1–4. (16 Nov.) [III, B, iii, b, I.]
 Abstract: by J. LAMBERT, Rev. paleozool. ix, p. 46 (Jan. 1905).
291. WOOD, ELVIRA. On new and old Middle Devonian crinoids. Smithsonian Collect. xlvii, pp. 56–84, pls. xv, xvi, 9 text-figg. (6 Aug.) [II, B, ii, e: D, vii, f: F, vii, f. III, B, iv, f. IV, F.]
 Abstract: by R. RUEDEMANN, Geol. Centrbl. vi, p. 312 (15 Mar. 1905).
292. WOODCOCK, H. M. On *Cystobia irregularis* (Minch.) and allied “neogamous” gregarines. (Preliminary note.) Arch. zool. exp. Notes (4), ii, pp. cxxv–cxxviii. (20 June.) [II, D, viii, b.]

293. WOODS, H. The genus *Desorella*. Geol. Mag. (n. s.), dec. v, vol. i, pp. 479–481, pl. xvi, 1 text-fig. (Oct.) [III, B, iii, c, 2. IV, c.]
Review : by J. LAMBERT, Rev. paleozool. ix, p. 45 (Jan. 1905).
294. WRIGHT, W. & POLKINGHORNE, B. C. The discovery of *Marsupites* in the Chalk of the Croydon area. Geol. Mag. (n. s.), dec. v, vol. i, p. 622. (Dec.) [III, B, iii, b, 1.]
295. *YOSHIWARA, S. [now TOKUNAGA]. Okinawa Shotō Ōshima Guntō no Uni-rui. [Echinoidea of Liukiu and Ōshima groups.] Dobuts. Z., Tokyo, xiii, pp. 172–174. (1901.)
YATSU, N. See WILSON, E. B. (288).
296. ZAHÁLKA, Č. Pásmo IX. křídového útvaru v Pojizeří. (Die IX. Zone der Kreideformation im Isengebirge.) SB. Bohmisch. Ges. 1903, Art. xxxii, 157 pp., 1 pl. [III, B, iii, b, 1.]
297. ZELENY, C. Studies in compensatory regulation. Science (n. s.), xix, p. 215. (5 Feb.) [II, D, vii, e.]
ZIEGLER, H. E. (337) Zool. Rec. 1903. Abstract : by R. S. BERGH, Zool. Centrbl. x, p. 443 (19 June, 1903).
298. —. Die ersten Entwicklungsvorgänge des Echinodermeneies, insbesondere die Vorgänge am Zellkörper. Denk. Ges. Jena, xi, Haeckel Festschrift. pp. 539–560, pl. xvi, 4 text-figg. (Mar.)
Abstract in LUDWIG (166). [II, F, iv.]
299. *ZLATARSKĚ, GH. N. Prinos k'm gheologhiyata na Īsk'rskiya prolom ot Sophiya do Roman i na s's'dnit mu pr'deli (Contribution à l'étude géologique du défilé de l'Isker, de Sofia à Roman et des pays limitrophes). Trud. B'lg'har. Druzh. (Trav. soc. Bulgare Sci. nat., Sofia) 1904, No. 2, pp. 12–102, 1 map, viii pls
[III, B, iii, b, 2; d; e.]
Detailed Abstract by Author, Geol. Centrbl. iv, pp. 740–745 (Dec. 1904).
- ZSCHOKKE, F. See CHUN, C.
300. ZUR STRASSEN, O. Ueber die Mechanik der Epithelbildung. Verh. Deutsch. zool. Ges. 1903, pp. 91–112, 6 text-figg. (Oct. 1903.) [II, F, viii.]

II. BIOLOGY.

(A.) EVOLUTION.

- i. **General Principles** :—Vacant.
- ii. **Relations of Echinoderma** :—Morphology explained by descent from a *Dipleuraea* with preoral vesicle and 10 metameric segments, of which the posterior 5 pass forward and are applied to the anterior 5, forming the 'Pentasomaea'; HEROUARD (121).—Descent from a worm-like ancestor, already possessing rudiment of water-vascular system, general criticism of views of Semon (1888), Bütschli ('92), Seeliger ('93), Lang ('94), Bury ('95), Haeckel ('96), MacBride ('96), Bather (1900), and Perrier ('02); MEYER (190).—*Myzostoma asteriae* is of all organisms the nearest to the primitive Echinoderm, detailed comparison; SIMROTH (256).—Origin from pelagic worms, pelmatozoic theory criticised; PERRIER (211) p. 259.
- iii. **Phylogenies of smaller groups** :—Phylogeny of *Echinoderma*, general discussion of theories and acceptance of the Pelmatozoic theory as formulated by Bather; DELAGE (54) p. 431–437.—Primary Echinoderm larva derived from *Anomocystidae*, Hol. from *Amphoridea*, another branch of which leads to *Cyst.* & *Crin.*, from

Agelocystidae comè *Ast.* & *Oph.*, and from *Cystoblastidae* descend *Ech.*; HALLER (111A) p. 112.—*Ech.* derived from *Ast.*, and neither from *Edrioasteroidea*; SPENCER (264).—General relations of groups of *Ech.*; DOUVILLÉ (66) p. 72.—Anterior ambulacrum of Spatangoids, its gradual specialization (p. 217), Evolution of plastron in Spatangoids; AGASSIZ (3).—Origin of *Pourtalesidae*; DE MEIJERE (57) p. 157.—Evolution of apical system in *Schizaster*, this and *Linthia* derived from *Periaster*; TORNQUIST (268).

(B.) MORPHOLOGY.

i. Anatomy:—

a. *ECHINODERMA*.

1. General Accounts:—Mainly recent Echinoderms, with original diagr. *Ast.*, *Oph.*, *Crin.* arm-sections, pedicellariae, otocyst, *Asterias* dissect., *Ech.* section, &c.; HALLER (111A).—Anatomy of Echinoderm type (p. 1–19, pls. i–x) comparative (p. 417–427); DELAGE (54).
2. Symmetries:—Plant-like appearance and geometric regularity of certain Echinoderms due to sedentary life; LANG (149).
3. Homologies of Classes:—Vacant.
4. Skeletal tissue or Stereom:—Crystalline nature; DOUVILLÉ (66) p. 71.
- 5–8. Vacant.
9. Nervous system and Sense-organs:—General account with examples from *Ophiocoma*, *Echinus*, and *Holothuria*; ROY. COLL. SURGEONS (237).
- 10–12. Vacant.

b. *HOLOTHURIOIDEA*.

1. General Account; DELAGE (54), p. 274–303, pls. xxxvi–xl.
- 2–8. Vacant.
9. Nervous System and Sense-organs:—See II, B, i, a, 9.
- 10, 11. Vacant.
12. Genital System:—Cords of germinal cells in *Holothuria* homologous with genital cord of *Ast.* and axial organ of *Crin.*; POLARA (220).

c. *ECHINOIDEA*.

1. General Account; DELAGE (54), p. 160–201, pls. xxvi–xxxv.
2. Symmetries:—Shape of test in *Cidaridae*, orientation of pentagons; AGASSIZ (3) p. 1.—*Hemiaster* not bilaterally symmetrical; BATHER (18) p. 300.—Ditto *Linthia*; NEWTON (196).
3. Homologies:—Vacant.
4. Stereom:—Structure of radioles; COMBES (45).
5. Skeletal Anatomy:—Chief modifications in relation to mode of life; DOUVILLÉ (66) p. 72.—Morphology of Pourtalesid test discussed; DE MEIJERE (57) p. 157–171.—Ditto (p. 121), anal snout Spatangoidea (p. 148), apical system, *Salenidae* (p. 35); AGASSIZ (3).—Ditto, *Schizaster*; TORNQUIST (268).—Ambital plates lengthened in various Spatangoids, cf. *Melonites*; AGASSIZ (3) p. 184.—Interambulacrals, splitting of, *Astropyga* and *Chaetodiudema*; MORTENSEN (195) p. 25.—Plastron of *Pilematechinus* compared with that of *Offaster*, *Abatus*, *Cardiaster*, *Stegaster*, et al., amphisternal derived from meridosternal; AGASSIZ (3) p. 163.—Stereum, *Echinocorytidae* and Spatangoidea; DE MEIJERE (57) p. 153.—Heteronomy, Spatangoidea, *Pourtalesidae*, &c.; op. cit. p. 161: normal in *Hemiaster*, ancient in *Linthia*; BATHER (18) p. 298: explanation of phenomenon; LAMBERT in Review.—Ambulacra, types of struc-

ture; MORTENSEN (195) p. 42.—Ambulacral plates, jaw-apparatus, *Palaeodiscus*; SPENCER (264).—Tubercles, crenellation and perforation, classificatory value; MORTENSEN (195) p. 42.—Fascioles, migration and modification; BATHER (18) p. 298; AGASSIZ (3) p. 179; DE MEIJERE (57) p. 165, 241.

Pedicellariae,—origin from radioles; HALLER (111A) p. 126.—Tetradactylous, origin of; MORTENSEN (194).—Origin of globiferæ (p. 33), no *Ech.* pedicellariae derived from or homologous with radioles (p. 39); MORTENSEN (195).—In many spp.; DE MEIJERE (57) passim, main results p. 244–248.—In *Toxopneustes pileolus*; HERDMAN (120) p. 140.—Podia, giant with large disc, their skeleton described, in *Micropyga*; DE MEIJERE (57) p. 60, 243.

- 6. Hydrocoel &c.:—See last entry.
- 7, 8. Vacant.
- 9. Nervous System:—See II, B, i, a, 9.
- 10, 11. Vacant.
- 12. Generative System:—Vide II, F, iii.—Chemical constitution of ovum in *Strongylocentrotus*; BERTOLO (26).

d. ASTEROIDEA.

- 1. General Account; DELAGE (54) p. 32–63, pls. xi–xvii.
 - 2–4. Vacant.
 - 5. Skeletal Anatomy:—Pedicellariae may in some cases be transformed radioles, and in so far are not homologous with *Ech.* pedicellariae; MORTENSEN (195) p. 39.
 - 6–12. Vacant.
- #### e. OPHIUROIDEA.
- 1. General Account; DELAGE (54) p. 106–136, pls. xviii–xxv.
 - 2–4. Vacant.
 - 5 & 10. Musculature and arm-skeleton, *Ophioglypha*; UEXKUELL (274).
 - 6–8. Vacant.
 - 9. Nervous System:—See II, B, i, a, 9.
 - 10. Mesodermal tissues (exc. skeletal):—Vide e, 5.
 - 11. Vacant.
 - 12. Vide II, F, iii.—Gonads in arms of *Astroschema ferox*; KOEHLER (143) p. 163.

f. CRINOIDEA.

- 1. General Account:—As type of *Pelmatozoa*, based on *Antedon bifida*; DELAGE (54) p. 339–364, pls. xli–l.—Of Class [applicable only to recent forms]; HAMANN (112) p. 1415.
- 2–4. Vacant.
- 5. Skeleton:—Cirrals, syzygies, genital pinnules in *Antedon* spp.; GRIEG (107) p. 24.—IBB in a Senonian *Isocr.*, first discovery in the genus; JAEKEL (139) [but see BIGOT, 1899].—Stem, BB., and union of Br. in *Bathocr.*; GRIEG (107) p. 8.—Loboliths,—nature and function; FRIČ (88): Structure in *Camaroocr.*; SCHUCHERT (249): explained by hollow roots of various *Crin.*, perhaps contained gonads; JAEKEL (132).
- 6–11. Vacant.
- 12. Gonads:—*Metacr.*; SPERRY (265): *Antedon hirsuta*; ANDERSSON (10).

g. CYSTIDEA.

- 1. General Account; DELAGE (54) p. 403–405.
- 5. Skeletal anatomy:—Plates of subvective groove in *Agelacr.* and *Lepidodiscus*; SPENCER (264).

h. BLASTOIDEA.

General Account; DELAGE (54) p. 396–400.

ii. **Variation :—**

Determination of, vide II, F, viii; VERNON (276).

- a. In form:—size, &c., in *Melonites* due to local conditions; KLEM (142) p. 7.
- b. In form and surface characters:—Common in Echinoderms, esp. *Ophiothrix* and *Astropecten*; BELL in HERDMAN (120) p. 149, 150.—Size, number of rays, of madreporites, of mouths, of ani, position of exit of gonads, in *Phaturia*; MONKS (193).—Spines and scales, *Ophiactis abyssicola*, *Ophiothrix fragilis*; GRIEG (106).
- c. In colour:—Colour in life,—many Echinoderms at Woods Hole (see list III, A, ii); CLARK (38): deep-sea *Ech.* (see list III, A, iv), with coloured drawings of *Phormosoma hispidum*, *Pourtalesia tanneri*, and *Cystechinus loveni*; AGASSIZ (3) passim, pls. A, B: various *Ech.*, its specific value (see list III, A, iii, iv); MORTENSEN (195): *Diadema*, *Stomopneustes*, *Toxopneustes*, *Culcita*; HERDMAN (120): various *Oph.* (see III, A, iii); KOEHLER (144): *Ophiura albida*, *Ophiocten*; GRIEG (106): spp. *Antedon* and *Actinometra*; CHADWICK (35).—In life and spirit, various Echinoderms from Patagonia (see III, A, ii); LORIOI (162).—(In spirit?) of numerous spp. of *Ech.* dredged by Siboga (see III, A, iii); DE MEIJERE (57).—In spirit, various *Oph.* (see III, A, iii); KOEHLER (143).
- d. Meristic variation:—
 1. Variation from pentamerous symmetry:—6 rays, *Ophiocera* sp.; KOEHLER (143) p. 154.—5 madreporites, but 1 stone-canal, *Gorgonocephalus*; CLARK (38) p. 562.
 2. Reduplication or absence of parts:—suppression of a gonopore in *Cidaris elegans*; DE MEIJERE (57) p. 24.—*Metacr.*; SPERRY (265).—Position of syzygies spp. *Antedon* and *Actinometra*; CHADWICK (35).—Number of IBr. in *Dolatocr.*; ROWLEY in GREENE (105) p. 191.
- e. Abnormalities:—*Pseudodiadema*; LISSAJOUS (153) p. 159, 160.—Apex, *Schizaster*; TORNQUIST (268) p. 387.—2 gonopores in madreporite, *Stephanocidaris*; MORTENSEN (195).—Fusion of rays, *Ctenodiscus*; MICHAÏLOVSKIJ (192) p. 171.—Ray bifurcate, *Ophiomusium*; KOEHLER (143) p. 64.—*Megistocr.* (p. 62), *Tylocr.* (p. 68), *Dolatocr.* (p. 72, 78), *Gennaeocr.* (p. 80), and remarks (p. 82); WOOD (291).—*Pseudocr.* (p. 230): *Coelocystis*, plates vertically divided (p. 248); SCHUCHERT (249).—Inferradial in *Pentremites*, and extra plate in radial circlet in *Nucleocr.*; ROWLEY in GREENE (105) p. 190.

iii. **Secondary Sexual Characters :—**

- a. Differences of Form or Structure:—*Porocidaris milleri*; AGASSIZ (3) p. 27.
- b. Differences of Colour:—? *Echinus angulosus*; BELL (22A).
- c. Protection of Young:—*Cycethra verrucosa*; MEISSNER (186).—*Antedon hirsuta* on cirri; ANDERSSON (10).—Complete account; LUDWIG (164): Addendum; (165).

(C.) PHYSIOLOGY.

- i. **General**:—*Echinoderma* in general (p. 19–23), comparative (p. 427), *Hol.* (p. 303–309), *Ech.* (p. 201–203), *Ast.* (p. 63–68), *Oph.* (p. 136–139), *Crin.* (p. 364–366); DELAGE (54).—Exhaustive account of chemical physiology, esp. blood, respiration, nutrition, excretion, poisons, muscles, stereom, pigments, gonads, and conditions of existence; FUERTH (91).

- ii. **Circulation** :—Regulated by osmosis in *Strongylocentrotus*, *Sphaerechinus*, *Spatangus*, *Holothuria*, and *Stichopus* ; HENRI (116).
- iii. **Respiration** :—Vide c, i.
- iv. **Alimentation and Digestion** :—Ferments, *Holothuria*, *Spatangus*, *Asterias*, last strongest ; CLERC (41).
- v. **Excretion and its Products** :—Pigments,—nature of ; MANDOUX (182) p. 370: products of metabolism without selective value ; HARGITT (113) p. 143.
Colour, see II, B, ii, c.
- vi. **Sensation** :—Discussion of consciousness in action of Echinoderms ; LUKAS (167).—Sense-organs on podia, *Ophiopholis aculeata* ; ÖSTERGREN (204) p. 564.—Sensibility of spines, reaction to light, *Ophioglypha* ; UEXKUELL (274) p. 4.
- vii. **Miscellanea and Experimental Physiology** :—Functions of podia, *Oph.* (vide II, D, vi) ; ÖSTERGREN (204).—Movement of stomach-muscle, *Ophioglypha* ; UEXKUELL (274) p. 4.—Solution of lime in test of deep-sea *Ech.*, *Urechinus*, *Cystechinus*, *Pilematechinus* ; AGASSIZ (3) p. 153, 159, 166.—Freezing-point of body-fluid in *Echinus* and *Cucumaria* ; DEKHUYZEN (51).—Effect of artificial sea-water on *Asterias* ; TRUE (270).—Poisoning *Ophioglypha* by slate bottom ; UEXKUELL (274) p. 3.
Amount of copper in *Asterias* and *Stichopus* ; DUBOIS (72).—Arsenic in *Pedicellaster*, *Strongylocentrotus*, *Stichopus* ; BERTRAND (27).—Chemical constitution of ovum, *Strongylocentrotus* ; BERTOLO (26).

(D.) BIONOMICS.

- i. **General Accounts** :—Vacant.
- ii. **Special habits** :—Boring,—in coral ; FINCKH (78) p. 141: of *Echinostrephus molare* induces spiral twist in actinal radioles ; HERDMAN (120) p. 139.
- iii. **Habitat** :—(a) Various spp.,—in N. polar basin (see list III, A, v) ; MICHAÏLOVSKIÏ (192) : Dröbaksund (vide III, A, ii) ; KIAER (140) : near Plymouth ; MAR. BIOL. ASS. (184).—*Hol.*, *Ech.*, *Oph.*, atoll of Minikoi ; GARDINER (95) p. 44, 47, 338. (c) *Ech.* :—Influence on classification ; DOUVILLÉ (66) p. 72.—*Stomopneustes variolaris*, *Echinostrephus molare* ; HERDMAN (120).—*Psammechinus verruculatus*, *Gymnechinus pumilio*, & *Echinoneus cyclostomus* on *Lithothamnion* ; DEMEIJERE (57) p. 89, 92, 140.—Boring in platform of coral reef ; FINCKH (78) p. 141. (e) *Oph.* :—Change of, acts as poison ; UEXKUELL (274) p. 3. (f) *Crin.* :—Diverse views as to *Holopus* and *Cyathidium* ; HENNIG (115) p. 55 ; RAVN (223).
- iv. **Feeding** :—(b) *Hol.*, not on coral or seaweed, but on microscopic organisms in coarse sand ; GARDINER (95) p. 338 ; FINCKH (78) p. 141.—Diatoms in gut of *Holothuria* at Civita Vecchia ; LANZI (151). (c) *Ech.* same as *Hol.* (supra) ; GARDINER (95). (e) *Ophioglypha* ; UEXKUELL (274) p. 3, 12.—*Astrophytida*, on plankton ; ÖSTERGREN (204) p. 564.
- v. **Defence and Protection** :—Vacant (but see next entry).
- vi. **Locomotion** :—Resting position and movements of *Ophioglypha* (p. 4), its locomotion (p. 6), turning over (p. 10), protective (p. 15) ; UEXKUELL (274).—Podia serve for fixation and so assist locomotion by flexure of rays, in *Ophiocoma*, *Amphiura*, *Ophiopholis*, and *Ophiura*, so also in *Hol.* ; ÖSTERGREN (204).—*Geocoma* and *Saccocoma*, their tracks in Solnhofen Plattenkalk ; WALTHER (281) p. 200, 201 and fig.

- vii. **Autotomy and Regeneration**:—(a) See under heading 'Physiologie' passim; DELAGE (54). (d) Illustrated by photographs of specimens in collection F. D. Snyder, Ashtabula, O.; McCLURE (173).—Regen. of complete starfish from ray broken off at a distance from the body in *Linckia diplax* and *L. pacifica*; KELLOGG (139).—Autot. of rays, also regen. of new rays from rays cut off at a distance from the disc, in *Phataria*; MONKS (193). (e) Autot. *Ophioderma*, *Ophioglypha*; UEXKUELL (274) p. 13.—Regen. of rays in *Ophioglypha* is quicker the more rays are removed, except when all are removed; ZELENY (297).—Loss of dorsal covering of disc; BELL in HERDMAN (120) p. 148. (f) Regen. viscera, *Antedon indica*; CHADWICK (35).—Loss of arms without regen., *Megistocr.*; WOOD (291) p. 66.—Regen. arms, *Barycr.* and *Platycr.*; WHITFIELD (286).
- viii. **Parasites and Commensals**:—(b) *Cystobia*, gregarine, spp. parasitic in *Holothuria* and *Cucumaria*; WOODCOCK (292).—*Tetrarhynchus*, cestode, in holothurian, ? *Molpadia*; SHIPLEY (253) p. 147.—Numerous mollusca in gut of *Stichopus* et al.; KIAER (140) p. 70, 71.—*Synapticola*, lamellibranch in *Synapta inhaerens* and comparison with similar cases; MALARD (180).—*Pinnotheres villosissimus*, brachyuran in cloaca of *Muelleria lecanora*; DOFLEIN (64) p. 126. (c) *Anophrys*, ciliate protozoon in intestine of *Strongylocentrotus*, *Sphaerechinus*, and *Arbacia*; DI MAURO (63).—*Siphonostoma* and *Scalesetosus*, polychaetes on *Echinus*; *Montacuta*, mollusc on *Spatangus*; *Tellimya*, mollusc on *Echinocardium*; MAR. BIOL. ASS. (184) p. 210, 211.—*Ichthyonema* (olim *Echinonema* Gemm. non v. Linst.) nematode in perivisceral cavity of *Echinus esculentus*; GEMMILL & LINSTOW (99): GEMMILL (98).—Parasitic mollusc?, in radiole, *Astropyga radiata* (p. 22), gastropod and crab on *Salmacis bicolor* (p. 66), crab on *Toxopneustes pileolus* (p. 120); MORTENSEN (195).—*Arete*, alpheid on oral surface of *Heterocentrotus*; COUTIERE (48). (e) *Mucronalia*, gastropod on *Ophiothrix deposita* and *O. crassispina*; KOEHLER (143) p. 146, 147.
- ix. **Echinoderms as Food**:—Of man, *Cucumaria frondosa*; CLARK (38) p. 548.—Of Genoese, *Ech.*; PARONA (207) p. 384.—Of fish, *Echinarachnius*, *Ophiopholis*, *Amphiura*, and *Hol.*; CLARK (38) p. 549.—Of crabs or fish, *Tetrodiscus* (= *Echinodiscus*) *auritus*; FOURTAU (83) p. 425.
- x. **Echinoderms in Geological Aspect**:—Coral reefs degraded by *Hol.*; GARDINER (95) p. 166, 338: by *Ech.*, but not *Hol.*; FINCKH (78) p. 141.—*Ech.* holes in the reef at Mamangúape (p. 53, pl. xliii), at Pernambuco (p. 62, pl. 1), at Itaparica, Bahia (p. 247, pl. lxxix), at Maceio due to *Echinometra subangularis* (p. 271); BRANNER (32).
Ech. fossils in flint; BATHER (17).—Impregnation of *Ech.* tests in chalk with crystalline silica; MEUNIER (189).
Echinocardium cordatum in lumps of shelly limest. and sandst. now forming in Danish waters; NORDMANN (200).—"Echinoderm conglomerate," chiefly remaniée *Ech.* from top of Cretaceous; GRÖNWALL (109) p. 28 & (108) p. 428.—Plates of *Ech.* in Lower Cretaceous reef-rock; CAYEUX (34) p. 96, 97.—*Crin.* limest.,—Lower and Mid. Lias, important in Swiss and French Alps; LORY (163).—Bathonian; LEUTHARDT (152).—Composition, mode of occurrence in Bajocian, Mont d'Or; RICHE (228) passim and pl. B; SCHARDT (243) p. 304.—Lenticles 80 cm. thick of *Crin.* pinnulars; MAIRE (178).—*Sphaeronis* as rock former; HOLM (126) p. 47.
Association of sand and *Crin.* stems in St. Louis beds and modern Atlantic; UDDEN (272) p. 391.

(E.) MISCELLANEOUS.

i. Research and Instruction:—

- a. Preservation:—Killing and preservation of Echinoderms; CLARK (38) p. 549.—Collecting, especially on coral-reefs, and preservation in natural position of *Hol.*, *Ech.*, *Crin.*; PLATE (219).—*Hol.*, killed by methyl blue; MADER (175) p. 208: Preservation expanded; TULLBERG (271).
- b. Methods of research:—Toxic action of ordinary distilled water on ova of *Arbacia*, but artificial sea-water made with purer distilled water is better than natural sea-water, perhaps owing to absence of ammonia; LYON (170).—Rearing *Ast.* larvae; DELAGE (52): on culture of alga, *Chlorella*; HÉROUARD (122).—Preparation of complete series *Ech.* larvae 10–46 hours; SCHMIDT (246).—Methods of identifying Echinoderms, esp. *Hol.*; CLARK (38) p. 549.—Examination of *Ast.* and *Ech.* for arsenic; BERTRAND (27).
- c. Museum Exhibits and Collections:—Museum label, *Ech.* in flint; BATHER (17).—Nantes Museum, Gourdon coll. Pyrenean *Ech.* Senonian and Eocene (qq.v.); GOURDON (102).—List of type-specimens of *Ech.* and *Crin.* in museums and private collections of Grenoble; REBOUL (224).—*Echinoderma* in Naturhist. Mus. Hamburg, and works dealing therewith; KRAEPELIN (146).—Fossil Echinoderms added to U. S. Nat. Mus.; SCHUCHERT (247, 248).
- d. Instruction:—Text-books,—WEYSSE (284) pp. 85–104: advanced; DELAGE (54): comp. anat.; HALLER (111A).

ii. Economics:—see II, D, ix, Echinoderms as food of man.—Of Woods Hole Echinoderms; CLARK (38) p. 548.—*Ast.* damage to fisheries, summary; ALBERT (5).iii. Bibliography:—General selected; DELAGE (54) p. 442–460.—Palaeozoic *Ech.*; KLEM (142) p. 76–97.—*Crin.* [*? Pelmatozoa*] begun; HAMANN (112) p. 1420.—Echinoderms in Rumpf's "Rariteitkamer"; MARTENS (185) p. 131.—Literature for 1892 abstracted; BERGMANN (25): for 1904; LUDWIG (166).iv. Historical, Popular notions, &c.:—Summary of papers on fossil Echinoderms in Geol. Mag. 1864–1903; ANON. (12) p. 52–53.—History of research on brood-protection; LUDWIG (164).—Names applied to Class *Crin.*; HAMANN (112) p. 1419.—The fate of G. Troost's collection and the MS. of his monograph on Crinoids of Tennessee (p. 219), history of *Camarocr.* = *Lobolithus* (p. 254); SCHUCHERT (249).—'Abou-Chokah,' father of thorns, Bedouin name for *Diadema setosum* (p. 413), 'Halaouan' for *Echinometra lucunter* (p. 416); FOURTAU (83).

(F.) AUXOLOGY.

i. General Principles:—Vacant.

ii. General Accounts:—Echinoderma in general (p. 23–30, pls. vii–x) comparative (p. 428–431), *Hol.* (p. 310–318), *Ech.* (p. 203–215), *Ast.* (p. 68–82), *Oph.* (p. 139–144), *Crin.* (p. 366–375); DELAGE (54).iii. Formation of Gonads:—Myelin in nucleus and nucleolus of *Ech.* ovum; ALBRECHT (6) p. 99, 108.—Plasmodia in ovaries, *Arbacia*, *Echinus*, *Asteracanthion*; JANSSENS (136) p. 263.—Spermatozoa, *Ophiura*, *Ophiothrix*, *Echinus*; RETZIUS (226) p. 27–28, pl. xii.—Structure and formation of ova, *Antedon*; ANDERSSON (10).iv. Oviposition, Fertilisation, and Segmentation:—Breeding period,—*Ech.* *Oph.* *Ast.* *Hol.* Jamaica; ANDREWS (11) p. 76: *Ophiothrix*, *Ophiura* at la Hougue; MALARD (179) p. 192.—Copu-

lation (?) and fertilisation of ova, *Antedon hirsuta*; ANDERSSON (10).—Fertilisation due to entrance of water into ovum, not to sperm; SCHUECKING (250).—Fertilisation and segmentation, general discussion; HARTOG (114).—Rhythmic production of CO₂ from sperm-ova of *Arbacia* during cleavage, also resistance to KCN; LYON (169).—Electrical potential developing ova of Turtle and *Fundulus*, changes compared with rhythms previously observed in Echinoderm ova; HYDE (130).—Outer protoplasmic layer, nature of mitosis in *Echinus*, *Strongylocentrotus*, *Ophiothrix*; ZIEGLER (298).—Morula and gastrula to first rudiment of coelom, mesenchyme cells becoming skeletogenous, *Ophiothrix*; MACBRIDE (172).—Blastula to Pluteus of *Echinus microtuberculatus* exact time-stages, studied by sections; SCHMIDT (246).

- v. **Larval Stages**:—(a) Generalised diagr.; HALLER (111A) p. 110.—Rearing larvae; HÉROUARD (122). (d) Parthenogenetic larvae of *Asterias* reared to early Brachiolaria stage and described; DELAGE (52). (f) Fixed stage, *Antedon*; GRIEG (107) p. 19, 37.

- vi. **Organogeny**:—(c) *Echinoidea*:—

5. Development of coronal plates, *Arbacia*; AGASSIZ (3) p. 54.

- vii. **Post-larval Growth-stages**:—(b) Growth-changes,—*Thyone briareus*; CLARK (38) p. 568: *Cucumaria*; MICHAILOVSKIJ (192). (c) Growth-changes,—test of *Cidaridae*, shape, anal system, coronal plates, peristomial plates, tubercles (p. 1–18), *Dorocidaris panamensis* (p. 21, 22), *Porocidaris cobosi* (p. 30), *Salenia miliaris* (p. 42), *Arbacia* (p. 54), *Dermatodidema* (p. 60, 64), *Echinothuridae* (p. 75), *Phormosoma* (p. 86, 109), *Asthenosoma* (p. 113), *Brissopsis* (p. 190); AGASSIZ (3): *Mellita pentapora*; CLARK (38) p. 565.—Young,—of *Cidaris elegans*, descr. (p. 25), *Phormosoma* (p. 28), *Podocidaris* (p. 68); DE MEIJERE (57): *Hemiasiter*, *Arbacia*; LORIOL (162): *Stephanocidaris* (p. 8), *Salmacis* (p. 71, 73), Protechinus stage, *Phormosoma* (p. 54 & fig.); MORTENSEN (195).—Growth in *Melonitidae*, criticism of JACKSON & JAGGER; KLEM (142) p. 2. (d) Growth-stages,—*Leptotyphaster*; MICHAILOVSKIJ (192).—Growth of *Asterias rubens* in given time; KIAER (140) p. 74.—Brepheic *Asterias*, absence of specific distinction; CLARK (38) p. 551. (e) Association of different aged *Ophiura* in warm areas but not in cold; GRIEG (106) p. 22.—Growth-changes,—*Gorgonocephalus lincki*; GRIEG (106) p. 38: *Ophiopleura*; MICHAILOVSKIJ (192). (f) Stalked young, *Antedon hirsuta*; ANDERSSON (10).—Young *Megistocr.*; WOOD (291) p. 59. (g) Growth-stages in *Pseudocr.* (p. 236) in *Sphaerocystis* (p. 250, 252); SCHUCHERT (249).

- viii. **Developmental mechanics and Experimental Embryology**:—Degeneration of ovules, *Strongylocentrotus*; DUBUISSON (73).—Asters in *Toxopneustes* and *Echinarachnius*, observations by N. YATSU, reply to PETRUNKEWITSCH; WILSON (288).—Mechanism of epithelium-formation illustrated from *Ech.* blastulae; ZUR STRASSEN (300).

Giant and monster larvae produced by fusion of one or more morulae with plasmodia, *Arbacia*; JANSSENS (136).—Blastomeres of *Psammechinus* cut apart, stained *intra vitam*, and reunited to form morulae of new individuality, which proceed with development; GARBOWSKI (94).—Abnormal development often due to nature of gonads, not to environment; VIGUIER (279).—Fertilisation, normal or artificial, produces difference between osmotic pressure and surface-tension, equilibrium restored by cleavage; SPAULDING (262).

The determination of variation, account of Author's experiments on *Ech.* sperm-ova, (163) Zool. Rec. 1895, (214) Zool. Rec. 1898, (240) Zool.

Rec. 1899, (337 & 338) Zool. Rec. 1900 ; VERNON (276) p. 105, 168, 190, 217, 229, 296.—Vitality of the ovum, reaction to external stimuli, summary of recent work ; LOISEL (160).—Susceptibility to heat and cold of *Arbacia* sperm-ovum and production of carbon dioxide, vary in rhythms ; LYON (171).—Ovulase, i.e. extract of spermatozoa of *Strongylocentrotus lividus* and *Echinus esculentus*, action on ova ; PIERI (218).—Poison-effect of alcohols on *Psammechinus* ova ; FUEHNER (89).—Influence of alcohols of differing strengths on *Psammechinus* and *Strongylocentrotus* development ; FUEHNER (90).—Action of potassium cyanide on *Ech.* ovum ; JACKSON (131).—Antagonistic poisons and development of *Ech.* and *Ast.* embryos ; SOLLMANN (259).—Effect of anisotonic solutions and saponin on ova of *Asterias* and *Arbacia* ; SOLLMANN (260).—Influence of alkaline and acid sea-water on fertilization of *Ech.* ova ; LOEB (159).—Immunity of *Ech.* sperm-ova to ether, H Cl, K Cl, and Na Cl increases up to segmentation ; SPAULDING (263).—Solutions in which *Ech.* ova can develop ; LOEB (157).—Role of Chlorine, OH, Natrium, Kalium, Calcium, SO₄, Carbonate, and Magnesium in developing larvae *Ech.* and *Ast.* ; HERBST (117).

Hybridization :—*Strongylocentrotus purpuratus* ♀ × *Asterias capitata* ♂, *A. ochracea* ♂, *Pycnopodia spuria* ♂, *Asterina* ♂, and an *Ophiurid* ♂, in normal, alkaline, and acid sea-water, development of hybrids ; LOEB (155, 158, 159) : Note on the preceding ; ABRIC (1).—*Strongylocentrotus* ♂ × *Sphaerechinus* ♀, and vice versa ; VIGUIER (277).—BOVERI (31) maintains the observations and conclusions of his paper (23) Zool. Rec. 1903 against the criticism of DRIESCH (69) Zool. Rec. 1903.

Artificial Parthenogenesis :—Critical summary of recent work ; BOHN (29) : reply ; VIGUIER (278).—General discussion of results on *Ech.* ovum ; KOSTANECKI (145) p. 86 : ditto from standpoint of chemical physiology ; FUERTH (91) p. 602.—*Strongylocentrotus*, and *Psammechinus*, relation of chromosomes ; PETRUNKEWITSCH (217).—Induced by drying ova, in *Asterias rubens* ; GIARD (100),—carbonic acid after shaking, ova of *Strongylocentrotus* ; DELAGE (53).—Carbonic acid larvae of *Asterias* reared ; DELAGE (52).—Induced in *Arbacia* ova by concentration of sea-water, description of mitosis and following stages ; HUNTER (128).—Vitelline membrane produced on unfertilised ova of *Echinus* and *Strongylocentrotus* by traces of silver salts and followed by incomplete segmentation ; HERBST (119).—Difference between *Ast.* and *Ech.*, membrane formation and cytolysis in *Ech.*, nature of stimulus ; LOEB (156).—Merogony, experiments on *Arbacia pustulosa* and *Sphaerechinus granularis* ; ARIOLA (13).—*Asterias* ; GARBOWSKI (93).—Total failure of all experiments at Naples, Jan.—June 1903 ; JANSSENS (136) p. 250.

III. DISTRIBUTION*.

A. GEOGRAPHICAL.

- i. **General** :—Distrib. of *Ech.* in general, its methods, ocean transport ; AGASSIZ (3) p. 219.—Distrib. of larvae as bearing on distrib. of adults ; GARDINER (96).—The bathymetric and geographic distrib. of each genus is given by DELAGE (54).—Distrib. of brood-protecting Echinoderms ; LUDWIG (164).—Distrib. of genera of *Ech.* continued from 1903 ; MEISSNER in HAMANN (112).—Abundance of *Crin.* individuals in northern seas contrasted with paucity of genera and spp., vice versa in southern seas ; GRIEG (107).

* For the species found, refer to generic names under IV.

ii. Atlantic Ocean and adjacent Seas:—

North Sea, Cold-water area, *Oph.* fauna discussed, also other Echinoderms (pp. 5–15) *Oph.* collected “M. Sars” here and Norway coasts, also Arctic to Spitzbergen, distrib. of each sp. discussed, *Ophiopleura*, *Ophiura*, *Ophiocten*, *Amphiura*, *Amphilepis*, *Ophiactis*, *Ophiopus*, *Ophiopholis*, *Ophiacantha*, *Ophiothrix*, *Ophioscolex*, *Asteronyx*, *Gorgonocephalus*, *Bathybiaster*, *Pourtalesia*; GRIEG (106).—General discussion of *Crin.* fauna, esp. of Norway coasts, distrib. of each sp., *Bathyer.*, *Rhizocr.*, *Antedon*; GRIEG (107).

Norway,—Trondhjem, *Psolus* n. sp.; ØSTERGREN (203).—Dröbakssund, *Stichopus*, *Mesothuria*, *Strongylocentrotus*, *Amphidetus*, *Asterias*, *Astropecten*, *Archaster*, *Ophioglyph*a, *Ophiopholis*, *Ophiothrix*; KIAER (140).

British coasts,—Ayrshire, common Echinoderms; SMITH (257).—Firth of Clyde, numbers of each species; McINTOSH (174).—Mouth of R. Colne, *Henricia*; COLE (43).—Plymouth, list with locc. of *Hol. Ech. Ast. Oph. Crin.*; MAR. BIOL. ASS. (184): *Cucumaria*; PACE (205).

French Coast,—La Hougue, variations in benthos, *Hol.*, *Ech.*, *Oph.*; MALARD (179) p. 192, 195.—B. of Biscay, *Ech.*, *Ast.*; ALBERT (4). Portugal, Echinoderm fauna,—N.; (198): Š.; (199): NOBRE.

Mediterranean—near Capri,—plankton, larval *Synapta*, on mud *Ankyroderma*, *Echinocardium*; LO BIANCO (154).

Black Sea, *Amphiura*, *Synapta*, *Cucumaria*; SOVINSKIĖ (261).

America,—Woods Hole, shallow-water Echinoderm fauna, *Asterias*, *Cribrella*, *Solaster*, *Ophiura*, *Ophioglyph*a, *Ophiopholis*, *Amphipholis*, *Gorgonocephalus*, *Arbacia*, *Strongylocentrotus*, *Echinarachnius*, *Melita*, *Cucumaria*, *Thyone*, *Caudina*, *Trochostoma*, *Synapta*; CLARK (38).—Bathymetric and geographic range of W. Indian *Ech.* fauna; AGASSIZ (3) p. 218.—Jamaica, *Ech. Oph. Ast. Hol.*; ANDREWS (11) p. 76.—Argentine Patagonia, E. coast, *Hemias*ter, *Arbacia*, *Echinus*, *Encope*, *Cycethra*, *Asterina*, *Echinaster*, *Lahillea*, *Gastraster*, *Asterias*, *Ophiactis*, *Ophioceramis*; LORIOL (162).

iii. Indian Ocean and adjacent Seas :—S. Africa, S. & E. coasts, various locc., *Ech.*, esp. *Astropyga*, *Phormosoma*, *Echinus* n. sp., *Palaeolampas*, *Urechinus*; BELL (22A).—G. of Suez, *Ech.* fauna, *Rhabdocidaris*, *Diadema*, *Heterocentrotus*, *Echinometra*, *Echinus*, *Clypeaster*, *Tetradiscus*, *Echinolampas*, *Lovenia*, *Metalia*, *Schizaster*, *Möira*; FOURTAU (83).—Oman, *Eobrissus*; BELL (22).—Ceylon, *Cidaris*, *Stephanocidaris*, *Phyllacanthus*, *Diadema*, *Echinothrix*, *Stomopneustes*, *Pseudoboletia*, *Echinostrephus*, *Temnopleurus*, *Salmacis*, *Toxopneustes*, *Fibularia*, *Clypeaster*, *Echinanthus*, *Laganum*, *Echinodiscus*, *Echinoneus*, *Echinolampas*, *Maretia*, *Lovenia*, *Schizaster*, *Astropecten*, *Luidia*, *Stellaster*, *Anthenea*, *Goniodiscus*, *Pentaceros*, *Culcita*, *Asterina*, *Ophidiaster*, *Linckia*, *Nardoa*, *Metrodora*, *Retaster*, *Echinaster*, *Pectinura*, *Ophiura*, *Amphiura*, *Ophioneis*, *Ophiocnemis*, *Ophiocoma*, *Ophiarachna*, *Ophiothrix*, *Ophiomaza*, *Ophiop*teron, *Ophiomyxa*; HERDMAN (120): *Antedon*, incl. 1 n. sp., and *Actinometra*, coll. Herdman; CHADWICK (35).—B. of Bengal, *Phormosoma* n. sp.; MORTENSEN (194).—G. of Siam, *Stephanocidaris*, *Diadema*, *Astropyga*, *Chaetodiadema*, *Echinothrix*, *Salmacis*, *Pleurechinus*, *Gymnechinus*, *Toxopneustes*, *Parasalenia*; MORTENSEN (195).

Malay Archipelago,—zoogeographic remarks (p. 218), complete list of *Ech.* (p. 201–214) with special notes or descriptions of spp. of *Cidaris*, *Phormosoma*, *Asthenosoma*, *Calveria*, *Araeosoma*, *Hapalosoma*, *Hygrosoma*, *Tromikosoma*, *Sperosoma*, *Salenia*, *Aspidodiadema*, *Dermatodiadema*, *Diadema*, *Echinothrix*, *Chaetodiadema*, *Astropyga*, *Micro*pyga, *Hemip*edina, *Coelopleurus*, *Podocidaris*, *Prionechinus*,

Trigonocidaris, *Genocidaris*, *Pleurechinus*, *Temnopleurus*, *Salmacis*, *Mespilia*, *Stomopneustes*, *Psammechinus*, *Gymnechinus*, *Toxopneustes*, *Triopneustes*, *Pseudoboletia*, *Parasalenia*, *Selenechinus* n. g., *Echinometra*, *Heterocentrotus*, *Echinocyamus*, *Fibularia*, *Laganum*, *Alexandria*, *Clypeaster*, *Echinodiscus*, *Echinoneus*, *Echinobrissus*, *Aphanopora*, *Echinolampas*, *Neolampas*, *Stereopneustes*, *Stegaster*, *Sternopatagus*, *Pourtalesia*, *Palaeostoma*, *Palaeopneustes*, *Plesiozonus*, *Linopneustes*, *Hemiasiter*, *Faorina*, *Moiria*, *Schizaster*, *Brissus*, *Metalia*, *Brissopsis*, *Maretia*, *Breynia*, *Lovenia*, *Aerope*, *Aceste*, *Homolampas*, *Phrissocystis*, and *Palaeotropus* (vide IV, c); DE MEIJERE (57) passim, list of n. spp. p. 238.—Deep-sea *Oph.* of 'Siboga,' *Pectinura*, *Ophiopeza*, *Ophiopyren*, *Ophioconis*, *Ophiopallas*, *Ophiocirce*, *Ophiotrochus*, *Ophioceramis*, *Ophiomoeris*, *Ophiocrates*, *Ophiernus*, *Ophiolytus*, *Ophiozona*, *Ophiomidas*, *Ophiomastus*, *Ophiopyrgus*, *Ophioleuce*, *Ophiochrysis*, *Ophioglypha*, *Ophiomusium*, *Ophioplax*, *Ophiochiton*, *Ophiodoris*, *Amphiura*, *Ophiactis*, *Ophiotholia*, *Ophiomyces*, *Ophiacantha*, *Ophioplinthaca*, *Ophiomitrella*, *Ophiocamax*, *Ophiiothamnus*, *Ophiomytis*, *Ophiotoma*, *Ophioscolex*, *Ophiothrix*, *Ophiobyrsella*, *Ophiodera*, *Astrotoma*, *Astrogomphus*, *Astroceras*, *Astrocharis*, *Astrochema*, *Ophiocreas*, *Astronyx*; KOEHLER (143).—Amboina, Echinoderms described by Rumpf; MARTENS (185) p. 131: list of new Echinoderms collected by SEMON; SEMON (252): *Oph.* descr. by Brock and other *Oph.* mostly this region revised, vide *Ophiopaepale*, *Ophiothyreus*, *Ophioglypha*, *Ophiactis*, *Amphiura*, *Ophiocnida*, *Ophionereis*, *Ophiomastix*, *Ophiocoma*, *Ophiarachna*, *Ophiothrix*, *Lütkenia*, *Ophiæthiops*, *Ophiosphaera*, *Ophiolophus*; KOEHLER (144).

iv. **Pacific Ocean and adjacent Seas:**—Various locc., n. spp. of *Chaetodiadema*, *Opechinus*, *Pleurechinus*, *Microcyphus*, *Gymnechinus*; MORTENSEN (195).

Japan, *Araeosoma* n. sp., *Asthenosoma*, *Calveria*; MORTENSEN (194).

Panama, deep sea *Ech.* specially discussed, also others and some from other regions, see especially *Abatus*, *Acrosalenia*, *Aerope*, *Agassizia*, *Amphiopneustes*, *Araeosoma*, *Arbacia*, *Archæopneustes*, *Argopatagus*, *Aspidodiadema*, *Asthenosoma*, *Atelospatangus*, *Bothriocidaris*, *Brissopsis*, *Calveria*, *Calymne*, *Cassidulus*, *Centrocidaris*, *Cidaris*, *Conolampas*, *Cystechinus*, *Dermatodiadema*, *Dialithocidaris*, *Dorocidaris*, *Echinocrepis*, *Echinolampas*, *Gauthieria*, *Genicopatagus*, *Goniocidaris*, *Histocidaris*, *Homolampas*, *Hoplosoma*, *Hygrosoma*, *Kamptosoma*, *Lambertia*, *Lepidechinus*, *Linopneustes*, *Lysechinus*, *Melonites*, *Moiria*, *Nacospatangus*, *Neolampas*, *Oligoporus*, *Palæobrissus*, *Palæotropus*, *Paleopneustes*, *Parabrissus*, *Periaster*, *Petalocidaris*, *Phormosoma*, *Phrissocystis*, *Pilematechinus* n. g., *Plesiadiadema*, *Plesiozonus*, *Plexechinus*, *Porocidaris*, *Pourtalesia*, *Rhynchopyrgus*, *Salenia*, *Schizaster*, *Spatagocystis*, *Spatagodesma*, *Sperosoma*, *Sternopatagus*, *Temnechinus*, *Tetracidaris*, *Toxobrissus*, *Urechinus*; Bathymetric and geographic range of Panamic *Ech.* fauna (p. 218); AGASSIZ (3).

Australia,—Victoria, *Goniocidaris*, *Strongylocentrotus*, *Microcyphus*, *Amblypneustes*, *Holopneustes*, *Echinocyamus*, *Eupatagus*, *Echinocardium*, *Linthia*; HALL (111).

New Zealand, list of *Echinoderma*; HUTTON (129).—*Cucumaria*; PERRIER (213).

v. **Arctic Ocean and adjacent Seas:**—*Ast.* fauna, esp. *Asterias*, *Bathybiaster*, *Ilyaster*, *Rhegaster*, *Poraniomorpha*, *Lasiaster*, *Solaster*, *Stichaster*; ÖSTERGREN (202).—Between Nova Zembla and Franz-Josef's Ld. *Elpidia*, *Cucumaria*, *Phyllophorus*, *Psolus*, *Eupyrigus*, *Trochostoma*, *Myriotrochus*, *Strongylocentrotus*, *Schizaster*, *Pourtalesia*, *Asterias*, *Cribrella*, *Hymenaster*, *Pteraster*, *Lophaster*, *Solaster*, *Crossaster*, *Rhegaster*, *Leptoptychaster*, *Ctenodiscus*, *Pontaster*, *Pluto-*

naster, *Ophiopleura*, *Ophiura*, *Ophioglypha*, *Ophiosten*, *Amphiura*, *Ophiopholis*, *Ophiacantha*, *Ophioscolex*, *Gorgonocephalus*, *Antedon*; MICHAÏLOVSKIJ (192).—Spitzbergen, Echinoderms chiefly on W. coast; ROEMER (229): *Trochoderma elegans*, *Ophioglypha nodosa*, and remarks on records of other echinoderms; MICHAÏLOVSKIJ (191).

- vi. **Antarctic Ocean and adjacent Seas**:—Complete list of litoral *Ast.* from American subregion of South Sea, esp. *Diplasterias*, *Asterias*, *Cribrella*, *Cycethra*, and comparison with their distrib. in Australian and African subregions, and with corresponding spp. in N. hemisphere; MEISSNER (186).—C. Horn and neighbourhood, *Synallactes*, *Holothuria*, *Cucumaria*, *Thyone*, *Psolidium*, *Psolus*, *Caudina*, *Trochodota*, *Chiridota*; PERRIER (212).—Magellan Str., *Chiridota* n. sp.; PERRIER (214).

B. GEOLOGICAL.

(i) GENERAL.

Evidence of *Echinoderma* for connection of Antilles with Mediterranean in Oligocene time contradicted by *Mollusca*, possible explanation; REID (225).—Strata of Pyrenees, Cambrian to Pleistocene, with lists of Echinoderms; ROUSSEL (234).—Brief systematic account of genera of *Cidaridae* and *Salenidae* with special reference to French fossils (86), ditto, *Diadematidae* (87); FRITEL.

(ii) CAINOZOIC.

- a. **General**:—Spp. of *Schizaster*, horizon correlated with mutations of apex; TORNUST (268).—Tertiary *Ech.* & *Crin.* Victoria, S. Australia, and Tasmania, list with locc.; DENNANT (58).
- b. **Pleistocene**:—Denmark, —Stone-age, *Psammechinus*; PETERSEN (215) p. 81: Yoldia clay, Esbjerg, *Psolus*, *Ophioglypha*; MADSEN (177) p. 530.—Cave-breccia, Gibraltar, *Strongylocentrotus*; ACLAND (2).—Nettuno, Italy, *Ech.*; MELI (187) p. xli.—Ischia, —Astian, Mt. Epomeo, *Fibularia*, *Brissopsis*, *Schizaster*, *Amphidetus* (p. 5), Saharian, volcanic agglomerate, Valle di Mezzavia, *Fibularia* (p. 8); BELLINI (23).—Raised beaches, G. of Suez, *Rhabdocidaris*, *Heterocentrotus*, *Echinometra*, *Echinus*, *Clypeaster*, *Tetrodiscus*, *Metalia*, *Fibularia*, *Brissus*; FOURTAU (83) p. 444.—Bore-hole in coral reef, Funafuti, *Cidaris*, *Ech.* radioles, and *Hol.* plates; HINDE (124) p. 329.
- c. **Pleiocene**:—*Ech.* in tuff near Nettuno; DE VESCOVI (61) p. 67: not this rock; MELI in Abstr.—Near Borgamano, *Encrinurus* [*Cidaris*, *Echinus*, *Echinocyamus*, *Schizaster*; PATRINI (208) p. 743.—Upper:—Suez Canal, *Temnopleurus*, *Laganum*; FOURTAU (83) p. 444. Purisima formation, California, *Astrodapsis*, *Scutella*; HAEHL (110) p. 24.—New Zealand, *Echinus*; LORIOLO (162) p. 20.
- d. **Meiocene**:—Tagliacozzo, Italy, *Cidaris*; LUPI (168).—Upper:—Redonian, Rennes, *Echinocyamus*; DOLLFUS (65) p. 662.—(Or Middle), Pontilevian, —Haguineau (Maine-et-Loire) *Toxopneustes*, *Echinus*, *Psammechinus*, *Cidaris*, *Echinolampas*, *Echinocyamus*; COUFFON (46): near Saumur, list of *Ech.*; COUFFON (47) p. 218.—Middle, —Helvetian, —‘calcaire à moellons de l’Hérault,’ *Scutella*; LORIOLO (162) p. 68: Suabia, Echinoderm fauna compared with other locc., *Sphaeraster*, *Astropecten*, *Antedon*, *Cidaris*, *Psammechinus*, *Stirechinus*, *Scutella*, *Amphiope*, *Fibularia*, *Hemiaster*, *Spatangus*, *Sphaerites*, *Echinolampas*, *Brissopsis* [sic], *Schizaster*, *Echinocardium*; SCHUETZE (251).—Lower, —Algeria, *Schizaster*; SAVORNIN (241) p. 146.—15 km. E. of

Dêr el Beda, near Suez, *Scutella*, *Brissopsis*; BARRON (15) p. 607.—Burdigalian, near Chambéry, France, *Echinolampas*, *Spatangus*, *Psammechinus*; DOUXAMI (69).

Maryland, *Echinocardium*, *Scutella*, *Ophioderma* (?), horizons and locc.; CLARK (39).

e. **Oligocene** :—Vacant.

f. **Eocene** :—Pyrenees, *Maretia*, *Macropneustes*, *Linthia*, *Schizaster*, *Trachyaster*, *Ditremaster*, *Holcopneustes*, *Prenaster*, *Cyclaster*, *Amblypygus*, *Oriolampas*, *Pygorhynchus*, *Echinolampas*, *Conoclypeus*, *Cidaris*, *Rhabdocidaris*, *Leiosoma*, *Micropsis*, *Epiaster*, *Euspatangus*, *Hemiaster*, *Coelopleurus*; GOURDON (102).—Bribir, Dalmatia, *Porocidaris*, *Micropsis*, *Leiopedina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*; DAINELLI (49).—Upper,—near Termini-Imerese, Italy, *Cidaris*, *Porocidaris*; CHECCHIA (37).—Bartonian, Biarritz and Gaas, *Pentacr. didactylus*, *Porocidaris*; DOUVILLÉ (67).—Middle,—Ostrovica-bara in Dalmatia, *Porocidaris*, *Micropsis*, *Leiopedina*, *Schizaster*, *Macropneustes*, *Trachypatagus*, *Euspatangus*; DAINELLI (50).—(? Mid.) Garadimi and Tamaské in Sokoto, *Plesiolampas* & *Hemiaster* n. spp., inferences on p. 303; BATHER (18): *Plesiolampas* suggests Lower rather than Middle (p. 283) but on p. 253 “scheint der Schluss auf Mitteleozän allerdings durchaus berechtigt”; OPPENHEIM (201).—Nummulitic of Gschliefgraben and Traunsee, Austria, *Ech.*; FUGGER (92) p. 339, 345.—Paleocene Denmark, *Ananchytes*, *Bourguetier.*, *Goniaster*, derived from Danian; GRÖNWALL (109) p. 28–31, figg.: same with addition of *Ophiura*; GRÖNWALL (108) p. 428.

Near Adelaide, S. Austral., *Schizaster*, *Macropneustes*; BASEDOW (16).

(iii) MESOZOIC.

a. **General** :—Vacant.

b. **Cretaceous** :—Yorkshire, lists of Echinoderms; STRANGWAYS (266).—Portugal, list of horizons with *Ech.*; MALLADA (181).

1. Upper:—*Hemiaster* various spp. discussed; LAMBERT (147).—Upper Chalk of England, Echinoderm fauna, special notes on spp. of *Micraster*, *Pseudodiadema*, *Cidaris*, *Holaster*; JUKES-BROWNE (137) p. 20, 455, 497 et passim.—*Echinothuria* and other Chalk *Ech.* as drift in Aller Vale gravel pit near Torquay, and in flints at Great Haldon, Devonshire; SALTER (240) p. 19 & figg.—*Podolia*, *Holaster*, *Cidaris*; RADKEVICH (222).—Stage IX, Isengebirge, *Phymosoma*, *Catopygus*, *Nucleolites*, *Caratomus* (p. 18), *Cardiaster* (p. 44), general list (p. 149); ZAHÁLKA (296).—Egypt,—principal locc. and fossils there found, names of *Ech.*; FOURTAU (82): *Nardoa*, *Anthenea*; LORIOU (162).—Madagascar, *Noetlingia*; BOULE (30).—N. S. Wales, *Isocr.*; ETHERIDGE (74).

Danian,—Craniakalk, harbour of Copenhagen, *Bourguetier.*, *Pentacr.*, *Ophiura*, *Goniaster*; GRÖNWALL (108) p. 424.—*Cyathidium* evidence for a gulf-stream; HENNIG (115) p. 55.

Danian and Senonian, Scania, *Ech.* & *Crin.*; TÖRNEBOHM (267) p. 136, 143.—Denmark, common *Ech.*; USSING (275) p. 85.

Senonian,—Yorkshire, zones of *Micraster cortestudinarium* to *Actinocamax quadratus*, *Bourguetier.*, *Marsupites*, *Uintacr.*, *Ophiura*, *Cidaris*, *Salenia*, *Zeuglopleurus*, *Echinocorys*, *Micraster*, *Infulaster*, *Holaster*, *Cardiaster*; ROWE (235).—Near Ste-Mènehould, *Micraster*, *Epiaster*, *Cidaris*; COLLET (44) p. 80.—Pyrenees, *Micraster*, *Coraster*, *Echinocorys*, *Echinoconus*; GOURDON (102): *Micraster*, *Hemiaster*, *Pyrina*, *Clypeolampas*, *Salenia*, *Orthopsis*, *Cyphosoma*; ROUSSEL (232): *Pyrina*, *Hemiaster*, *Salenia*, *Clypeolampas*, *Orthopsis*, *Micraster*

Cyphosoma; ROUSSEL (233).—Near Poltawa, Russia, *Ananchytes*, *Cidaris*, *Holaster*; ARMASCHESKY (14) p. 84, 273.—N. Caucasus, *Ananchytes*; KARAKASH (138).—Nierenthaler Schichten of Gschliefgraben, Austria, *Ech.*; FUGGER (92) p. 339.

Upper Senonian,—Aral Sea, *Cardiaster*, *Cyphosoma*, *Ananchytes*, *Cassidulus*; BERG (24).—Algeria, *Heterolampas*; SAVORNIN (241) p. 150.—Quadraten-Kreide, Lägerndorf, Holstein, *Isocr.* n. sp.; JAEKEL (133).—*Marsupites* zone near Croydon, England,—*Bourquetier*, *Uintacr.*, *Echinocorys*; DIBLEY (62): *Marsupites*, *Uintacr.*, *Echinoconus*; WRIGHT (294): *Cidaris*, *Cyphosoma*, *Echinocorys*, *Galerites*, *Micraster*, *Bourquetier*, *Marsupites*, *Uintacr.*; HINDE (125).—Nanaimo group (? = Niobrara), Vancouver Id. and Salt Spring Id., *Uintacr.* & *Hemiaster* n. sp.; WHITEAVES (285).

Lower Senonian,—Querum bei Braunschweig, *Stereocidaris*; WOLLEMAN (289).—Saxony, *Cardiaster*, *Catopygus*; PETRASCHECK (216).—Silesia, *Cardiaster*; FLEGEL (79).—Priesener-Schichten, E. Bohemia, new locc., *Cidaris*, *Micraster*, *Holaster*, *Hemiaster*; JAHN (134).

Senonian to Turonian,—near Croydon, Eng., *Ech.*, *Ast.*, *Crin.*; HOLMES (127).—Zones of *Holaster planus* and *Micraster cortestudinarium* in N. Lincolnshire, *Micraster*, *Infulaster*, *Holaster*, *Ananchytes*, *Cidaris*; BURNET (33).—Mungo Limest., Cameroons, *Cidaris*, *Hemiaster*?, and a *Galeritid* (p. 223), sandy shale of same age, indeterminable *Spatangids* (p. 234); SOLGER (258).—(Turonian?) Phosphatic Chalk, between Somme and Oise, *Ananchytes*; RABELLE (221).

Turonian,—Yorkshire, zones of *T. gracilis* and *Holaster planus*, *Bourquetier*, *Pentacr.*, *Cidaris*, *Cyphosoma*, *Salenia*, *Echinocorys*, *Hemiaster*, *Holaster*; ROWE (235).—Near Ste-Ménéhould, *Discoidea*, *Glyphosoma*, *Cyphosoma*, *Cidaris*, *Peltastes*, *Goniaster*, *Bourquetier*, *Apiocr.*, *Pentacr.*; COLLET (44) p. 77.

Upper Turonian,—Dresden, *Holaster*, *Phymosoma*; PETRASCHECK (216).—Silesia, *Micraster*; FLEGEL (79).

Turonian or Cenomanian, S. Patagonia, *Cardiaster*; WILCKENS (287).

Cenomanian,—vallée de l'Oison, *Peltastes*; FORTIN (81).—St. Jouin, Normandy, list of *Ech.*; NIBELLE (197).—Near Brunswick, *Holaster*, *Pseudodiadema*, *Discoidea*; WOLLEMAN (290).—Bohemia, *Cidaris*, *Pentacr.*; JAHN (135).

Upper Cenomanian,—near Ste-Ménéhould, *Holaster*, *Cidaris*; COLLET (44) p. 70.—Sinai, *Linthia*; NEWTON (196).

Lower Cenomanian,—“Gaize,” Ste-Ménéhould, *Hemiaster*, *Epiaster*, *Holaster*, COLLET (44) p. 44.

Albian,—Algeria, *Epiaster*; SAVORNIN (241) p. 141.—N. Caucasus, *Pseudodiadema*; KARAKASH (138).

1 & 2. Cenomanian and Aptian, Switzerland, *Hemiaster*, *Heteraster*; SCHARDT (244).

2. Lower:—W. Swiss Jura, horizons and locc., lists of *Ech.*; BAUMBERGER (19).—Nauplia, Greece, remains of *Ech.*; CAYEUX (34) p. 96, 97.—Madagascar, *Epiaster*, *Peltastes*; DOUVILLÉ (68) p. 214.

Aptian,—Upper Gault, Barnwell near Cambridge, *Cidaris*, *Pentacr.*; FEARNSIDES (76).

Neocomian,—Isère, *Pentacr.* n. spp.; LORIOI (162).—Greensand, Whitehead near Belfast, *Ech.*; WELCH (282).—Barremian, Bulgaria, *Peltastes*, *Echinobrissus*, *Cidaris*, *Pseudocidaris*, *Psammechinus*; ZLATARSKĪ (299).—Jorat, Bernese Jura, Hauterivian *Goniaster*, *Toxaster*, *Holaster* (p. 15), Berriasian *Toxaster*, *Phyllobrissus*; BAUMBERGER (20) p. 14.

Comanche series, Washita group, Texas, *Diplopodia*, *Pyrina*, *Holcetypus*, *Epiaster*; RICHARDSON (227) p. 48.—Shafter beds, Shafter, Texas, *Toxaster*, *Diadema*, *Holcetypus*; UDDEN (273) p. 35, 37.—Honduras, *Enallaster*, *Epiaster*, *Diplopodia*, *Pseudosalenia*, *Cidaris*; LORIOLE (162).

c. **Jurassic**:—Yorkshire, lists of Echinoderms; STRANGWAYS (266).

1. Upper:—Madagascar, *Apiocr.*; DOUVILLÉ (68) p. 213.

Portlandian (= Tithonian),—Aquitaine, *Hemicidaris*, *Echinobrissus*, *Acrosalenia*; GLANGEAUD (101) p. 57.—Solagna in Vicentine, *Metaporhinus*, *Collyrites*, *Hemicidaris*, *Phyllocr.*; DEL CAMPANA (55).

Kimmeridgian, —near Macon, *Pseudodiadema*, *Pygurus*, *Collyrites*; LISSAJOUS (153).—Nattheim-Wettinger beds, remains of near Basle, *Cidaris*, *Pentacr.*, *Apiocr.*, *Hemicidaris*; ROLLIER (230).—Solenhofen Plattenkalk, list of *Ech.*, *Ast.*, *Oph.*, *Crin.*, *Saccocoma* n. sp.; WALTHER (291).

Sequanian, —Upper, —Astartian near Macon, *Pseudodiadema*, *Glypticus*, *Stomechinus*; LISSAJOUS (153).

1 & 2. Kimmeridgian and Oxfordian, Poland, *Apiocrinus*, *Pentacrinus*, *Sphaeraster*, *Cidaris*, *Rhabdocidaris*, *Stomechinus*, *Hyboclypeus*, *Echinobrissus*, *Collyrites*, *Dysaster*; SIEMIRADZKI (255).

2. Middle:—Rauracian, Upware, Cambridgesh. *Desorella*; WOODS (293).—Lower Rauracian, Le Preslot, Hte-Saone, *Cidaris*, *Diplocidaris*, *Hemicidaris*, *Diplopodia*, *Pedina*, *Apiocr.*, *Millericr.*, *Eugeniocr.*, *Pentacr.*; MAIRE (178).—Oxfordian, Deux-Sèvres, *Dysaster*, *Stomechinus*, *Cidaris*; WELSCH (283).—Near Macon, —Rauracian, *Cidaris*, *Pseudodiadema*, *Diplopodia*, *Holcetypus*, *Collyrites*, *Dysaster*; Oxfordian, *Pseudodiadema*, *Diplopodia*, *Magnosia*, *Holcetypus*, *Echinobrissus*, *Collyrites*, *Dysaster*; Callovian, *Pseudodiadema*, *Diplopodia*, *Cidaropsis*, *Pedina*, *Holcetypus*, *Hyboclypeus*, *Echinobrissus*, *Pygurus*, *Collyrites*, *Dysaster*; LISSAJOUS (153).—Zone of *Parkinsonia parkinsoni* near Neuchatel, *Clypeus*, *Collyrites*; SCHARDT (243) p. 257.

3. Lower:—Bathonian, Neuchatel, Vaud, and Ain, *Clypeus*, *Holcetypus*, *Collyrites*, *Acrosalenia*, *Pseudodiadema*; CLERC (42).—Bathonian and Vesulian near Neuchatel, *Pentacrinitid* limestone 30 m. and 15 m.; SCHARDT (243) p. 304.—Hauptrogenstein, Liestal near Basle, *Isocr.*, *Ophiomusium*; LEUTHARDT (152).—Lower Bathonian?, Greenland, *Pentacr.* [i.e. *Isocr.*]; MADSEN (176).—Near Macon, —Bathonian, *Pseudodiadema*, *Hemipedina*, *Pedina*, *Echinobrissus*, *Pygurus*, *Collyrites*; Bajocian, *Pseudodiadema*, *Hemipedina*, *Magnosia*, *Pedina*, *Pseudopedina*, *Stomechinus*, *Holcetypus*, *Hyboclypeus*, *Galeropygus*, *Pyrina*, *Echinobrissus*, *Clypeus*, *Collyrites*; LISSAJOUS (153).—“Zone à *Lioceras concavum* du Mont d'Or Lyonnais,” *Cidaris*, *Pentacr.*; RICHE (228).—Bajocian, Madagascar, *Stomechinus*; DOUVILLÉ (68) p. 215.

d. **Lias**:—near Estagel, France, *Crin.*; MENGEL (188) p. 266.

Middle, or Pliensbachian (= Charmouthian):—Seeberg, Gotha, *Cidaris*, *Pentacr.*, *Cotylederma*; SCHAEFER (242).—Bulgaria, *Pentacr.*; ZLATARSKI (299).—Zone of *Amm. costatus*, Freistadt in Moravia, *Pseudodiadema*, *Balanocr.*, *Pentacr.*; RZEHA (238) p. 148: *Balanocr.* (239).—Domerian, W. Lombardy, *Millericr.*, *Pentacr.*, *Cidaris*; MARIANI (183) p. 153, 154.

Lower, or Sinemurian:—Seeberg, Gotha, *Asterias*, *Pentacr.*; SCHAEFER (242).—Mt. Campo dei Fiori, Lombardy, *Pentacr.*; MARIANI (183) p. 138.

Rhaetic:—Redland, Bristol, *Cidaris*, *Pentacr.*; SHORT (254).—Hettangian, —of Vendée, n. spp. of *Acrosalenia*, *Pseudodiadema*, *Hessotiana*, *Palaeopedina*, in coll. Chartron; LAMBERT (148): near Macon, *Diademopsis*; LISSAJOUS (153).

- e. **Trias**:—Bulgaria, *Encrinus*; ZLATARSKĪ (299).
 Upper,—Bear Id., Arctic, *Pentacr.*, *Ophioderma*, *Cidaris*; BOEHM (28).—Of Kosticia, Montenegro, *Encrinus*; DEL CAMPANA (56).—Arlbergsschichten near Bludenz, *Encrinus*; FIEDLER (77).
 Middle,—Supposed Lias of Theben-Neudorf, Austria, *Encrinus*; TOULA (269).—Upper Muschelkalk, Seeberg, Gotha, *Cidaris*, *Encrinus*; LANGENHAN (150).—Ditto and Ladinian near Sarajevo, *Encr.*, *Cidaris* (p. 576, 579, 645, 703), Lower, *Dadocr.* (p. 539); KITTL (141).

(iv) PALAEOZOIC.

- a. **General**:—Lower Palaeozoic *Crin.* Australia, historical summary; ETHERIDGE (75).
 b. **Permian**:—Cibolo limest., Shafter, Texas, *Archaeocidaris*, & *Crin.* UDDEN (273) p. 20–22, large *Crin.* columnals fig. 4.
 c. **Permo-Carboniferous**:—Irwin R., W. Australia, columnals of (?) *Actinocrinidae*; CHAPMAN (36) p. 323.
 d. **Upper Carboniferous**:—Sumatra, *Poteriocr.* and *Crin.* indett.; VOLZ (280) p. 108.—Lower Coal Measures, Kansas, various horizons and locc., *Archaeocidaris* (p. 464, 467, 470, 472), *Erisocr.* (p. 467); BEEDE & ROGERS (21).
 e. **Lower Carboniferous**:—Dumfries, *Palaechinus*, *Archaeocidaris*, *Poteriocr.*, *Hydreionocr.*, *Forbesocr.*; PEACH (209).—Near Sarajevo, *Poteriocr.*? at Prača (p. 666, 681), *Bellerophon* beds, *Archaeocidaris*, *Eocidaris*? (p. 684); KITTL (141).—Yoredale beds, Yorkshire, *Archaeocidaris* (p. 186, 188), Carbonif. Limest., Newbrough, *Archaeocidaris*, *Poteriocr.* (p. 192); HIND (123).—Visean, Culm, near Giessen, *Archaeocidaris* n. sp.; PARKINSON (206).—Lower Visean, Vla Belgium, —Denée (Namur) *Scaphiocr.*, *Taeniaster*, *Palaechinus*, *Rhoechinus*, *Oligoporus*, *Archaeocidaris*; FRAIPONT (85): Pair (Clavier), *Platycr.*; DESTINEZ (59) p. M 145.
 St Louis Limest., Iowa, *Pentremites*, *Archaeocidaris*; UDDEN (272) p. 380, 390.—Indiana, —Warsaw Limest., *Batocr.* n. spp. (103), *Batocr.*, *Tricoelocr.*, *Pentremites* (105), Keokuk Limest., *Actinocr.* n. var. (105); ROWLEY in GREENE.—Hueco formation, Texas, *Archaeocidaris*; RICHARDSON (227) p. 37.
 f. **Devonian**:—Upper,—Psammites du Condroz, Belgium, list of Echinoderms with locc.; DESTINEZ (60).—? Lower,—Epphaven, Cornwall, *Ophiurina*?; BATHER in FOX (84) p. 752.—Lower,—Siegener Schichten, Westerwald, *Crin.* cf. *Poteriocr. patulus*; DREVERMANN (71) p. 281.
 N. Amer. esp. Michigan, n. spp. of *Tripleurocr.* n. g., *Megistocr.*, *Tylocr.* n. g., & *Dolatocr.*, also spp. of *Stereocr.*, *Gennaeocr.*, *Gilbertocr.*, *Vasocr.*, *Taxocr.*, *Arthracantha*; WOOD (291).—Thunder Bay series, Michigan, *Dolatocr.*, *Megistocr.*, *Codaster*, *Pentremites*, *Nucleocr.*; GRABAU (102 A) p. 193–196.—Ontario Co., N. Y., lists of *Crin.* and *Blast.* from all horizons; CLARKE & LUTHER (40).—Upper,—Tully Limest. W. New York, *Pentremites*; LOOMIS (161) p. 907. Hamilton Group, Indiana, *Megistocr.*, *Stereocr.*, *Gennaeocr.* n. sp. & *Botryocr.* n. sp., first occurrence of last genus in America [but see BATHER *Crin.* Gotland, p. 103] (104), ditto Clark co., *Nucleocr.* (105); Upper Helderberg, Falls of Ohio, *Arachnocr.*, *Megistocr.* (104), ditto, *Dolatocr.* (105); ROWLEY in GREENE.—Lower Devonian, U. S. A., *Anomalocystis*, *Lepadocr.*, *Camurocr.*; SCHUCHERT (249).
 g. **Silurian**:—source of R. d'Os, Pyrenees, *Scyphocr.*; ROUSSEL (233) p. 16.

Upper,—Ekwan R., N. E. Canada, *Crin.* columnals; DOWLING (70) p. 17, 39.—Upper,—N. Amer., *Apiocystis*, *Lepadocr.*, *Hallicystis*, *Tetracystis* n. g., *Jaekelocystis*, *Pseudocr.*, *Trimerocystis* n. g., *Callocystis*, *Coelocystis*, *Sphaerocystis*, *Camerocr.*; SCHUCHERT (249).—Missouri,—Lower Helderberg, Delthyris Limest., *Stribalocystis*? *Troostocr.*?, and *Melocr.* n. sp.: Clinton group, n. spp. of *Calceocr.*, *Glyptocr.*, *Gissocr.*? and *Lampterocr.*?; Niagaran, *Pisocr.*, *Cyathocr.*?, *Lecanocr.*, *Cordylocr.*?, all n. spp., and *Stribalocystis*; ROWLEY (236).—Osgood and Laurel Limestones, various locc. Indiana, *Crin.*, *Cyst.*; FOERSTE (80) p. 341, 342.

Yass, N. S. W., *Pisocr.* n. sp.; ETHERIDGE (75).

h. Ordovician:—Upper,—Chasmops Lst., Kinnekulle, *Echinosphaera* (p. 56).—Middle,—Orthoceras Lst., *ibid.*, *Sphaeronis* (p. 47); HOLM (126).—D₂ near Prag, *Lobolithus*? FRIČ (88).

Trenton Limestone, Ottawa, *Stenaster*, *Agelacr.*, *Glyptocr.*, *Rhodocr.*, *Archaeocr.*, *Periglyptocr.*, *Dendrocr.*, *Cleiochr.*, *Heterocr.*, *Lichenocr.*, *Iocr.* (pp. 61–69), Black River Formation, *ibid.*, *Glyptocr.* (p. 71); AMI (7).—Chazy Formation, Ottawa River, *Malocystis*, *Glyptocystis*, *Palaeocystis*, *Bolboporites*; AMI (8) p. 140.

IV. SYSTEMATIC†.

(A.)—ECHINODERMA IN GENERAL.

Echinoderma thus classified: Sub-phylum *Eleutherozoa*, with Classes 1. *Asteridia*, 2. *Ophiuridia*, 3. *Echinidia*, 4. *Holothuridia*; Sub-phylum *Pelmatozoa*, with Classes 1. *Crinoidia*, 2. *Blastoidia*, 3. *Cystoidia*; DELAGE (54).—Recent Echinoderms divided into “1. Holothurien (*a*) Aspidochiroten (*b*) Dentrechiroten; 2. Crinoiden; 3. Echiniden; 4. Anthodiaten (*a*) Asteriden (*b*) Ophiuren”; HALLER (111A).

(B.)—HOLOTHURIOIDEA.

Holothuridia divided into Orders 1. *Actinopodida* with Suborders *Dendrochiro-*, *Aspidochiro-*, and *Molpadidae*, 2. *Paractinopodida*; DELAGE (54).

Acanthotrochus; DELAGE (54) p. 338, fig.

Achlyonice; DELAGE (54) p. 329.

Actinocucumis; DELAGE (54) p. 320, fig.

Actinopodida defined; DELAGE (54) p. 318.

Allantis; DELAGE (54) p. 324, fig.

Amphigynas; DELAGE (54) p. 327.

Ananus; DELAGE (54) p. 323.

Anapta; DELAGE (54) p. 337.

Ankyroderma; DELAGE (54) p. 332, figg. *A. musculus*; LO BIANCO (154) p. 61, pl. xl.

† A dagger prefixed to the name of a species indicates that it is fossil; prefixed to the name of the author, it denotes that the reference is to the species in a fossil state; prefixed to the name of a genus, it indicates that all species in the same paragraph are fossil, and the † is therefore not repeated before each name. The abbreviations *l. c.* and *op. cit.* refer only to the place or work quoted immediately before. *Ibid.* refers only to locality or, in the case of fossils, to horizon and locality.

A name and reference quoted without further statement [e.g. *Ankyroderma musculus*; LO BIANCO (154) p. 61] indicate that the quoted author's statement refers to a question of no systematic importance. Further information can usually be gleaned from the cross-references under TITLES.

†*Annulina*; DELAGE (54) p. 337.

Apodogaster; DELAGE (54) p. 328.

Aspidochirotidae defined as Suborder (p. 319), with Famm. *Holothuri*-, *Synallact*-, *Elasipod*-, & *Pelagothuri*-inae (p. 322); DELAGE (54).

Bathyherpystikes; DELAGE (54) p. 323.

Bathyplores; DELAGE (54) p. 323.

Benthodytes; DELAGE (54) p. 328.

Benthogone; DELAGE (54) p. 326.

Benthothuria; DELAGE (54) p. 323.

Capheira; DELAGE (54) p. 327, figg.

Caudina; DELAGE (54) p. 331, figg. *C. arenata*; WEYSSE (284) p. 104, fig.: descr., range; CLARK (38) p. 569, pls. xi, xiii. *C. pigmentosa*, Tierra del Fuego, & *C. rugosa*, Picton Id., **n. spp.**; PERRIER (212) p. 16.

Chiridota; DELAGE (54) p. 337, figg. *C. contorta*; LUDWIG (164) p. 690: PERRIER (212) p. 17. *C. marenzelleri* **n. sp.**, Magellan Str.; PERRIER (214). *C. pisanii*; PERRIER (212) p. 17. *C. rotifera*; LUDWIG (164) p. 690.

Chiridotinae, Sub-fam.; DELAGE (54) p. 337.

Colochirus; DELAGE (54) p. 319: doubted, vide *Cucumaria*; PERRIER (213) p. 370. *C. montagui*; MALARD (179) p. 195.

Cucumaria, descr.; DELAGE (54) p. 319, figg. *C. brunnea*; MAR. BIOL. ASS. (184) p. 206. *C. convergens*, vide sub *Psolidium*. *C. crocea* (p. 687), *C. curata* (p. 688); LUDWIG (164). *C. filholi*, perhaps only var. of *C. alba*; PERRIER (213) p. 367. *C. frondosa*; DEKHUYZEN (51): growth stages; MICHAÏLOVSKIJ (192) p. 159: descr., range, that recorded from Florida reef probably *C. japonica*; CLARK (38) p. 566, pls. xi, xii. *C. glacialis*; LUDWIG (164) p. 688: MICHAÏLOVSKIJ (192) p. 159. *C. hyndmani*; MAR. BIOL. ASS. (184) p. 206. *C. laevigata*; LUDWIG (164) p. 688: PERRIER (212) p. 14. *C. lefevrei*; PACE (205). *C. leonina*, sclerites; PERRIER (212) p. 14. *C. montagui* Flem. non Norman; PACE (205). *C. normani* **n. sp.**, Plymouth, 10 fm., incl. 'Holothuria pentactes var.' Montagu 1808 & '*C. montagui*' Norm. 1893, specimen A.; PACE (205) p. 309: MAR. BIOL. ASS. (184) p. 206. *C. ocnoides* redescri.; PERRIER (213). *C. parva*; LUDWIG (164) p. 688: PERRIER (212) p. 14. *C. pentactes*; WOODCOCK (292): Linne's sp. indeterminable, name rejected; PACE (205). *C. planci*; WOODCOCK (292): NOBRE (199). *C. pulcherrima*, descr., range; CLARK (38) p. 567, pls. xi, xii. *C. saxicola*, MAR. BIOL. ASS. (184) p. 206: incl. '*C. montagui*' Norm. 1893, specimens B, C; PACE (205). *C. tabulifera* **n. sp.**, Franklin B., Punta Arenas; PERRIER (212) p. 14.

Deima described; DELAGE (54) p. 324, figg.

Deimatinae, Subfam.; DELAGE (54) p. 325.

Dendrochirotidae defined as Suborder, with Famm. *Dendrochirot*- & *Rhopalodin*-inae; DELAGE (54) p. 319.

Dendrochirotinae, defined with list of genera; DELAGE (54) p. 319.

Elasipodinae defined with list of genera; DELAGE (54) p. 324.

Elpidia; DELAGE (54) p. 328. *E. glacialis*, minor variations; MICHAÏLOVSKIJ (192) p. 158, 184.

Elpidiidae, Subfam.; DELAGE (54) p. 328.

Enypniastes; DELAGE (54) p. 329.

Euphronides; DELAGE (54) p. 328, figg.

Eupyrgus; DELAGE (54) p. 331. *E. scaber*; MICHAÏLOVSKIJ (192) p. 161.

Gastrothuria; DELAGE (54) p. 323.

Haplodactyla; DELAGE (54) p. 331, fig.

†*Hemisphaerantus*; DELAGE (54) p. 337.

Holothuria descr.; DELAGE (54) p. 322. *Holothuria* [sic] sp.; NOBRE (198) p. 56. *H. atra*; GARDINER (95) p. 339. *H. forskali*; WOOD-

- COCK (292). *H. maculata*; GARDINER (95) p. 339, 392. *H. nigra*; MAR. BIOL. ASS. (184) p. 207; ROY. COLL. SURGEONS (237) p. 5. *H. (?) patagonica* n. sp., Santa Cruz, Patagonia; PERRIER (212) p. 13. *H. poli*; POLARA (220). *H. tubulosa*; l. c.: CLERC (41): HENRI (116) p. 17-20; LANZI (151).
- Holothuriinae* defined with list of genera; DELAGE (54) p. 322.
- Hydaemon*; DELAGE (54) p. 326, figg.
- Irpa*; DELAGE (54) p. 328.
- Kolga*; DELAGE (54) p. 329, figg.
- Labidodemas*; DELAGE (54) p. 322.
- Labidoplax*; DELAGE (54) p. 337.
- Laetmogone*; DELAGE (54) p. 326, figg.
- Laetmophasma*; DELAGE (54) p. 326.
- Ludwigia* Reiffen; DELAGE (54) p. 320: rejected; PERRIER (213) p. 370.
- Meseres*; DELAGE (54) p. 323.
- Mesothuria*; DELAGE (54) p. 324. *M. interstitialis*; KIAER (140).
- Molpadia* descr.; DELAGE (54) p. 331.
- Molpadiidae* defined as Suborder; DELAGE (54) p. 319.
- Muelleria*; DELAGE (54) p. 323. *M. lecanora*; DOFLEIN (64) p. 126.
- Myriotrochinae*, Subfam.; DELAGE (54) p. 337.
- Myriotrochus*; op. cit. p. 338, figg. *M. rinkii*; MICHAILOVSKIJ (192) p. 162.
- Oneirophanta*; DELAGE (54) p. 325, figg.
- Orcula*; DELAGE (54) p. 320.
- Orphnurgus*; DELAGE (54) p. 326.
- Paelopatides*; DELAGE (54) p. 323.
- Pannychia*; DELAGE (54) p. 326.
- Parelpidia*; DELAGE (54) p. 328.
- Paroriza*; DELAGE (54) p. 323.
- Pelagothuria* descr.; DELAGE (54) p. 329, figg.
- Pelagothuriinae* defined with list of genera; DELAGE (54) p. 329.
- Peniagone* descr.; DELAGE (54) p. 328.
- Pentadactyla*; DELAGE (54) p. 322.
- Phyllophorus*; DELAGE (54) p. 320, fig. *P. drummondi*; MALARD (179) p. 195; MICHAILOVSKIJ (192) p. 160; ÖSTERGREN (203). *P. urna*; LUDWIG (164) p. 689.
- †*Priscopodatus*; DELAGE (54) p. 323.
- Protankyra*; DELAGE (54) p. 337.
- Pseudocucumis*; DELAGE (54) p. 320. *P. mixta*, ÖSTERGREN (203).
- Pseudopsolus*; DELAGE (54) p. 321.
- Pseudostichopus*; DELAGE (54) p. 324.
- Psolidium*; DELAGE (54) p. 320. *P. convergens* (Herouard sub *Cucumaria*); *P. dorsipes*; PERRIER (212) p. 15. *P. nutriens*; LUDWIG (164) p. 689.
- Psolus*; DELAGE (54) p. 320. *P. antarcticus*; LUDWIG (164) p. 689: distinct from *P. squamatus*; PERRIER (212) p. 15. *P. ephippifer*; LUDWIG (164) p. 689. *P. fabricii*; †MADSEN (177) p. 530; MICHAILOVSKIJ (192) p. 160. *P. phantapus*; l. c. *P. squamatus* var.; PERRIER (212) p. 15. *P. valvatus* n. sp., Trondhjem fjord, 40-100 m.; ÖSTERGREN (203).
- Psycheotrepes*; DELAGE (54) p. 328.
- Psychropotes* descr.; DELAGE (54) p. 327, fig.
- Psychropotidae* Subfam.; DELAGE (54) p. 327.
- Rhabdomolgus*, probably young *Synapta*; DELAGE (54) p. 337.
- Rhipidothuria*; DELAGE (54) p. 328.
- Rhopalodina* descr.; DELAGE (54) p. 321.
- Rhopalodininae*, defined with list of genera; DELAGE (54) p. 321.
- Scotoanassa*; DELAGE (54) p. 329, figg.
- Scotodeima*; DELAGE (54) p. 326.
- Scotoplanes*; DELAGE (54) p. 328, fig.

Semperia drumondii Hérouard ; PACE (205).

Stichopus ; DELAGE (54) p. 322, figg. *S. chloronotus* ; GARDINER (95) p. 339.

S. regalis ; BERTRAND (27) : DUBOIS (72) : HENRI (116) p. 19. *S. tremulus* ; KIAER (140).

Synallactes descr. ; DELAGE (54) p. 323. *S. moseleyi*, not a *Bathyplores* ; PERRIER (212) p. 13.

Synallactinae, defined with list of genera ; DELAGE (54) p. 323.

Synapta descr. ; DELAGE (54) p. 332, figg. : *auricularia* ; LO BIANCO (154) p. 55, pl. xxxiv. *S. digitata* ; MAR. BIOL. ASS. (184) p. 206. *S. inhaerens* ; I. C. : MALARD (180) : descr., range ; CLARK (38) p. 571, pls. xi, xiv. *S. cf. ooplax* ; GARDINER (95) p. 338. *S. roseola*, descr., range ; CLARK (38) p. 571, pls. xi, xiv. *S. vivipara* ; LUDWIG (164) p. 689.

Synaptinae Subfam. ; DELAGE (54) p. 337.

Theelia ; DELAGE (54) p. 320.

Thyone ; DELAGE (54) p. 320, figg. *T. briareus*, descr., range, habits ; CLARK (38) p. 567, pls. xi, xiii. *T. fusus* ; MALARD (179) p. 195 : MAR. BIOL. ASS. (184) p. 206. *T. lechleri*, sclerites ; PERRIER (212) p. 15. *T. raphanus* ; MALARD (179) p. 195. *T. rubra* ; LUDWIG (164) p. 689. *T. scabra*, descr., range ; CLARK (38) p. 568, pls. xi, xiii. *T. spectabilis*, calcareous ring ; PERRIER (212) p. 15. *T. unisemita*, descr., range ; CLARK (38) p. 569, pls. xi, xii.

Thionepsolus [sic. err. pro *Thyonepsolus*] ; DELAGE (54) p. 320.

Trochoderma ; DELAGE (54) p. 337. *T. elegans* ; MICHAÏLOVSKIJ (191).

Trochodota ; DELAGE (54) p. 337. *T. purpurea* ; PERRIER (212) p. 17.

Trochostoma ; DELAGE (54) p. 332, fig. *T. boreale* ; MICHAÏLOVSKIJ (192) p. 161. *T. oöliticum*, incl. *T. boreale* but not *T. arcticum* or *T. turgidum*, descr., range ; CLARK (38) p. 570, pls. xi, xiii.

Ypsilothuria ; DELAGE (54) p. 321.

(C).—ECHINOIDEA.

Classification of *Ech.*, phylogenetic, causes of change ; DOUVILLÉ (66) p. 72. *Echinidia* divided into Subclass 1. *Regulariae* with Orders *Palechinida*, *Echinothurida*, *Cidarida*, & *Diademida*, 2. *Irregulariae* with Orders *Holactypida*, *Clypeastrida*, & *Spatangida* ; DELAGE (54). Diagnoses of Orders, Families, and Genera, with lists of spp. and distrib., continuing *Regularia* from *Temnopleuridae*, and all *Irregularia* ; MEISSNER in HAMANN (112) [for scheme of classification down to Sub-famm. see Introduction to last year's Record, p. 6]. *Echinoidea Regularia*, classifications of Pomel, Duncan, Lambert, Gregory, and Bell discussed, following proposed : Order I *Entobranchiata*, with one Suborder, *Cidaroida*, Famm. *Archaeocidaridae* & *Cidaridae* ; Order II, *Ectobranchiata* with Suborders 1, *Streptosomata*, Famm. *Lepidocentridae*, *Echinothuridae*, 2, *Stereosomata*, Tribus i *Diademina*, Famm. *Aspidodiademat*, *Diademat*, *Pseudodiademat*, *Micropyg*, *Pedin*, *Hemicidaridae*, Tribus ii *Salenina*, Fam. *Salenidae*, Tribus iii, *Phymosomina*, Famm. *Arbaci*, *Phymosomat*, ? *Stomechinidae*, Tribus iv, *Echinina*, Famm. *Stomopneust*, *Temnopleur*, *Echin*, *Toxopneust*, *Echinometridae* ; MORTENSEN (195) p. 47 [for smaller divisions see under Fam. names ; N.B. that Mortensen's Tribus are Superfamilies, whereas Lambert's are Sub-families]. Palaeozoic *Ech.* classified and revised, see further sub *Palaeëchinoidea* ; KLEM (142). Key to spp. of *Ech.* in East Indian Archipelago, see list III, A, iii ; DE MEIJERE (57) p. 220-237.

Taxonomic value of the following characters :—Pedicellariae, Mortensen's classification discussed by DE MEIJERE (57) p. 248, ridiculed by

- AGASSIZ (3) passim. Crenulation of tubercles, slight value; DE MEIJERE (57) p. 24. Radioles, in *Clypeastroida*; op. cit. p. 104. Fascioles, not safe; BATHER (18) p. 298: doubtful; DE MEIJERE (57) p. 165, 241: Subanal, in Spatangoids; AGASSIZ (3) p. 179.
- Abatus cuvernosus*, specimen 1.6 mm. long descr.; AGASSIZ (3) p. 211, pl. xcix.
- Acanthocidaris*; DELAGE (54) p. 227.
- Aceste* diagnosis; MEISSNER in HAMANN (112) p. 1393: descr.; DELAGE (54) p. 271, fig. *A. bellidifera*, radioles; DE MEIJERE (57) p. 196, pl. xxiii.
- †*Acrocidaris granulosa*, not this genus; LAMBERT in Review of LISSAJOUS (153).
- †*Acrosalenia*; DELAGE (54) p. 231. *A. chartroni* n. sp., Hettangian of Vendée; LAMBERT (148) p. 538, pl. xviii. *A. decorata*; STRANGWAYS (266) p. 40, 49. *A. koenighi* [sic]; GLANGEAUD (101) p. 33. *A. spinosa*; CLERC (42) p. 99: apical system, ambulacra; AGASSIZ (3) p. 37, 41, & fig.
- Ærope*; DELAGE (54) p. 272: diagnosis; MEISSNER in HAMANN (112) p. 1393: retained among *Brissina*, but with ananchytid affinities; AGASSIZ (3) p. 197. *A. fulva* descr. and compared with *A. rostrata*; op. cit. p. 194, pls. lv, lxi, lxii: radioles, pedicellariae; DE MEIJERE (57) p. 195, pl. xxiii.
- Æropidae* discussed; DE MEIJERE (57) p. 243.
- Agassizia*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1392: apical system (p. 173, f. 287, pl. cviii), *A. excentrica* compared with *Spatagoderma* (p. 198, figg., pl. cviii); AGASSIZ (3).
- Alexandria* discussed; DE MEIJERE (57) p. 136: diagnosis; MEISSNER in HAMANN (112) p. 1383.
- Amblypneustes*; DELAGE (54) p. 241: distinguished from *Microcyphus* & *Holopneustes* (p. 102), *A. formosus*, pedicellariae, radioles, &c. (p. 103, pl. ii, vi, vii); MORTENSEN (195). *A. griseus*; op. cit. p. 105: great variation, probably incl. *A. formosus*, *pallidus*, & *ovum*; HALL (111) p. 72. *A. grossularia*, holotype examined, pedicellariae &c. (p. 105, pl. vi, vii), *A. ovum*, pedicellariae &c., distinguished from *A. formosus* and from various spp. wrongly referred here by Bell, Ramsay, et al. (p. 103, pl. vii); MORTENSEN (195): vide etiam sub *Microcyphus zigzag*. *A. pallidus*? pedicellariae, radioles, &c. (p. 104, pl. ii, vi, vii). *A. vegae*, syn. of *Mespilia globulus* (p. 106); op. cit.
- †*Amblypygus dilatatus*; GOURDON (102) p. 221.
- Amphidetus cordatus*; +BELLINI (23) p. 5: KIAER (140): MALARD (179) p. 194.
- †*Amphiope*:—*A.* sp. ind. fragments (p. 175, pl. iv), *A. bioculata*, specimen figd. Quenstedt, 1875, descr. incl. *A. bisperforata* Parkinson non Leske, distrib. (p. 173); SCHUETZE (251).
- Amphipneustes*; DELAGE (54) p. 273: discussed; AGASSIZ (3) p. 178: DE MEIJERE (57) p. 240: diagnosis; MEISSNER in HAMANN (112) p. 1388.
- †*Ananchites* (vel *Ananchytes*), vide *Echinocorys*.
- Ananchytinae*; DELAGE (54) p. 266.
- Anochanus* diagnosis; MEISSNER in HAMANN (112) p. 1386. *A. sinensis*; LUDWIG (164) p. 691.
- Anomalanthus* diagnosis; MEISSNER in HAMANN (112) p. 1382.
- Anthechinus roseus*; MORTENSEN (195) p. 98.
- Anthocidaris*; DELAGE (54) p. 245: diagnosis; MEISSNER in HAMANN (112) p. 1374.
- Aphanopora*; DELAGE (54) p. 264: diagnosis; MEISSNER in HAMANN (112) p. 1386: ditto, & *A. echinobrissoides* descr.; DE MEIJERE (57) p. 142, pls. vi, xix.
- †*Aplodiadema* validity questioned; LISSAJOUS (153) p. 114.

†*Arachniopleurus*; MORTENSEN (195) p. 112.

Arachnoides diagnosis; MEISSNER in HAMANN (112) p. 1382: name rejected, should be *Echinodiscus*; FOURTAU (83) p. 424. *A. placenta*; DE MEIJERE (57) p. 137, pl. xix: MARTENS (185).

Araeosoma descr.; DELAGE (54) p. 223, fig.: criticised; AGASSIZ (3) p. 83. *A. ousteni* (corr. *oustoni*) **n. sp.**, Sagami B., 50 fm.; MORTENSEN (194) p. 82, pl. ii, v. *A. tessellatum*, radioles, pedicellariae, spicules; DE MEIJERE (57) p. 35, 250, pl. xiii: ? juv. = *Asthenosoma gracile* A. Ag. Challenger Stat. 219; MORTENSEN (194) p. 86, pl. iv.

Arbacia; DELAGE (54) p. 237: versus *Echinocidaris*, discussed; LORIOU (162) p. 13: development of coronal plates; AGASSIZ (3) p. 54, pls. liii, liv: experiments on sperm-ovum; LYON (171). *A. dufresnii*, incl. *A. schytei* & *A. alternans*, descr., with young; LORIOU (162) p. 8, pl. ii. *A. nigra*; DE MEIJERE (57) p. 207. *A. punctata*, pluteus; WEYSSE (284) p. 100, fig. *A. punctulata*, descr., range; CLARK (38) p. 563, pl. vii. *A. pustulosa*; DI MAURO (63). *A.* [? *pustulosa*?]; JANSSENS (136).

Arbaciinae defined with list of genera; DELAGE (54) p. 237.

Arbacia diagnosis; MEISSNER in HAMANN (112) p. 1367. *L. forbesiana* referred to *Prionechinus* (q. v.); DE MEIJERE (57) p. 71.

†*Archaeocidaridae* defined; KLEM (142) p. 45.

†*Archaeocidaris*; DELAGE (54) p. 218: defined, synn. *Echinocrinus*, *Palaeocidaris*; KLEM (142) p. 45. *A.* sp.; BEEDE & ROGERS (21): HIND (123) pp. 186, 188: ?; KITTL (141) p. 685, pl. xxii: Etheridge 1892, Julien 1896, Meek 1859, & Stacke 1877; KLEM (142) p. 65. *A. aculeatus* (p. 45), *A. agassizi* (p. 46), & *A. biangulatus* (p. 47) descr.; KLEM (142). *A.* cf. *biangulata*; RICHARDSON (227) p. 37. *A. cratis* (p. 47), *A. dininni*, & *A. edgarensis* (p. 48) descr., *A. glabrispina* (p. 62), *A. gracilis* descr. (p. 49), *A. grueneri* (p. 62); KLEM (142). *A. harteiana* vide *Perischodonus hartei*. *A. illinoisensis* (p. 49) & *A. keokuk* (p. 50) descr.; KLEM (142). *A. keyserlingi*, radioles; KITTL (141) p. 684. *A. konincki*; KLEM (142) p. 63. *A. ladina*; l. c.: radioles; KITTL (141) p. 684. *A. legrandensis* (p. 50), *A. longispinus*, *A. megastylus* (p. 51), *A. mucronatus* (52), *A. neri* [sic], incl. *Cidaris protei* (p. 52), *A. newberryi* (p. 53), *A. norwoodi*, *A. ornatus* (p. 54), all descr., *A. ourayensis*, *A. priscus* (p. 63); KLEM (142). *A. regimontana* **n. sp.**, Visean of Königsberg near Giessen, interambulacral; PARKINSON (206) p. 365, pl. xv. *A. rossicus* descr. (p. 55), var. *schellwieni*, *A. scotica* Smith [! i.e. J. Young], *A.* (?) *selwyni* (p. 64), *A. shumardanus* descr. (p. 56), *A. spinoclavatus* descr. (p. 57), *A. tennesseae*, *A. tirolensis* (p. 64), *A. trautscholdi* (p. 65), *A. triplex* descr. (p. 57), *A. triserialis* & *A. triserratus* descr. (p. 58), *A. tridifer* descr. (p. 59); KLEM (142). *A. urei*; FRAIPONT (85) p. 11, pl. i: HIND (123) p. 192: PEACH (209) p. 848: descr.; KLEM (142) p. 59. *A. vetustus* descr.; KLEM (142) p. 61. *A. wervekei*; FRAIPONT (85) p. 11, pl. i: KLEM (142) p. 65. *A. wortheni* descr.; KLEM (142) p. 61.

Archaeocidarisinæ defined with list of genera; DELAGE (54) p. 218.

Archaeopneustes, genotype *A. hystrix* is syn. of *Paleopneustes*, but [*A. abruptus*] is more allied to *Amphipneustes*; AGASSIZ (3) p. 186.

Argopatagus, diagnosis; MEISSNER in HAMANN (112) p. 1401: & *Geniopatagus* compared with *Palaeotropus*, *Homolampas*, *Phrissocystis*, & *Palaeobrissus* (p. 172), *A. vitreus* (p. 172, 183, pl. xci); AGASSIZ (3).

Aspidodiadema; DELAGE (54) p. 230, fig. *A. antillarum*, tubercles, pedicellariae, referred to *Dermatodiadema* (q. v.) = *Plesiadiadema* (p. 37, pl. iii-v), *C. jacobyi*, spicules, pedicellariae, *A. microtuberculatum*, specimen fr. Challenger Stat. 134 taken as genotype, tubercles, pedicellariae, referred to *Dermatodiadema* (q. v.) = *Plesiadiadema* (p. 36, pl. iii-v); MORTENSEN (195). *A. nicobaricum*, descr.; DE MEIJERE

- (57) p. 44, pls. iii, xiii: pedicellariae; MORTENSEN (195) p. 36. *A. tonsum*, pedicellariae, distrib.; op. cit. p. 34, pl. iii, v: radioles, pedicellariae, spicules; DE MEIJERE (57) p. 44, pl. xiii.
- Aspidodiademata* accepted; MORTENSEN (195) p. 43.
- Aspidodiademina* defined with list of genera; DELAGE (54) p. 230.
- Asterostoma* discussed; DE MEIJERE (57) p. 242.
- Asthenosoma* descr.; DELAGE (54) p. 222, figg. *A. coriaceum*, abactinal area; AGASSIZ (3) p. 115, pl. lii. *A. gracile*, vide sub *Calveria* et *Araeosoma tessellatum*. *A. grubei* compared with *A. varium*; DE MEIJERE (57) p. 33, pl. xii. *A. heteractis* (p. 88), *A. ijimai*, madreporite, pedicellariae, spicules, radioles (p. 87, pl. iii, v); MORTENSEN (194). *A. longispinum* vide *Calveria gracilis*. *A. pellucidum* juv. descr.; AGASSIZ (3) p. 113, pl. li. *A. varium*; MARTENS (185) p. 132. *A.* (err. pro *Phormosoma*) *zealandiae* (q. v.); AGASSIZ (3) p. 76.
- Astriclypeus* diagnosis; MEISSNER in HAMANN (112) p. 1384.
- †*Astrodapsis* sp. nondescr.; HAEHL (110) p. 24.
- Astropyga*; DELAGE (54) p. 232. *A. denudata*, descr.; DE MEIJERE (57) p. 57, pls. iv, xiv. *A. elastica*, holotype syn. of *A. radiata*, but Bell 1899 is a *Micropyga*; MORTENSEN (195) p. 20. *A. pulvinata*; DE MEIJERE (57) p. 206: pedicellariae, specimens recorded fr. western Pacific are *A. radiata* or *Chaetodiadema*; MORTENSEN (195) p. 20, pl. iii, iv. *A. radiata*; BELL (22A): MARTENS (185) p. 132: DE MEIJERE (57) p. 206, and young, p. 56: incl. *A. elastica*, *freudenbergi*, *mossambica*, tubercles, radioles, spicules, pedicellariae; MORTENSEN (195) p. 18, pl. iii-v.
- †*Atelospatangus*; AGASSIZ (3) p. 200: DELAGE (54) p. 268.
- Boletia bizonata* is a *Psammechinus*; MORTENSEN (195) p. 120.
- †*Bothriocidaridae* defined, as Fam.; KLEM (142) p. 14: as Suborder; DELAGE (54) p. 217.
- †*Bothriocidaris* descr.; DELAGE (54) p. 217, fig.: compared to *Phormosoma* juv.; AGASSIZ (3) p. 79, 80: defined; KLEM (142) p. 14. *B. globulus*, descr.; KLEM (142) p. 15: anal system and interambulacra; AGASSIZ (3) p. 80. *B. phaleni* [sic] descr.; KLEM (142) p. 15.
- †*Bothriocidaroida* defined; KLEM (142) p. 14.
- Breynia*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1400. *B. australasiae*, fascioles; DE MEIJERE (57) p. 192.
- †*Brissoma*; DELAGE (54) p. 270.
- †*Brissopneustes suecicus*; TÖRNEBOHM (267) p. 143.
- Brissopsis* (seu *Bryssopsis*); DELAGE (54) p. 270, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1395. †*B.* sp. nondescr.; BARRON (15) p. 607. *B. columbaris* compared with *B. lyrifera* & *Toxobrissus*; AGASSIZ (3) p. 190, pls. c, cii, ciii. *B. luzonica*, pedicellariae, spicules, young, comparison with *B. lyrifera*; DE MEIJERE (57) p. 188, pls. v, xxiii: criticised; AGASSIZ (3) p. 192. *B. lyrifera*; BELL (22A). †*B. nicoleti*; SCHUETZE (251) p. 185. †*B. pechiotii*; BELLINI (23) p. 5.
- Brissus* (seu *Bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1394. *B. carinatus*; DE MEIJERE (57) p. 184: †FOURTAU (83) p. 444.
- Bryssopsis* & *Bryssus*, vide *Brissopsis* & *Brissus*.
- Caenopedina*; DELAGE (54) p. 233. *C. mirabilis*, spicules, pedicellariae; MORTENSEN (195) p. 34, pl. iii, iv.
- Calveria* W. Thoms.; DELAGE (54) p. 223: name not applicable to an *Echinothurid* because originally given to an *Asterid*; AGASSIZ (3) p. 84. *C. gracilis*, radioles, pedicellariae; DE MEIJERE (57) p. 34, 205, pl. xiii: incl. *Asthenosoma longispinum* Yosh.; MORTENSEN (194) p. 89.
- Calymne* descr.; DELAGE (54) p. 265: diagnosis; MEISSNER in HAMANN (112) p. 1403: plastron; AGASSIZ (3) p. 154.
- †*Caratomus*:—*C.* sp. radioles; SCHLUETER (245). *C. laubei*; ZAHÁLKA (296) p. 18, 149. *C. peltiformis*; TÖRNEBOHM (267) p. 136.

- +*Cardiaster*:—*C. ananchytis*; FLEGEL (79): ZAHÁLKA (296) p. 44, 149: (olim *Micraster* cf. *cortestudinarium*); PETRASCHECK (216): great size, radioles attached; ROWE (235) p. 252, 262, 294. *C. cotteauvi*; ROWE (235) p. 248, 293. *C. patagonicus* Steinm. MS.; WILCKENS (287). *C. pilula*; BERG (24): ROWE (235) p. 239, 265, 294.
- Cassidulinae* defined with list of genera in Subfam. *Echinon-*, *Nucleolit-*, *Echinolamp-inae*; DELAGE (54) p. 263.
- +*Cassidulus* [fig. 340, called *C. lapiscanceri* is really *Leodia hexapora*, fide LAMBERT]; DELAGE (54) p. 264, figg. *C. elongatus*; BERG (24). *C. eugeniae*, apical system: AGASSIZ (3) p. 120, fig.
- +*Catopygus*:—*C. albensis*; PETRASCHECK (216): ZAHÁLKA (296) p. 18, 71, 149. *C. fastigatus*; op. cit. p. 149. *C. minor*, *C. rotundus*; TÖRNEBOHM (267) p. 136.
- Centrocidaris* **n. sg.** [of *Goniocidaris*?] for *G. canaliculata* & *G. doederleini* (p. 32), the latter descr. (p. 33, pls. v, xiv), shape of test (p. 1) anal plates in young (p. 7, f. 25); AGASSIZ (3).
- Centrostephanus*; DELAGE (54) p. 232. *C. longispinus*, spicules, pedicellariae (p. 32, pl. iv, v); *C. rodgersi*, spicules, pedicellariae (p. 33, pl. iii-v); MORTENSEN (195).
- Chaetodiadema*; DELAGE (54) p. 232. *C. granulatum*, descr., also young; DE MEIJERE (57) p. 54, 206, pls. iii, xi, xiv: detailed descr., also young fr. Maldives; MORTENSEN (195) p. 22, pl. i, iii, iv, v. *C. japonicum* **n. sp.** Sagami B., 30 fm.; op. cit. p. 28, pl. ii.
- Chondrocidaris* (vide et. *Cidaris*); DELAGE (54) p. 227.
- +*Chrysomelon pictum* vide *Leiopodina tallavignesi*.
- +*Chuniola caroliniae*, Gagel's pl. xxiv, f. 3, not this sp.; LAMBERT in Review of GAGEL.
- Cidarida* defined (p. 216) descr. (p. 225), with Fam. *Cidarisinae* (p. 226); DELAGE (54).
- Cidaridae*, brief systematic account; FRITEL (86). Vide *Centrocidaris*.
- Cidaris* (vide etiam s.-gg. *Centro-*, *Chondro-*, *Disco-*, *Doro-*, *Gonio-*, *Leio-*, *Podo-*, *Poro-*, *Rhabdo-*, *Stephano-*, *Stereo-cidaris*, and *Phyllacanthus*) descr.; DELAGE (54) p. 226, figg.: sensu Mortensen, heterogeneous; AGASSIZ (3) p. 23. *C. sp.*; BELL (22A). +*C. sp.*; BOEHM (28) p. 8, pl. i: BURNET (33): USSING (275) p. 84, fotogr.: KITTL (141) p. 703. +*C. abichi*; SIEMIRADZKI (255) p. 140. +*C. acicularis*; CHECCHIA (37). *C. affinis*; AGASSIZ (3) p. 22. +*C. amalthei*; SCHAEFER (242) p. 34. +*C. andreae*; LISSAJOUS (153) p. 181: allied to *C. cucumifera*; LAMBERT in Review. *C. annulifera* Lam. is var. or close ally of *C. baculosa*; MORTENSEN (195) p. 6. +*C. asperula*; COLLET (44) p. 70. +*C. avenionensis*; COUFFON (46) p. 42: radioles, measurements, distrib.; SCHUETZE (251) p. 162, pl. ii: differs fr. this sp. in shape and size; LAMBERT in Review. *C. baculosa*; MARTENS (185):=*pistillaris*, compared with *C. annulifera*, divided according to radioles into varr. *typica*, *annulifera*, *brevicollis* **var. nov.** and others; DE MEIJERE (57) p. 9, pls. ii, xi. +*C. berthelini*; COLLET (44) p. 70. *C. cf. biformis*; KITTL (141) p. 703. *C. (Stephanocidaris) bispinosa*, notes chiefly on radioles, comparison with *Rhabdocidaris annulifera*; DE MEIJERE (57) p. 4, 204, pls. i, ii, +*C. blumenbachi* & +*C. cervicalis*; MAIRE (178): ROLLIER (230) p. 466, 467. +*C. clavigera*; ROWE (235) p. 252, 293. +*C. coronata*; FUGGER (92) p. 339; MAIRE (178): SIEMIRADZKI (255) p. 140. +*C. cragini* **n. sp.**, Lower Cretaceous, Honduras, radiole only; LORIOI (162) p. 58, pl. iv. +*C. cucumifera*; RICHE (228) p. 208. +*C. curvata*; ROLLIER (230) p. 464. +*C. dissimilis*; STRANGWAYS (266) p. 80. +*C. aff. dorsata*; KITTL (141) p. 579. +*C. edwardsi*?; SHORT (254). *C. (Histocidaris) elegans*, both crenulate and smooth tubercles, radioles, pedicellariae, spicules &c. (p. 24, pl. xii) also young of 3-7 mm. diam. (p. 25, pls. ii, xii); DE MEIJERE (57). +*C. erbaensis*; MARIANI (183) p. 154. +*C. filograna*; SIEMIRADZKI (255) p. 140. *C. (Petalocidaris?) fimbriata*

- n. sp.** off Ceram, 567 m.; DE MEIJERE (57) p. 22, pls. iii, xii. +*C. florigemma*, MAIRE (178): SIEMIRADZKI (255) p. 140: var. *philastarte*; ROLLIER (230) p. 466. *C. (Petalocidaris) florigera*, radioles, spicules, pedicellariae; DE MEIJERE (57) p. 21, pl. xii. +*C. fusiformis*; COLLET (44) p. 77. +*C. gaultina*; FEARNSIDES (76): STRANGWAYS (266) p. 78. +*C. gibberula*; COLLET (44) p. 76. *C. (Chondrocidaris) gigantea* (p. 204), *C. glandulosa* **n. sp.** Java Sea, 69 m. (p. 13, pl. i); DE MEIJERE (57). +*C. gourdoni*; GOURDON (102) p. 222. +*C. grandaeva*; LANGENHAN (150). *C. (Stereocidaris) grandis*, radioles; DE MEIJERE (57) p. 17. +*C. helenae*, discussed; LAMBERT in Review of VINASSA. *C. (Discocidaris?) hirsutispinus* **n. sp.** Gilolo Passage, 469 m.; DE MEIJERE (57) p. 20, pl. xii. +*C. hirudo*; COLLET (44) p. 70: HINDE (125): ROWE (235) p. 256, 266, 293. +*C. histricoides*; ROLLIER (230) p. 464: WALTHER (281) p. 158. *C. (Phyllacanthus) imperialis*, incl. *P. dubius*, varr. *typica* & *fustigera* associated (p. 22). *C. (Stereocidaris) indica*, perhaps = *S. alcocki* (p. 18, pls. i, xi, xii), *C. (S.) japonica*, radioles & pedicellariae (p. 16, pl. xi); DE MEIJERE (57). +*C. lo[a]eviuscula*; LISSAJOUS (153) p. 181. +*C. cf. limaria*, radiole; SCHUETZE (251) p. 165, pl. ii. *C. luetkeni*, syn. of *Stephanocid. bispinosa*; MORTENSEN (195). *C. maculicollis*, descr.; DE MEIJERE (57) p. 15, pls. iii, xi. +*C. marginata* (p. 181), *C. aff. martini* (p. 180); LISSAJOUS (153). *C. metularia*; HERDMAN (120) p. 138: notes on radioles in young and adult; DE MEIJERE (57) p. 7: var. *spuria*; MARTENS (185) p. 132. *C. (Histocidaris) misakiensis*, descr. & compared with *Porocidaris milleri*; DE MEIJERE (57) p. 27, pls. ii, xii. *C. papillata*; +JAHN (135): NOBRE (198) p. 54. +*C. cf. papillata*; LUPI (168). +*C. perlata*; COLLET (44) p. 80. +*C. perornata*; BURNET (33): HINDE (125). *C. pistillaris*; MARTENS (185). +*C. pomeli*; GOURDON (102) p. 222. +*C. pretiosa*; ZLATARSKI (299). +*C. propinqua*; SIEMIRADZKI (255) p. 140. +*C. regnyi* **n. sp.**, Norian of Sutorman, Montenegro, based on radioles figd. VINASSA DE REGNY (315) Zool. Rec. 1903; LAMBERT in Review. *C. reini*, small individuals, notes chiefly on radioles; DE MEIJERE (57) p. 5, pls. i, xi. +*C. reussi*; JAHN (134) p. 86. +*C. roemeri*; KITTL (141) p. 645. +*C. sceptrifera*; BURNET (33): COLLET (44) p. 77: JAHN (134) pp. 81, 86: ROWE (235) p. 252, 256, 266, 293. *C. serrata*; +COLLET (44) p. 76: (*Discocidaris?*), spicules & pedicellariae figd.; DE MEIJERE (57) p. 19, pl. xii. +*C. smithi*; STRANGWAYS (266) p. 40, 49, 54, 59. +*C. sorigneti*; JAHN (134) p. 86, & (135): distinguished from *C. clavigera*; JUKES-BROWNE (137) p. 456. +*C. spinulosa*; RICHE (228) p. 209. +*C. striato-granosa*; CHECCHIA (37). +*C. subularis*; CHECCHIA (37). +*C. subvesiculosa*; JAHN (134) pp. 81, 82, 86: ROWE (235) p. 252, 256, 266, 293. +*C. cf. tessurata*; PATRINI (208). *C. verticillata*; MARTENS (185) p. 132: notes on radioles; DE MEIJERE (57) p. 8. +*C. vesiculosa*; ARMASCHESKY (14): JAHN (135): STRANGWAYS (266) p. 80. +*C. zschokkei*; RICHE (228) p. 209.
- Cidarosinae* defined with list of genera; DELAGE (54) p. 226.
- +*Cidaropsis minor*; LISSAJOUS (153) p. 166.
- Cionobrissus* (seu *-bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1399.
- Clypeaster* descr.; DELAGE (54) p. 254, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1381: diagnosis, incl. *Echinorodum*; FOURTAU (83) p. 417. *C. audouini* **n. sp.** G. of Suez, on reefs; op. cit. p. 418, pl. i. *C. humilis* (= *rosaceus*); HERDMAN (120) p. 141. +*C. priemi*; FOURTAU (83) p. 421, fig. *C. rarispinus*, descr., distinguished from *Alexandria magnifica*; DE MEIJERE (57) p. 134, pls. vi, xviii, xix. *C. reticulatus* Leske, vide *C. scutiformis*. *C. rosaceus* L. (= *humilis* Leske, q. v.), pedicellariae & spicules, also young; DE MEIJERE (57) p. 133, pl. xviii: incl. *C. humilis*, G. of Suez & +beaches, distinguished fr. *C. priemi*;

- FOURTAU (83) p. 420, fig. *C. scutiformis*; HERDMAN (120) p. 141 : radioles, pedicellariae, spicules; DE MEIJERE (57) p. 131, pl. xviii : incl. *C. reticulatus* Leske, G. of Suez & beaches; FOURTAU (83) p. 422. *C. testudinarius*; MARTENS (185).
- Clypeastrida* defined (p. 248) descr. (p. 249) with Famm. *Fibul-*, *Clypeastr-*, & *Scutell-inae* (p. 254); DELAGE (54).
- Clypeastrinae* defined with list of genera; loc. cit.
- Clypeastroida* systematic value of various characters, esp. radioles; DE MEIJERE (57) p. 103.
- †*Clypeolampas testeli*; ROUSSEL (232) p. 15, & (233) p. 28.
- †*Clypeus*:—*C. altus*; LISSAJOUS (153) p. 176 : distinguished from *C. ploti*; CLERC (42) p. 95. *C. deshayesi*; LISSAJOUS (153) p. 176. *C. ploti*; CLERC (42) p. 95. *C. subulatus*; STRANGWAYS (266).
- Coelopleurus* descr.; DELAGE (54) p. 237. †*C. aequis*, †*C. isabellae*; GOURDON (102) p. 224. *C. maillardi* incl. *Salmacis ?elegans* Bell; DE MEIJERE (57) p. 68.
- †*Collyrites*; DELAGE (54) p. 266, fig. *C. acuta* (p. 179), *C. analis* incl. *C. ovalis* pars. (p. 178); LISSAJOUS (153). *C. bicordata*; op. cit. p. 179 : STRANGWAYS (266) p. 30, 40, 49. *C. capistrata* & *C. elliptica*; LISSAJOUS (153) p. 179. *C. fribourgensis*; DEL CAMPANA (55) p. 267. *C. ovalis*, incl. *C. analis*; CLERC (42) p. 98. *C. ringens*; op. cit. p. 97 : incl. *C. eudesi*; LISSAJOUS (153) p. 177. *C. thermarum*; SIEMIRADZKI (255) p. 142. *C. verneuii*; DEL CAMPANA (55) p. 267.
- Colobocentrotus*; DELAGE (54) p. 246 : diagnosis; MEISSNER in HAMANN (112) p. 1377.
- †*Conoclypus* (vel -eus) descr.; DELAGE (54) p. 249. *C. conoideus*; FUGGER (92) p. 339, 345; GOURDON (102) p. 222. *C. pyrenaicus*; loc. cit.
- †*Conoclypinæ* defined with list of genera; DELAGE (54) p. 249.
- Conolampas* diagnosis; MEISSNER in HAMANN (112) p. 1387 : maintained (p. 117), apical system (p. 173, pl. lxxv), *C. sigsbei*, details of test (p. 117, fig., pl. lxxv); AGASSIZ (3).
- Conulus*, vide *Echinoconus*.
- †*Coraster margaritæ*; GOURDON (102) p. 217.
- Cottaldia forbesiana* referred to *Prionechinus* (q. v.); DE MEIJERE (57) p. 71.
- †*Cyclaster gourdoni*; GOURDON (102) p. 221.
- †*Cyphosoma* [incl. *Phymosoma*]; DELAGE (54) p. 238. *C. archiaci*; ROUSSEL (233) p. 36. *C. corollare*; ROWE (235) p. 252, 266, 293. *C. gregoirei*; ROUSSEL (232) p. 15. *C. koenigi*; HINDE (125). *C. radiatum*; BERG (24); ROWE (235) p. 241, 293 : et. sub *Phymosoma*; PETRASCHECK (216); ZAHÁLKA (296) p. 18, 149. *C. regulare*, *C. tenuistriatum*; COLLET (44) p. 76.
- Cyphosomina* defined with Famm. *Arbaci-*, & *Cyphosom-inæ*; DELAGE (54) p. 237.
- Cyphosominae* defined with list of genera; DELAGE (54) p. 238.
- Cystechinus* diagnosis; MEISSNER in HAMANN (112) p. 1402 : discussed, †*C. crassus* probably not this genus (p. 157), *C. loveni* descr. (p. 158, pls. B, lxxv–lxxix), actinal area (p. 122, 123, 130, figg.), *C. wyvillei*, actinal area (p. 122, 123, 130, pl. lxxx); AGASSIZ (3).
- †*Cystocidaridae* defined as Suborder; DELAGE (54) p. 217.
- †*Cystocidaroida* defined; KLEM (142) p. 12.
- Dermatodiadema* Al. Ag. 1898, incl. *Aspidodiadema microtuberculatum*, which is genotype of *Plesiodiadema* Pomel 1883 non Duncan 1885; MORTENSEN (195) p. 38 : discussed, incl. also *Aspidodiadema antillarum*; AGASSIZ (3) p. 58 : descr.; DELAGE (54), p. 230. *D. amphigymnum*; MORTENSEN (195) p. 38 : descr.; DE MEIJERE (57) p. 47, pl. xiv. *D. globulosum* descr. (p. 60, pls. xxiv, xxvi, xxviii, xxix), *D. horridum* descr. (p. 63, pls. xxiv–xxix); AGASSIZ (3). *D. indicum*;

- MORTENSEN (195) p. 38 : descr. ; DE MEIJERE (57) p. 46, pls. iii, xiv.
D. molle; MORTENSEN (195) p. 38.
- +*Desorella* discussed (? incl. *Pachyclypeus*; LAMBERT in Review) & *D. elata* descr. & figd.; WOODS (293).
- Diadema* descr.; DELAGE (54) p. 231 : diagnosis; FOURTAU (83) p. 411.
D. antillarum, descr. (p. 14, pl. iii, v) [v. et. sub *Dermatodiadema*].
D. globulosum [ditto], distinguished from *D. saxatile*, but probably syn. of *D. savignyi* (p. 17, pl. iii), *D. lamarcki* Rouss., syn. of *D. saxatile* (p. 17), *D. mexicanum* descr. (p. 15), *D. paucispinum*, perhaps syn. of *D. savignyi* (p. 17), *D. savignyi*, descr. (p. 16, pl. iii-v); MORTENSEN (195). *D. saxatile*; BELL (22A): HERDMAN (120) p. 139: MARTENS (185): (= *setosum*), radioles, pedicellariae; DE MEIJERE (57) p. 49, pl. xiv : incl. *D. setosum*, distinguished from *D. antillarum* & *D. savignyi*, descr., esp. pedicellariae, spicules, & radioles; MORTENSEN (195) p. 9, pl. iii-v. *D. setosum*, incl. *D. savignyi*; FOURTAU (83) p. 412. +*D. texanum*; UDDEN (273) p. 37.
- Diadematidae*, brief systematic account; FRITEL (87): classification of genera, value of various characters, Fam. should include *Diadema*, *Echinothrix*, *Astropyga*, *Chaetodiadema*, *Centrostephanus*, *Lissodiadema*, *Placodiadema*, *Helikodiadema*; MORTENSEN (195) p. 40.
- Diademida* defined (p. 216) descr. with Tribes *Diadem-*, *Salen-*, *Cyphosom-*, *Echin-ina* (p. 229); DELAGE (54).
- Diademina* defined with Famm. *Aspidodiadem-*, *Diadem-*, *Micropyg-*, *Pedin-*, & *Hemicidaris-inae*; DELAGE (54) p. 230.
- Diademinae* defined with list of genera; loc. cit.
- +*Diademopsis*:—*D. buccalis* Dumortier non Ag. is syn. of *D. serialis*, & *D. nuda* Dum. is syn. of *Palaeopedina globulus*; LAMBERT (148) p. 544. *D. serialis*; LISSAJOUS (153) p. 165.
- Dialithocidaris*; DELAGE (54) p. 237: diagnosis (p. 55), *D. gemmifera* descr. (p. 56, pls. xv, xxiii); AGASSIZ (3).
- +*Dictyopleurus*; MORTENSEN (195) p. 112.
- +*Diplocidaris*; DELAGE (54) p. 229. *D. gigantea*; MAIRE (178).
- +*Diplopodia*; DELAGE (54) p. 235. *D. aequale* (p. 165), *D. areolatum* (p. 163); LISSAJOUS (153). *D. aroviense*; op. cit. p. 165: MAIRE (178), *D. bipunctatum*; LISSAJOUS (153) p. 165: probably not this sp.; LAMBERT in Review. *D. calloviense* (p. 162), *D. langi* (p. 164); LISSAJOUS (153): cannot be Desor's sp., wh. is a *Polydiadema*; LAMBERT in Review. *D. martini* n. sp. Lr. Callovian, Mancey nr. Tournus, cotypes Mus. Tournus, Lissajous; LISSAJOUS (153) p. 162, pl. ii. *D. oppeli*; WALTHER (281) p. 167. *D. taffi*, descr.; LORIEL (162) p. 56, pl. iv. *D. texanum*; RICHARDSON (227) p. 48.
- Diplopodidae* rejected; MORTENSEN (195) p. 44.
- Diploporus* Trosch., rejected (p. 75) but might be used for *Salmacis dussumieri* (p. 76); MORTENSEN (195).
- Diplotheicanthus* diagnosis; MEISSNER in HAMANN (112) p. 1382.
- Discocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 227.
- +*Discocystis*; KLEM (142) p. 73.
- +*Discoidea*:—*D. cylindrica*; STRANGWAYS (266) p. 80: WOLLEMAN (290). *D. infera*, *D. minima*, *D. pentagonalis*; COLLET (44) p. 76.
- +*Ditremaster nux*; GOURDON (102) p. 220.
- Dorocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228, fig. *D. bracteata* (p. 23), *D. panamensis*, descr. & discussed (p. 20, pls. i-v) shape of test (p. 1, f. 3) size of actinal system (p. 3, f. 12) anal plates in young (p. 7, f. 22, 24) growth of coronal plates (p. 9, f. 26-29 & 43-45); AGASSIZ (3). *D. papillata*; DE MEIJERE (57) p. 204: juv., anal system (p. 3, f. 14), pedicellariae (p. 22); AGASSIZ (3).
- +*Dysaster*:—*D. granulosus*; WELSCH (283) p. 27: LISSAJOUS (153) p. 180. *D. moeschi*; loc. cit. *D. siliceus*; SIEMIRADZKI (255) p. 142.

Dysasterinae; DELAGE (54) p. 266.

Echinanthus testudinarius; HERDMAN (120) p. 141.

Echinarachnius; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. parma*, descr., range; CLARK (38) p. 564, pl. x.

Echinina defined with Famm. *Temnopleurus*-, *Stomopneustes*-, *Echinus*-, *Toxopneustes*-, & *Echinometrinae*; DELAGE (54) p. 239.

Echininae; DELAGE (54) p. 242.

Echinobrissus, vide etiam *Nucleolites*. †*E. amplus* juv.; LISSAJOUS (153) p. 175. †*E. clunicularis*; loc. cit.: STRANGWAYS (266) p. 23, 49. †*E. depressus*, †*E. dimidiatus*; op. cit. p. 40. *E. (Oligopodia) epigonus*, descr., compared with *Catopygus recens*; DE MEIJERE (57) p. 141, pl. xix. †*E. goldfussi*; SIEMIRADZKI (255) p. 141. †*E. aff. olfersii*; ZLATARSKI (299). †*E. orbicularis*; LISSAJOUS (153) p. 176: STRANGWAYS (266) p. 23. †*E. peroni*; GLANGEAUD (101) p. 13. †*E. scutatus*; LISSAJOUS (153) p. 176: STRANGWAYS (266) p. 49, 54 & fig. †*E. terquemi*; LISSAJOUS (153) p. 175.

Echinocardium; DELAGE (54) p. 267, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1399. *E. sp.* juv.; LO BIANCO (154) p. 61, pl. xl. *E. australe*; BELL (22A): HALL (111) p. 73. *E. cordatum*; MAR. BIOL. ASS. (184) p. 211: NOBRE (198) & (199): NORDMANN (200). †*E. deikey*; SCHUETZE (251) p. 185. *E. flavescens*; BELL (22A): MAR. BIOL. ASS. (184) p. 211. †*E. orthonotum*; CLARK (39) p. 430, pl. cxix. *E. pennatifidum*; MAR. BIOL. ASS. (194) p. 211.

Echinocidaris vide *Arbacia*.

†*Echinococonus* (seu *Galerites* [melius *Conulus*]):—*E. conicus*; ROWE (235) p. 251: WRIGHT (294). *G. globulus*; HINDE (125). *E. roemeri*; GOURDON (102) p. 218. *G. vulgaris*; USSING (275) p. 86, fig.

†*Echinocorys* (seu *Ananchites*):—*A. gibba*; RABELLE (221). *A. ovata*; ARMASCHESKY (14): FUGGER (92) p. 339: KARAKASH (138) p. 26: TÖRNEBOHM (267) p. 132: USSING (275) p. 85, fig.: var. *pyramidata*; BERG (24). *E. pyramidatus*; ROWE (235) p. 256. *A. scutatus*; BURNET (33). *E. scutatus*, cum varr. *pyramidatus* et *striatus*; HINDE (125). *A. sulcata*; GRÖNWALL (109) p. 29, & (108) p. 429: TÖRNEBOHM (267) p. 143 & fig. *E. vulgaris*; DIBLEY (62): GOURDON (102) p. 218: ROWE (235) p. 239, 243, 247, 250, 255, 265, 293.

Echinocorytidæ discussed; DE MEIJERE (57) p. 152.

Echinocrepis; DELAGE (54) p. 267: diagnosis; MEISSNER in HAMANN (112) p. 1405. *E. cuneata*, actinal area (p. 124, 130), *E. setigera* descr. (p. 144, pls. lxvi-lxix also p. 124, 125, 127, 128, 130, 131); AGASSIZ (3).

Echinocyamus descr.; DELAGE (54) p. 254, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1380. *E. sp.*; HALL (111) p. 72. *E. crispus* descr. & compared with *E. pusillus* (p. 105, pls. vi, xvii), *E. protractus*, descr. (p. 109, pls. vi, xvii, xviii); DE MEIJERE (57). *E. pusillus*; MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 55, & (199): †DOLLFUS (65) p. 662: †PATRINI (208) p. 741. †*E. pyriformis*; COUFFON (46) p. 43. *E. scaber* n. sp., Malay Archipelago, 120-1886 metres; DE MEIJERE (57) p. 108, pls. vi, xvii.

†*Echinocystidæ* defined; KLEM (142) p. 13.

†*Echinocystis* descr.; DELAGE (54) p. 217: syn. *Cystocidaris*, defined, *E. pomum*, incl. *E. uva*, descr.; KLEM (142) p. 13.

Echinodiscus Leske; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. auritus*; HERDMAN (120) p. 142: radioles, pedicellariae, &c.; DE MEIJERE (57) p. 138, pl. xix.

†*Echinodiscus* Worth. & Miller, vide iv, g.

Echinolampas; DELAGE (54) p. 264: diagnosis; FOURTAU (83) p. 427: MEISSNER in HAMANN (112) p. 1387: apical system; AGASSIZ (3) p. 173, pl. lxv. *E. depressa*, details of test; op. cit. p. 118, pl. lxiv, lxv:

radioles, pedicellariae, compared with *E. alexandri* & *E. blanchardi*; DE MEIJERE (57) p. 144, pl. xix. + *E. ellipsoidalis*; GOURDON (102) p. 221. + *E. hemisphaericus*; COUFFON (46) p. 42: DOUXAMI (69) p. 188, 561. + *E. hovelacquei*; GOURDON (102) p. 221. *E. oviformis*; FOURTAU (83) p. 428: HERDMAN (120) p. 142. + *E. scutiformis*; DOUXAMI (69) p. 188, 561: SCHUETZE (251) p. 185. + *E. subsimilis*; FUGGER (92) p. 345.

Echinolampinae; DELAGE (54) p. 264.

Echinometra descr.; DELAGE (54) p. 246: diagnosis; FOURTAU (83) p. 415: MEISSNER in HAMANN (112) p. 1377. *E. lucunter*; MARTENS (185) p. 131: G. of Suez & +beaches; FOURTAU (83) p. 415. *E. mathaei* (= *lucunter* Leske), compared with *E. oblonga*; DE MEIJERE (57) p. 101. *E. oblonga*, probable new genus; DELAGE (54) p. 246: formerly confused by Mortensen with *E. mathaei*, now distinguished; MORTENSEN (195) p. 123, pl. v, vii. *E. subangularis*; BRANNER (32) p. 271.

Echinometridae, vide *Selenechinus*.

Echinometrinae defined with list of genera; DELAGE (54) p. 246.

Echinoneus descr.; DELAGE (54) p. 263: diagnosis; MEISSNER in HAMANN (112) p. 1385. *E. cyclostomus*; HERDMAN (120) p. 142: radioles &c.; DE MEIJERE (57) p. 139: a sand-feeder; GARDINER (95) p. 340. *E. minor*; MARTENS (185).

Echinoninae; DELAGE (54) p. 263.

Echinorodum vide *Clypeaster*.

Echinosoma; DELAGE (54) p. 223.

+ *Echinospatagus cordiformis*; STRANGWAYS (266) p. 72, 76.

Echinostrephus; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376. *E. molare*; HERDMAN (120) p. 139.

Echinothrix; DELAGE (54) p. 232. *E. calamaris*, incl. *E. desori*; DE MEIJERE (57) p. 51: fr. Redang, ambulacral radiole, pedicellariae; MORTENSEN (195) p. 30, pl. iii-v. *E. diadema*; HERDMAN (120) p. 139: MARTENS (185) p. 132: (= *turcarum*), radioles, pedicellariae; DE MEIJERE (57) p. 50, pl. xiv: pedicellariae, spicules; MORTENSEN (195) p. 31, pl. iii, iv.

+ *Echinothuria* sp.; SALTER (240).

Echinothurida defined (p. 216) descr. (p. 219) with Fam. *Echinothuriinae* (p. 221); DELAGE (54).

Echinothuriidae maintained, relations discussed, derived from *Lepidocentridae*; MORTENSEN (195) p. 51.

Echinothuriinae defined with list of genera; DELAGE (54) p. 221.

Echinus descr.; DELAGE (54) p. 242, & figg.: diagnosis; FOURTAU (83) p. 416: MEISSNER in HAMANN (112) p. 1369. *E. acutus*; MAR. BIOL. ASS. (184) p. 210. *E. albocinctus* descr., distinguished from *E. magellanicus*, also in + *Pliocene*; LORIOLO (162) p. 18, pl. i. *E. angulosus*; BELL (22A). *E. armatus* vide *Selenechinus*. *E. elegans*; DE MEIJERE (57) p. 208. *E. esculentus*; DEKHUYZEN (51): GEMMILL & LINSTOW (99): MAR. BIOL. ASS. (184) p. 210: NOBRE (198) p. 55 & (199): section of radial cord figd.; ROY. COLL. SURGEONS (237) p. 4. *E. gilchristi* n. sp., 33-700 fm., S. African coast, various locc.; BELL (22A) p. 170. + *E. lineatus*; WALTHER (281) p. 158. *E. magellanicus*, descr., is not *Sterechinus*, distinguished from *E. margaritaceus*; LORIOLO (162) p. 13, pl. i. *E. microtuberculatus*; HERBST (117 & 119): development; SCHMIDT (246): vide etiam sub *Parechinus*. *E. miliaris*; HERBST (117): JANNSENS (136): MAR. BIOL. ASS. (184) p. 210: RETZIUS (226) p. 28: ZIEGLER (298): vide etiam sub *Parechinus*. + *E. molinis* [*monilis*]; COUFFON (46) p. 41. *E. neglectus*; RETZIUS (226) p. 28. *E. norvegicus* not bipolar; MEISSNER (186) p. 27. *E. saxatilis*; PARONA (207) p. 384. *E. trizonalis* is a *Psammechinus*; MORTENSEN (195) p. 120. *E. verrucu-*

latus, distinct from *E. angulosus*, G. of Suez and †beaches; FOURTAU (83) p. 416.

Echinusinae defined with lists of genera; DELAGE (54) p. 242.

†*Enallaster*:—*E. boehmi* **n. sp.** Lower Cretaceous, Honduras, also in Texas (p. 49, pl. iv), *E. sapperi* **n. sp.** *ibid.* (p. 47, pl. iv), *E. texanus*, descr., *ibid.* (p. 52, pl. iv); LORIEL (162).

Encope; DELAGE (54) p. 255, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1383. *E. emarginata*; LORIEL (162) p. 21.

Eobriuss **n. g.** of Prymnodesmid Spatangoids, genotype *E. townsendi* **n. sp.**, coast of Oman; BELL (22).

†*Eocidaris* defined; KLEM (142) p. 67. *E.?* sp.; KITTL (141) p. 685, pl. xxii. *E.* sp. Julien 1874 (p. 72); *E. blairi* descr. (p. 67); *E. drydenensis* (p. 71); *E. forbesianus* (p. 67), *E. hallianus*, *E. keyserlingi* (p. 68), *E. laevispinus*, *E. muensterianus* (p. 69), all descr.; *E. scrobiculata* (p. 71); *E. verneuillianus* descr. (p. 70): KLEM (142).

†*Eotiaris*; KLEM (142) p. 74.

†*Epiaster*:—*E. cuevasensis* **n. sp.**, Lower Cretaceous, Honduras; LORIEL (162) p. 54, pl. iv. *E. distinctus*; COLLET (44) p. 44. *E. elegans*; RICHARDSON (227) p. 48. *E. gibbus*; GOURDON (102) p. 223. *E. cf. incisus*; SAVORNIN (241) p. 141. *E. renoti*; COLLET (44) p. 80.

Eupatagus (seu *Euspatagus*, seu *Euspatangus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1397. *E. formosus*; DAINELLI (49) p. 197 & (50). *E. ornatus* GOURDON (102) p. 223. *E. valenciennesii*; HALL (111) p. 73.

Faorina; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1391. *F. chinensis*; DE MEIJERE (57) p. 183.

Fibularia; DELAGE (54) p. 254: diagnosis; MEISSNER in HAMANN (112) p. 1380. *F. australis?*, 12–15 petal-pores; HERDMAN (120) p. 141. *F. cribrellum*, descr.; DE MEIJERE (57) p. 112, pls. vi, xviii. †*F. ovata* (Münst. sub *Echinoneus*), descr.; SCHUETZE (251) p. 178, pl. ii. †*F. oviformis*; BELLINI (23) p. 8. *F. ovulum*, radioles and pedicellariae; DE MEIJERE (57) p. 111, pl. xviii. †*F. tarentina*; BELLINI (23) p. 5, 8. †*F. ursendorffensis* (K. Miller, sub *Echinocyranus* [sic]) descr.; SCHUETZE (251) p. 176, pl. ii. *F. volva*; DE MEIJERE (57) p. 111: †FOURTAU (83) p. 444.

Fibulinae defined with list of genera; DELAGE (54) p. 254.

Galerites, vide *Echinoconus*.

†*Galeropygus*:—*G. marcoui*, *G. nodoti*, *G. sulcatus*; LISSAJOUS (153) p. 174.

†*Gauthieria*, apical system; AGASSIZ (3) p. 40.

Genicopatagus (v. etiam sub *Argopatagus*); DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (112) p. 1389. *G. affinis*; AGASSIZ (3) p. 172, 183, pl. xci.

Genocidaris descr.; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *G.* sp. (p. 202), *G. decipiens* **n. sp.**, Flores Sea, 40 m. (p. 76, pl. xvi), *G. monolini*, descr. (p. 74, pls. iv, xvi); DE MEIJERE (57).

Glyphocyphinae Duncan, discussed; DELAGE (54) p. 240.

†*Glyphocyphus*; MORTENSEN (195) p. 112.

†*Glyphosoma* [err. pro *Cyphosoma*] *radiatum*; COLLET (44) p. 76.

†*Glypticus hieroglyphicus*, incl. *G. magniflora* Etallon; LISSAJOUS (153) p. 169.

Glyptocidaris; DELAGE (54) p. 238. *G. crenularis* referred to *Phymosomatidae*; MORTENSEN (195) p. 47.

Goniocidaris; DELAGE (54) p. 227, fig. *G. canaliculata*, juv., anal system (f. 15) generic position discussed, includes *G. nutrix* (p. 4); AGASSIZ (3): vide etiam *Centrocidaris*. *G. doederleini*, ditto. *G. tubaria*; DE MEIJERE (57) p. 204: Victoria, probably incl. *G. geranioides*; HALL (111) p. 70.

- Goniopneustes*; DELAGE (54) p. 241: maintained; MORTENSEN (195) p. 102.
- Gymnechinus*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1371. *G. darnleyensis*, differences from type, pedicellariae; DE MEIJERE (57) p. 89, pl. xvii, but see p. 203: apical system, auriculae (p. 117), De Meijere's specimens are not this sp. (p. 116), *G. inconspicuus* n. sp. Funafuti (p. 118, pl. vi, vii); MORTENSEN (195). *G. pulchellus* n. sp., G. of Siam, 1-15 fm.; op. cit. p. 113, pl. i, ii, vii: DE MEIJERE (57) p. 203. *G. pumilio* n. sp. Malay Archipelago, 22-45 m.; op. cit. p. 90, pl. xvii, but = *Salmacis rufa* Bell, p. 203: is *Psammechinus*; MORTENSEN (195) p. 117. *G. versicolor* n. sp., Macclesfield Bank, = "*Temnopleurus reynaudi*" Bell; op. cit. p. 116, pl. vii.
- Gymnopatagus*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1397.
- Hapalosoma* (vide etiam *Hoplosoma*); DELAGE (54) p. 223, fig.: relations to *Asthenosoma*; MORTENSEN (194) p. 85. *H. pellucidum*, pedicellariae; DE MEIJERE (57) p. 37, pl. xiii.
- +*Hecistocyphus*; DELAGE (54) p. 233.
- Helicoidaris*, descr.; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376.
- Hemiaster*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1390: discussed with *H. bufo* as genotype, with *Trachyaster* as subgenus (genotype *T. globulus*), its distinction from *Linthia* based on heteronomy of IR 1; BATHER (18) p. 297. +*H. affinis* distinguished (p. 22), +*H. angustipneustes*, incl. *H. stella* d'Orb. (p. 30); LAMBERT (147). +*H. bufo*; COLLET (44) p. 44. *H. cavernosus*; LUDWIG (164) p. 692. +*H. cubicus*; FOURTAU (82) p. 233: distinguished from *Linthia oblonga*; NEWTON (196). +*H. depressus*; JAHN (134) p. 81. *H. gallegosensis* n. sp. R. Gallegos, Patagonia, and young; LORIOLO (162) p. 5, pl. i. +*H. gauthieri*; ROUSSEL (232) p. 15, & (233) pp. 28, 36. *H. gibbosus*; DE MEIJERE (57) p. 182. +*H. ligeriensis* distinguished; LAMBERT (147) p. 29. +*H. minimus*; ROWE (235) p. 241, 294. +*H. cf. minimus*; SCHARDT (244) p. 155. +*H. nasutulus* descr., is *Peroniaster*; LAMBERT (147) p. 22, 23. +*H. pellati*; GOURDON (102) p. 223. +*H. pisum* (p. 25), +*H. prunella* distinguished (p. 21, 30), +*H. punctatus* distinguished, horizon (p. 26), +*H. cf. punctatus*, Garumnian (p. 28), +*H. pusillus* young of *H. nasutulus* (p. 22), +*H. stella* Morton is *Bolbaster* (p. 31); LAMBERT (147). +*H. sudanensis* n. sp. Eocene, Garadimi and Tamaské in Sokoto; BATHER (18) p. 299, pl. xi: probably *Linthia*; LAMBERT in Review. +*H. suevicus*; SCHUETZE (251) p. 180. +*H. tamulicus*; LAMBERT (147) p. 29. +*H. vancouverensis* n. sp. Nanaimo group, Upper Cretaceous, Cowichan R. and Shopland, Vancouver Id., cotypes internal casts in Mus. Geol. Surv. Ottawa; WHITEAVES (285) p. 289. +*H. verneuilli*; ROUSSEL (233) p. 36. +*H. verticalis*; FUGGER (92) p. 345.
- +*Hemicidaris*, descr.; DELAGE (54) p. 234. *H. crenularis*; MAIRE (178). *H. intermedia*; op. cit.: ROLLIER (230) p. 466: STRANGWAYS (266) p. 59. *H. purbeckensis*; GLANGEAUD (101) p. 33. *H. undulata*; MAIRE (178). *H. zignoi*; DEL CAMPANA (55) p. 267.
- Hemicidarissinae* defined with list of genera; DELAGE (54) p. 234.
- Hemipatagus mascareignarum* discussed; DE MEIJERE (57) p. 191.
- Hemipodina*, systematic position; DE MEIJERE (57) p. 67. +*H. chalmasi*, +*H. granulata*? juv., +*H. icaunensis*; LISSAJOUS (153) p. 166. *H. indica*, descr., esp. radioles & pedicellariae; DE MEIJERE (57) p. 65, pls. iii, xv, xvi. +*H. lorioli* n. sp., Bathonian, Davayé; LISSAJOUS (153) p. 167, pl. ii. +*H. woodwardi*; STRANGWAYS (266) p. 23.
- +*Hessotiara minor* n. sp., Hettangian of Vendée; LAMBERT (148) p. 542, pl. xviii.

- Heteraster* compared with *Enallaster*; LORIEL (162) p. 48. +*H. oblongus*; SCHARDT (244) p. 136.
- +*Heterocentrotus*; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1377: ditto, incl. *Acrocladia*; FOURTAU (83) p. 413. *H. mamillatus*; COUTIÈRE (48): DE MEIJERE (57) p. 102: MARTENS (185) p. 132: entrance to G. of Suez and raised beaches, but not at Port Said as cited by Gauthier; FOURTAU (83) p. 414. *H. trigonarius*; DE MEIJERE (57) p. 102.
- +*Heterolampas maresi*; SAVORNIN (241) p. 150.
- +*Heterosalenia* discussed; DELAGE (54) p. 234.
- Histocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228: rejected; AGASSIZ (3) p. 24.
- +*Holaster*; DELAGE (54) p. 265, fig. *H. carinatus*; RADKEVICH (222): WOLLEMAN (290). *H. faxensis*; TÖRNEBOHM (267) p. 143. *H. laevis*; STRANGWAYS (266) p. 80: WOLLEMAN (290). *H. nodulosus*; COLLET (44) pp. 44, 47, 70. *H. placenta*; BURNET (33): JAHN (134) pp. 83, 84, 86, 89: ROWE (235) p. 248, 294: distinguished from *H. planus*; JUKES-BROWNE (137) p. 458. *H. planus*; BURNET (33): PETRASCHECK (216): ROWE (235) p. 241, 243, 293: distinguished from *H. laevis*; JUKES-BROWNE (137) p. 457. *H. rotundus*; STRANGWAYS (266) p. 80. *H. scanensis*; TÖRNEBOHM (267) p. 132. *H. subglobosus*; STRANGWAYS (266) p. 80: WOLLEMAN (290): Lambert quoted; COLLET (44) pp. 70, 74. *H. suborbicularis* (p. 78), *H. trecensis*? (p. 80); STRANGWAYS (266).
- Holasterinae* defined with list of genera in Subfam. *Ananchytinae* & *Collyritinae*; DELAGE (54) p. 265.
- +*Holocopneustes gourdoni*; GOURDON (102) p. 220.
- Holocypida* defined with Fam. *Holocyp-*, & *Conocypinae*; DELAGE (54) p. 248.
- Holocypinae* defined with list of genera; DELAGE (54) p. 248.
- +*Holocypus* descr.; DELAGE (54) p. 248, fig. *H. corallinus*; LISSAJOUS (153) p. 172. *H. depressus*; CLERC (42) p. 96: STRANGWAYS (266) p. 23: var.; LISSAJOUS (153) p. 172, pl. ii. *H. hemisphaericus*; op. cit. p. 171: incl. *H. devauxianus*, resemblance to *H. depressus* in young; CLERC (42) p. 97. *H. oblongus*; STRANGWAYS (266) p. 40. *H. planatus*; UDDEN (273) p. 37. *H. scutatus*; STRANGWAYS (266) p. 40. *H. texanus*; RICHARDSON (227) p. 48.
- Holopneustes*; DELAGE (54) p. 241. *H. inflatus*, holotype examined; MORTENSEN (195) p. 107. *H. porosissimus*; HALL (111) p. 72: measurements; MORTENSEN (195) p. 107. *H. purpurascens*, holotype descr.; op. cit. p. 106, pl. ii, vii.
- Homolampas* (v. etiam sub *Argopatagus*); DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1401. *H. fragilis*, *H. fulva* (p. 175, figg.), *H. gracilis* (p. 176), *H. hastata* descr. (p. 175, pls. lv, lxiii, lxiv); AGASSIZ (3). *H. rostrata* descr.; DE MEIJERE (57) p. 196, pl. xxiii.
- Hoplosoma* [err. pro *Hapalosoma*], rejected; AGASSIZ (3) p. 85.
- +*Hybocypus* (seu -eus):—*H. sp.*; SIEMIRADZKI (255) p. 141. *H. gibberulus*, difference between Callovian & Bathonian forms; *H. ovalis*: LISSAJOUS (153) p. 173.
- Hygrosoma*; DELAGE (54) p. 223: rejected; AGASSIZ (3) p. 85. *H. hoplacantha*, radioles, pedicellariae, spicules, also young specimens; DE MEIJERE (57) p. 37, pl. xiii.
- +*Hypodiadema balsami* Stopp., probably *Acrosalenia*; LAMBERT (148) p. 540.
- Hypsiechinus* descr.; DELAGE (54) p. 239, figg. *H. coronatus*; LUDWIG (165).
- +*Iheringiana*; DELAGE (54) p. 255.
- +*Infulaster*:—*I. excentricus*; BURNET (33): FUGGER (92) p. 339: ROWE

- (235) p. 251. *I. rostratus*, enlarged range; op. cit. p. 248, 249, 256, 266, 294.
- Irregulariariae* [sic] defined (p. 215) descr. (p. 247) with Orders *Holcotyp*-, *Clypeastr*-, & *Spatang-ida* (p. 248); DELAGE (54).
- Kamptosoma*; DELAGE (54) p. 224. *K. indistinctum* n. sp., Challenger Station 272 = *Phormosoma tenue*? of Chall. Rep., descr.; AGASSIZ (3) p. 110, pl. 1.
- +*Koninckocidaris*; KLEM (142) p. 74.
- Lagana decagona* Blainv. = *Laganum decagonale*; DE MEIJERE (57) p. 117.
- Laganum*; DELAGE (54) p. 254, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1381: various specific characters discussed; DE MEIJERE (57) p. 113. *L. anale* n. sp., Moluccas, 90–141 m.: op. cit. p. 129, pls. vi, xviii. *L. bonani*; FOURTAU (83) p. 423: MARTENS (185): radioles, &c.; DE MEIJERE (57) p. 114, pl. xviii. *L. conicum* n. sp., near Macassar, 450 m. (p. 120, pls. vi, xviii), *L. (Peronella) decagonale*, descr. (p. 117, pls. vi, xviii); DE MEIJERE (57). *L. decagonum*; MARTENS (185). *L. depressum*; HERDMAN (120) p. 141: radioles, position of gonopores; DE MEIJERE (57) p. 114, pls. vi, xviii: †var. *sinaiticum*; FOURTAU (83) p. 444. *L. fragile*, *L. fudsiyama* (p. 130) *L. lesueurii* distinguished from *L. decagonale* and descr., also young, incl. *L. elongatus*, *L. rostratum*, & *Peronella rubra* (p. 122, pls. vi, xviii), *L. minutum* n. sp., Sulu Archipelago, 13–23 m. (p. 125, pls. vi, xviii); DE MEIJERE (57). *L. orbiculare*; MARTENS (185): distinguished from *L. decagonale* and descr., also young, perhaps incl. *Peronella ludwigi* Pfeffer; DE MEIJERE (57) p. 116, 126, pls. vi, xviii. *L. (Peronella) peronii* & *L. putnami* discussed (p. 116), *L. solidum* n. sp., Sulu Sea & Timor, 73–350 m. (p. 121, pl. vi); op. cit.
- +*Lambertia*; AGASSIZ (3) p. 200.
- Leiocidaris pistillaris* vide sub *Cidaris baculosa*.
- +*Leiopodina tallavignesi*; DAINELLI (50): descr., incl. *Chrysomelon pictum*; DAINELLI (49) p. 193.
- +*Leiosoma*:—*L. bahezrei*, *L. gourdoni*; GOURDON (102) p. 223.
- Leodia*, vide sub *Cassidulus*.
- +*Lepidechinus* defined; KLEM (142) p. 20. *L. imbricatus* descr.; op. cit. p. 21: interambulacra; AGASSIZ (3) p. 79, 80. *L. rarispinus* descr.; KLEM (142) p. 21.
- +*Lepidesthes* defined, syn. *Hybochinus*, *L. colletti* descr. (p. 24), *L. coreyi* descr. (p. 25), *L. devonians* (p. 26), *L. formosus* descr. (p. 25), *L. laevis* (p. 27), *L. spectabilis* descr. (p. 26), *L. wortheni* descr. (p. 28); KLEM (142).
- +*Lepidesthesinae* defined with list of genera; DELAGE (54) p. 218.
- +*Lepidesthidae*; KLEM (142) p. 22.
- +*Lepidocentridae* defined; KLEM (142) p. 16.
- +*Lepidocentrus*; DELAGE (54) p. 218: defined, *L. eifelianus* descr. (p. 16), *L. muelleri* & *L. rhenanus* descr. (p. 17); KLEM (142).
- +*Lepidocentrusinae* defined with list of genera; DELAGE (54) p. 218.
- +*Lepidocidaris* defined & *L. squamosus* descr.; KLEM (142) p. 72.
- +*Leptechinus* & *L. gracilis*; KLEM (142) p. 74.
- Linopneustes*; DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1398: discussed; AGASSIZ (3) p. 178. *L. excentricus*; op. cit. p. 183: descr.; DE MEIJERE (57) p. 180, 240, pls. x, xxii. *L. longispinus* (p. 178–185, 204, & figg., pl. xciii, xciv), *L. murrayi* (p. 178, 183); AGASSIZ (3).
- Linthia* (v. etiam sub *Hemiaster*); DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1391: distinguished from *Schizaster* & *Periaster*; TORNQUIST (268) p. 392. †*L. aragonensis* & †*L. arizensis*; GOURDON (102) p. 219. *L. australis*; HALL (111) p. 73. †*L. bisulca*,

- +*L. cotteaui*, +*L. dubia*, & +*L. ducrocqui* distinguished from *Hemiaster sudanensis*; BATHER (18) pp. 302, 303. +*L. heberti* (p. 218), +*L. hovelacquei* (p. 219); GOURDON (102). +*L. irregularis*; FUGGER (92) p. 339. +*L. oblonga*, Cenomanian, Sinai, descr. and figd., distinguished from *Hemiaster cubicus*; NEWTON (196). +*L. orbigny*, +*L. poblae*; GOURDON (102) p. 219. +*L. pomeli*, +*L. sindensis*; BATHER (18) p. 302.
- Lissodiadema*; DELAGE (54) p. 232.
- Lobophora bifissa*; MARTENS (185). *L. truncata* vide *Tretodiscus bisperforatus*.
- Lovenia*; DELAGE (54) p. 268: diagnosis; FOURTAU (83) p. 428: MEISSNER in HAMANN (112) p. 1400. *L. elongata*; BELL (22A): DE MEIJERE (57) p. 193: HERDMAN (120) p. 142: measurements, incl. *Spatangus crux Andreae* Audouin non Lam.; FOURTAU (83) p. 429. *L. gregalis*, tubercles, young (p. 194, pl. x), *L. subcarinata* (p. 194); DE MEIJERE (57).
- Loxechinus* diagnosis; MEISSNER in HAMANN (112) p. 1369. *L. albus*; DE MEIJERE (57) p. 208, 230.
- +*Lysechinus*; DELAGE (54) p. 219: origin of interambulacral; AGASSIZ (3) p. 82.
- +*Macropneustes* diagnosis; MEISSNER in HAMANN (112) p. 1397. *M. brissoides*; DAINELLI (49) p. 195 & (50). *M. decipiens*; BASEDOW (16). *M. pulvinatus*; FUGGER (92) p. 345. *M. trutati*; GOURDON (102) p. 218.
- +*Magnosia*:—*M. decorata* (p. 169), *M. forbesi* (p. 168); LISSAJOUS (153).
- Maretia*; DELAGE (54) p. 268, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1396. *M. alta*; DE MEIJERE (57) p. 192: HERDMAN (120) p. 142. +*M. aragonensis*; GOURDON (102) p. 218. *M. planulata*; HERDMAN (120) p. 142: variation in fascioles; DE MEIJERE (57) p. 190, pl. xxiii. +*M. zeisei* incl. some specimens referred by GAGEL to *Spatangus gottschei*; LAMBERT in Review of GAGEL.
- Melebois* Girard, rejected; MORTENSEN (195) p. 75.
- Mellita* descr.; DELAGE (54) p. 255, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1384. *M. pentapora*, descr., range, young; CLARK (38) p. 565, pl. x.
- Mellitella* diagnosis; MEISSNER in HAMANN (112) p. 1384.
- +*Melonites*; DELAGE (54) p. 219, fig.: defined, synn. *Melonechinus*, *Mel-echinus*; KLEM (142) p. 40: interambulacral; AGASSIZ (3) p. 80. *M. sp.* Julien, 1874, & Tornquist, 1897 (p. 44), *M. crassus* & *M. dispar* descr. (p. 41), *M. etheridgii* (p. 44), *M. irregularis* descr. (p. 41), *M. multiporus* (incl. *M. indianensis*, *M. giganteus*, & *Oligoporus sulcatus*) descr. (p. 42, pls. i-vi), *M. septenarius* descr. (p. 43); KLEM (142).
- +*Melonitesinae* defined with list of genera; DELAGE (54) p. 219.
- +*Melonitidae* defined syn. *Palaeochinidae*, *Melonechinidae*; KLEM (142) p. 27.
- Meoma*; DELAGE (54) p. 270, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1394.
- Mespilia*; DELAGE (54) p. 241. *M. globulus*, DE MEIJERE (57) p. 87: pedicellariae, &c.; MORTENSEN (195) p. 96, pl. vi, vii. *M. levituberculata* (p. 98), *M. whitmaei* syn. of *M. globulus* (p. 97); MORTENSEN (195).
- Metalia*; DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1394: diagnosis, incl. *Prometalia* & *Plagiobrissus*; FOURTAU (83) p. 430; *M. maculosa*, G. of Suez & beaches, measurements, growth-changes; op. cit. p. 431. *M. spatagus* (= *maculosa*); DE MEIJERE (57) p. 184. *M. sternalis*, young, compared with *M. robillardii* & *Xanthobrissus garetti*; op. cit. p. 185, pls. xxii, xxiii: & ? **var. nov. minor**, G. of Suez; FOURTAU (83) p. 432.

†*Metamorphinus convexus*; DEL CAMPANA (55) p. 267.

†*Micraster*; DELAGE (54) p. 268, fig. *M. spp.*; ROWE (235) p. 266. *M. antiquus*; ROUSSEL (234) p. 37. *M. breviporus*; COLLET (44) p. 80: FLEGEL (79). *M. brevis*; GOURDON (102) p. 217: ROUSSEL (232) p. 13, 18. *M. cf. brevis*; ROUSSEL (233) p. 29, 33. *M. coranguinum*; COLLET (44) p. 80: FUGGER (92) p. 339: HINDE (125): ROWE (235) p. 250, 251, 293: diagnosis; JUKES-BROWNE (137) p. 27. *M. corbovis*, diagnosis; op. cit. p. 22. *M. cor-columbarium*; GOURDON (102) p. 217. *M. cortestudinarium*; BURNET (33): COLLET (44) p. 80: JAHN (134) p. 81: diagnosis; JUKES-BROWNE (137) p. 26. *M. de lorioli*; JAHN (134) pp. 81, 83, 89. *M. gibbus* (?); FUGGER (92) p. 339. *M. gourdoni*; GOURDON (102) p. 217. *M. heberti*; ROUSSEL (233) p. 29, 33. *M. incan-nensis* [sic]; COLLET (44) p. 80. *M. leskei*; BURNET (33): diagnosis; JUKES-BROWNE (137) p. 24. *M. praecursor*; ROWE (235) p. 245, 294: diagnosis; JUKES-BROWNE (137) p. 24. *M. senonensis*; COLLET (44) p. 80. *M. testudinarum* [sic]; FUGGER (92) p. 339.

Microcyphus; DELAGE (54) p. 241: distinguished from *Amblypneustes*; MORTENSEN (195) p. 101. *M. annulatus* n. sp., Bass Str. 40 fm. (p. 100, pl. v, vi), *M. elegans* n. sp., Port Philip, = "*M. zigzag*" Bell 1888 (p. 99, pl. vi, vii), *M. maculatus*, pedicellariae, radioles (p. 98, pl. ii, vi, vii) & var. (p. 99), *M. rousseaui* (p. 98); MORTENSEN (195). *M. zigzag*; HALL (111) p. 71: pedicellariae, radioles, &c., incl. specimens named *Amblypneustes ovum*; MORTENSEN (195) p. 9, pl. ii.

†*Micropsis*:—*M. frossardi*; GOURDON (102) p. 223. *M. stachei*; DAINELLI (50): cf. *M. veronensis*; DAINELLI (49) p. 192.

Micropyga discussed; DELAGE (54) p. 232: spicules distinct fr. *Astropyga* (p. 19), pedicellariae (p. 32, pl. iv, v); MORTENSEN (195). *M. tuberculata*, radioles, podia & spicules, pedicellariae (p. 59, pls. xiv, xv), *M. violacea*, descr. (p. 63, pls. iv, xv); DE MEIJERE (57).

Micropygidae n. fam. for *Micropyga*; MORTENSEN (195) p. 45.

Micropyginae [=preceding] defined; DELAGE (54) p. 232.

Moiria; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1392: diagnosis, its claim to the name *Schizaster* rejected, the genotype of the latter thus becoming †*S. studeri*; FOURTAU (83) p. 440. *M. sp.*, radioles, spicules; DE MEIJERE (57) p. 183: this specimen is perhaps young of *M. stygia*; AGASSIZ (3) p. 216. *M. clotho* details of test, compared with *M. atropos*; op. cit. p. 214, pl. cix. *M. stygia*, descr.; FOURTAU (83) p. 441, pl. i.

Moiropsis diagnosis; MEISSNER in HAMANN (112) p. 1393.

Moulinsia diagnosis; op. cit. p. 1385: perh. young *Encope*; DELAGE (54) p. 255.

†*Myriastiches* & *M. gigas*; KLEM (142) p. 74.

Nacospatangus; AGASSIZ (3) p. 200: diagnosis; MEISSNER in HAMANN (112) p. 1398. *N. gracilis* additional details of test; AGASSIZ (3) p. 202, pl. xcvi.

Neolampas diagnosis; MEISSNER in HAMANN (112) p. 1387: apical system; AGASSIZ (3) p. 173, pl. lxiv. *N. rostellata*, details of test; op. cit. p. 119–121, pl. lxiv. *N. tenera*, descr.; DE MEIJERE (57) p. 146, pl. vi, xix.

Neopneustes diagnosis; MEISSNER in HAMANN (112) p. 1399.

†*Noetlingia* sp.; BOULE (30).

Nucleolites (vide etiam *Echinobrissus*); DELAGE (54) p. 264: diagnosis; MEISSNER in HAMANN (112) p. 1385. †*N. bohemicus*; ZAHÁLKA (296) p. 18, 149.

Nucleolitinae; DELAGE (54) p. 263.

†*Offaster*, vide sub *Cardiaster*.

Oligopodia diagnosis; MEISSNER in HAMANN (112) p. 1386.

†*Oligoporus* defined (p. 37), *O. coreyi* descr. (p. 38), *O. danae* descr. (p. 37),

O. minutus (p. 40); KLEM (142). *O. missouriensis* descr.; KLEM (142) p. 38: interambulacra; AGASSIZ (3) p. 79, 80. *O. mutatus*, *O. nobilis* (p. 39), *O. parvus* (p. 40), all descr.; KLEM (142). *O. soreili* n. sp. Visean, Belgium; FRAIPONT (85) p. 10, pls. iii, iv, v.

Opechinus; DELAGE (54) p. 240: maintained for *Pleurechinus variabilis* Doed. & *O. rousseaui*, *hookeri*, *costatus*, *tuberculosus*, *valenciennesi*, *percutus*, *affinis*, all Tertiary, India; MORTENSEN (195) p. 92. *O. spectabilis* n. sp., Kei Is., New Guinea, 129 fm., is the *Temnopleurus hardwicki* of Challenger Rep. p. 107 (p. 94, pl. i, v-vii), *O. variabilis*, pedicellariae, spicules, &c. (p. 94, pl. vi, vii); MORTENSEN (195).

+*Oppenheimia*; DELAGE (54) p. 268.

+*Oriolampas* (v. etiam sub *Plesiolampas*):—*O. lorioli*; GOURDON (102) p. 221.

Orthopsidae Greg., criticised; MORTENSEN (195) p. 44.

+*Orthopsis miliaris*; ROUSSEL (232) p. 15 & (233) pp. 28, 36.

+*Palaechinus* defined, syn. *Typhlechinus* (p. 31), *P.* sp. Julien, 1874, & *P.* sp. Mitchell, 1897 (p. 36), *P.* sp. Tornquist 1897 (p. 37), *P. ellipticus* descr. (p. 31), *P. gigas* descr. (p. 32); KLEM (142). *P. globosus*; PEACH (209) p. 842. *P. intermedius* descr., *P. konincki* [i.e. *koenigi* McCoy, confused with *konincki* Julien], descr.; KLEM (142) p. 33. *P. konincki* (p. 9, pl. iii), *P. lacazei* (p. 9, pls. i, ii); FRAIPONT (85): descr.; KLEM (142) p. 34. *P. paradoxus*, *P. phillipsiae* (p. 35), *P. robineti*, *P. rutoti* (p. 36), *P. sphericus*, descr. (p. 34); KLEM (142).

+*Palechinida* defined with Suborders *Bothriocidaridae*, *Cystocidaridae*, & *Perischoechinidae*; DELAGE (54) p. 216.

+*Palaeëchinoida* as Sub-class, principles of classification, divided into Orders, A. *Cystocidaroida* with Famm. *Palaeodiscidae* & *Echinocystidae*, B. *Bothriocidaroida* with Fam. *Bothriocidaridae*, C. *Perischoëchinoida* with Famm. *Lepidocentr-*, *Lepidesth-*, *Melonit-*, & *Archaeocidaridae*; KLEM (142).

Palaeobrissus (seu *-bryssus*) (vide etiam sub *Argopatagus*); DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (112) p. 1390: ambulacra & apical system; AGASSIZ (3) p. 174.

+*Palaeodiscidae* defined; KLEM (142) p. 12.

+*Palaeodiscus* descr.; DELAGE (54) p. 218: defined, & *P. ferox*, descr.; KLEM (142) p. 12: anatomy; SPENCER (264).

Palaeolampas crassa; BELL (22A).

+*Palaeopedina*? sp.; LAMBERT (148) p. 543, pl. xviii.

Palaeopneustes descr.; DELAGE (54) p. 273: diagnosis; MEISSNER in HAMANN (p. 112) p. 1389: discussed; DE MEIJERE (57) p. 240 & AGASSIZ (3) p. 178. *P. cristatus*; op. cit. p. 178, 180, 183, & figg., pl. xcv, xcvi. *P. fragilis*; op. cit. p. 183: descr.; DE MEIJERE (57) p. 175, 240, pls. ix, xxi, xxii. *P. hemingi* (p. 182), *P. hystrix* details of test, is not to be separated as *Archaeopneustes* (p. 179-186, & figg., pl. xcvi); AGASSIZ (3). *P. spectabilis*; op. cit. p. 180, 183: descr.; DE MEIJERE (57) p. 172, 240, pls. viii, xxi.

Paleopneustidae, as sub-fam. [of *Spatangidae*] incl. *Paleopneustes*, *Lino-*
pneustes, *Homolampas*, *Phrissocystis*, *Argopatagus*, *Genicopatagus*,
Palaeotropus, & *Palaeobrissus* (p. 131), as fam. of "Ananchytid
Spatangoids" (p. 150); AGASSIZ (3).

Palaeostoma descr.; DELAGE (54) p. 272: diagnosis; MEISSNER in HAMANN (112) p. 1402. *P. mirabile*; DE MEIJERE (57) p. 172.

Palaeotropus (v. etiam sub *Argopatagus*); DELAGE (54) p. 270: diagnosis; MEISSNER in HAMANN (112) p. 1401. *P. hironellei* distinctive characters (p. 170), *P. josephinae* (p. 171, figg.); AGASSIZ (3). *P. loveni*; DE MEIJERE (57) p. 200: redescri.; AGASSIZ (3) p. 168, pl. lxxxvii.

Parabrissus; AGASSIZ (3) p. 200.

- Paracentrotus* descr. ; DELAGE (54) p. 243, fig. : diagnosis ; MEISSNER in HAMANN (112) p. 1370. *P. lividus* ; DELAGE (54) p. 243.
- Parasalenia* descr. ; DELAGE (54) p. 245 : diagnosis ; MEISSNER in HAMANN (112) p. 1375. *P. gratio**sa*, compared with *P. pöhlii*, pedicellariae ; DE MEIJERE (57) p. 97, pl. xvii : pedicellariae, incl. *P. pöhlii*, young, specimen recorded from Zanzibar, Bell 1903, is *Stomopneustes variolaris* ; MORTENSEN (195) p. 121, pl. v.
- Parasalenini**ae* ; DELAGE (54) p. 245.
- Paraster* discussed ; FOURTAU (83) p. 435.
- Parechininae* ; DELAGE (54) p. 242.
- Parechinus* descr. ; loc. cit., figg. : diagnosis ; MEISSNER in HAMANN (112) p. 1368. *P. microtuberculatus*, *P. miliaris* ; DELAGE (54) p. 242.
- +*Pedina* ; DELAGE (54) p. 233. *P. arenata* (p. 170), *P. gigas* (p. 169) ; LISSAJOUS (153). *P. lithographica* ; WALTHER (281) p. 167. *P. sublaevis* ; MAIRE (178) : LISSAJOUS (153) p. 169 : not typical form ; LAMBERT in Review.
- Pedinidae* should include *Pedina*, *Caeno-*, *Pseudo-*, *Micro-*, *Leio-*, *Echino-*, *Hemi-*, *Phymo-*, & *Palaeo-pedina*, *Mesodiadema*, *Echinopsis*, *Diademopsis*, *Hecistocyphus*, *Orthopsis*, *Miorthopsis*, *Gymnodiadema* ; MORTENSEN (195) p. 46.
- Pedininae* defined with list of genera ; DELAGE (54) p. 233.
- +*Pedinothuria* ; DELAGE (54) p. 235 : referred to *Pseudodiadematidae* ; MORTENSEN (195) p. 52.
- +*Pelanechinus* descr. ; DELAGE (54) p. 224.
- +*Peltastes* :—*P. clathratus* ; COLLET (44) p. 77. *P. stellulatus* ; STRANGWAYS (266). *P. aff. stellulatus* ; ŻLATARSKI (299). *Peltaster* [sic] *umbrella* ; FORTIN (81).
- Periaster* ; DELAGE (54) p. 271 : distinguished ; TORNQUIST (268) p. 392. *P. limicola* not this genus ; loc. cit. : of Challenger Rep. pl. xxxv^b, f. 1–4 is not this sp. ; AGASSIZ (3) p. 210. +*P. oblongus* vide sub *Linthia*. *P. tenuis* descr., compared with *P. limicola* & *Hemiaster bufo* ; AGASSIZ (3) p. 209, pls. ciii–cv.
- Peripatagus*,—*Perypatagus* [sic] ; DELAGE (54) p. 271 : diagnosis ; MEISSNER in HAMANN (112) p. 1391.
- +*Perischodomus* defined, synn. *Perischodicaris*, *Homotoechus*, *Tretechinus* (p. 18), *P. biserialis* descr. (p. 18), *P. hartei* descr. (p. 19), *P. illinoiensis* descr., *P. magnus* (p. 20) ; KLEM (142).
- +*Perischoechinidae* defined as Suborder with Famm. *Lepidocentrus*, *Lepidesthes*, *Archaeocidaris*, *Melonites*, & *Tiarechinus*-*inae* ; DELAGE (54) p. 217, 218.
- +*Perischoechinoida* defined ; KLEM (142) p. 15.
- +*Permocidaris* ; KLEM (142) p. 74.
- Peronella* discussed, merged in *Laganum* (q. v.), *P. pellucida* ; DE MEIJERE (57) p. 130.
- +*Peroniaster nasutul**us*, vide sub *Hemiaster*.
- Petalocidaris* vide sub *Cidaris* ; DELAGE (54) p. 227 : rejected ; AGASSIZ (3) p. 22.
- +*Pholidocidaris* defined (p. 22), *P. gaudryi* (p. 23), *P. irregularis* incl. *P. meeki*, descr. (p. 22), *P. tenuis* (p. 23) ; KLEM (142).
- Phormosoma* descr. ; DELAGE (54) p. 221 & fig. *P. sp.* ; BELL (22A). *P. sp.* (p. 32, pl. xii), *P. alternans* descr. (p. 31, pls. iii, xii), *P. bursarium*, young individuals, discussion of Agassiz' figures of young *Phormosoma* (p. 28) ; DE MEIJERE (57). *P. hispidum* descr., growth changes (p. 86, pls. A, B, xxx–xlix, also p. 76–79), *P. panamense* descr. (p. 101, figg.) ; AGASSIZ (3). *P. placenta* juv. descr. ; op. cit. p. 100, pls. xliii, xlvi : protechinus stage ; MORTENSEN (195) p. 54, fig. *P. verticillatum* **n. sp.**, B. of Bengal, 678 fm. ; MORTENSEN (194) p. 90, pl. iv, v. *P. zealandiae* **n. sp.**, Challenger Station 169 = *Asthenosoma gracile* ? of Chall. Rep. ; AGASSIZ (3) p. 105, pl. li.

- Phrissocystis* (v. etiam sub *Argopatagus*); DELAGE (54) p. 273 : diagnosis ; MEISSNER in HAMANN (112) p. 1403 : discussed ; AGASSIZ (3) p. 186. *P. aculeata* descr. ; op. cit. p. 187, pls. lxxx-xc. *P. humilis* descr. ; DE MEIJERE (57) p. 198, pls. x, xxiii : criticised ; AGASSIZ (3) p. 187.
- Phyllacanthus* (v. etiam sub *Cidaris*) ; DELAGE (54) p. 227. *P. australis* ; DE MEIJERE (57) p. 12. *P. baculosa* (p. 138). *P. imperialis* (p. 139) ; HERDMAN (120).
- †*Phymosoma*, vide sub *Cyphosoma*.
- Pilematechinus* n. g. of *Urechinidae* for *Cystechinus rathbuni* A. Ag. genotype and *C. vesica* A. Ag. (p. 163), *P. rathbuni* descr. (p. 165, pls. lxxxix-lxxxvi, also p. 122, 124, 130) ; AGASSIZ (3).
- Plagiobrissus*, vide *Metalia*.
- Platybrissus* (seu *-bryssus*) ; DELAGE (54) p. 273 : diagnosis ; MEISSNER in HAMANN (112) p. 1388.
- Plesianthus*, diagnosis ; MEISSNER in HAMANN (112) p. 1382.
- Plesiadiadema* Pomel, rejected in favour of *Dermatodiadema* A. Ag. ; AGASSIZ (3) p. 59 : replaces *Dermatodiadema* (q. v.) ; MORTENSEN (195) p. 38.
- †*Plesiolampas* discussed ; BATHER (18) p. 292 : probably not to be separated from *Oriolampas* ; LAMBERT in Review. *P. saharæ* n. sp., Eocene, Garadimi & Tamaské in Sokoto ; BATHER (18) p. 293 & figg., pl. xi : see also OPPENHEIM (201) p. 253, 283.
- Plesiozonus* ; DELAGE (54) p. 273 : diagnosis ; DE MEIJERE (57) p. 177 & MEISSNER in HAMANN (112) p. 1389 : discussed ; AGASSIZ (3) p. 183. *P. hirsutus*, descr. ; DE MEIJERE (57) p. 178, 240, pls. vii, xxii.
- Pleurechinus* ; DELAGE (54) p. 241 : distinguished fr. *Temnopleurus* ; MORTENSEN (195) p. 91. *P. bothryoides*, descr., probably incl. *Temnopleurus toreumaticus*? juv. Sladen 1879, and *Temnechinus scillae* Mazzetti 1894 ; DE MEIJERE (57) p. 77, pl. xvi, but see p. 202 : holotype descr., pedicellariae, spicules, &c. ; MORTENSEN (195) p. 83, pls. vi, vii. *P. doederleini* n. sp., G. of Siam, 5-9 fm. ; op. cit. p. 77, pls. i, ii, vi, vii. *P. maculatus* n. sp., Macclesfield Bank, = "*Temnopleurus bothryoides*" Bell, and other Indo-Pacific locc. ; op. cit. p. 89, pl. i : also with *P. reticulatus* n. sp. ; MORTENSEN in DE MEIJERE (57) p. 202, 228. *P. ruber*, maintained (p. 82), pedicellariae, &c. (p. 84, pl. vi, vii), *P. scillae* (Mazzetti sub *Temnechinus*) holotype examined, species redescri., incl. *P. reticulatus* Mrtnsn in Meijere (p. 86, pls. i, ii, vi, vii) ; MORTENSEN (195). *P. siamensis* n. sp., G. of Siam, 3-38 fm., and other Indo-Pacific locc., n. var. *pulchellus*, Amirante and Maldive Is. ; op. cit. p. 79, pls. i, ii, vi, vii : also MORTENSEN in DE MEIJERE (57) pp. 202, 228. *P. variabilis* ; DE MEIJERE (57) p. 79, 202 : these specimens are partly *Genocidaris* sp. nondescr. (p. 94), but the species is an *Opechinus* (p. 82), *P. variegatus* n. sp., Formosa Channel and Japanese Seas (p. 84, pls. i, ii) ; MORTENSEN (195).
- Plexechinus* ; DELAGE (54) p. 267 : diagnosis ; MEISSNER in HAMANN (112) p. 1405 : discussed, compared with *Urechinus* et al. ; AGASSIZ (3) p. 148. *P. cinctus*, descr. ; op. cit. p. 150, pls. lv, lviii-lx, also p. 130.
- Podocidaris* ; DELAGE (54) p. 237. *P.* sp., young, compared with *P. prionigera* and *P. sculpta* ; DE MEIJERE (57) p. 68, pl. xvi.
- Porocidaris* ; DELAGE (54) p. 228, fig. : discussed ; AGASSIZ (3) p. 24. *P. cobosi*, shape of test (p. 1, f. 4), size of actinal system (p. 3, f. 13), anal plates in young (p. 6, f. 20, 21), growth of coronal plates (p. 11, f. 30-42), descr. and discussed (p. 29, pls. ix-xiii) ; AGASSIZ (3). *P. maculicollis*, vide *Cidaris*. *P. milleri* ; DE MEIJERE (57) p. 27 : shape of test (p. 1, f. 6), growth of ambulacra (p. 2, f. 7-10), size of actinal system (p. 3, f. 11) anal plates in young (p. 5, f. 16-19), descr. and discussed (p. 25, pls. vi-viii, x) ; AGASSIZ (3). †*P. pseudoserrata* ; CHECCHIA (37). †*P. schmideli* ; DAINELLI (49) p. 192, & (50).
- Pourtulesia*, descr. ; DELAGE (54) p. 266, figg. : diagnosis ; MEISSNER in

- HAMANN (112) p. 1405 : suggested sections, (a) typical for *P. miranda*, *tanneri*, *laguncula*, & *jeffreysi*, (b) *P. phiale*, (c) *P. ceratopyga* & *rosea*, (d) *P. hispida* (p. 141); AGASSIZ (3). *P. carinata*; BELL (22A): actinal area (p. 127, 128), ditto of *P. ceratopyga* (p. 128) & of *P. hispida* (p. 128, 129); AGASSIZ (3). *P. jeffreysi*, distrib.; GRIEG (106) p. 14: measurements, slight variations; MICHAÏLOVSKIJ (192) p. 163, 184, fig.: actinal area, anal, and apical systems; AGASSIZ (3) p. 126, 128, 129, 134, 135, 137, 138. *P. laguncula*, radioles; DE MEIJERE (57) p. 171, pl. xxi: actinal area; AGASSIZ (3) p. 129, 135. *P. miranda*, older individuals descr. (p. 139, figg.), *P. phiale*, actinal area (p. 129), *P. tanneri*, descr. (p. 132, pls. B, lv-lvii, also p. 125-129); AGASSIZ (3).
- Pourtalesiae* A. Ag., morphology of test (p. 121-132), suggested exclusion of *Urechinidae* & *Paleopneustidae*, and limitation to *Pourtalesia*, *Echinocrepis*, *Spatagocystis*, *Pleurechinus*, & *Sternopatagus* (p. 131); AGASSIZ (3).
- Pourtalesidae*, fully discussed; DE MEIJERE (57) p. 157-171.
- +*Prenaster alpinus*; FUGGER (92) p. 339: GOURDON (102) p. 220.
- Prionechinus*, discussed; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *P. forbesianus*, descr. (p. 71, pls. iv, xvi), *P. sagittiger*, descr. (p. 70, pl. xvi); DE MEIJERE (57).
- +*Procidaris*; DELAGE (54) p. 228.
- Progonolampas*; DELAGE (54) p. 265.
- Prometalia* vide *Metalia*.
- +*Proterocidaris* & *P. giganteus*; KLEM (142) p. 74.
- +*Protocidaris*; KLEM (142) p. 75: perh. young *Echinocystis*; DELAGE (54) p. 217. *P. acuaris*; KLEM (142) p. 75.
- +*Protoechinus* & *P. anceps*; KLEM (142) p. 75.
- Psammechinus* descr.; DELAGE (54) p. 243: diagnosis; MEISSNER in HAMANN (112) p. 1371. +*P. dubius*; DOUXAMI (69) p. 561: descr., distrib.; SCHUETZE (251) p. 166, pl. iii. +*P. gillieronii*; ZLATARSKI (299). *P. microtuberculatus*; PARONA (207) p. 384: vide etiam sub *Parechinus*. *P. miliaris*; FUEHNER (89) & (90): GARBOWSKI (94): †determined by T. MORTENSEN; PETERSEN (215) p. 81: vide etiam sub *Parechinus*. +*P. peroni*; COUFFON (46) p. 41. *P. rufus* (Bell sub *Salmacis*) incl. *Gymnechinus pumilio*; MORTENSEN (195) p. 122, pl. v, vii. *P. variegatus*; DELAGE (54) p. 243. *P. verruculatus*, colour; MORTENSEN (195) p. 123: pedicellariae; DE MEIJERE (57) p. 88, pl. xvii.
- +*Pseudasterostoma* discussed; DE MEIJERE (57) p. 242.
- Pseudechinus* descr.; DELAGE (54) p. 246, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1375: rejected; LORIOU (162) p. 20.
- Pseudoboletia*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1373. *P. indiana* syn. of *P. maculata*; DE MEIJERE (57) p. 208. *P. maculata*; HERDMAN (120) p. 139: pedicellariae; DE MEIJERE (57) p. 96, pl. xvii.
- Pseudocentrotus*; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1373.
- +*Pseudocidaris clunifera*; ZLATARSKI (299).
- +*Pseudodiadema*; DELAGE (54) p. 235: distinct from *Diadema*; MORTENSEN (195) p. 47. *P. aspera*; WALTHER (281) p. 167. *P. bourgueti*; KARAKASCH (138) p. 15. *P. brongniarti*, distinguished from *P. variolare*; JUKES-BROWNE (137) p. 455. *P. conforme*; LISSAJOUS (153) p. 161. *P. depressum*; op. cit. p. 159: STRANGWAYS (266) p. 15: ?; CLERC (42) p. 99. *P. inaequale*, compared with *P. wrighti*, a deformity; LISSAJOUS (153) p. 159. *P. jauberti* Cott. is *Hessotiarra*; LAMBERT (148) p. 543. *P. jobae*; LISSAJOUS (153) p. 159. *P. mackiei*, maintained; JUKES-BROWNE (137) p. 456. *P. mamillanum* (p. 162),

- P. neglectum* (p. 161); LISSAJOUS (153). *P. pentagonum*; CLERC (42) p. 100: STRANGWAYS (266) p. 23. *P. primaevum* n. sp., Hettangian of Vendée; LAMBERT (148) p. 540, pl. xviii. *P. princeps*, *P. priscum* (p. 161), *P. subcomplanatum* (p. 159), *P. superbum*, with a swelling (p. 160, pl. ii); LISSAJOUS (153). *P. vagans*; STRANGWAYS (266) p. 15, 23. *P. variolare*; WOLLEMANN (290). *P. versipora*; STRANGWAYS (266) p. 40, 54, 59. *P. wrighti*; LISSAJOUS (153) p. 159.
- +*Pseudodiadematidae* doubtfully accepted; MORTENSEN (195) p. 46.
- +*Pseudodiadematinae*, with list of genera; DELAGE (54) p. 234.
- +*Pseudopedina divionensis*?; LISSAJOUS (153) p. 170.
- +*Pseudosalenia cuevasensis* n. sp., Lower Cretaceous, Honduras; LORIOI (162) p. 57, pl. iv.
- +*Pygaster*:—*P. semisulcatus*; STRANGWAYS (266) p. 9: LISSAJOUS (153) p. 172. *P. trigeri*; op. cit. p. 173.
- Pygastrides* diagnosis; MEISSNER in HAMANN (112) p. 1379.
- +*Pygorhynchus aragonensis*; GOURDON (102) p. 221.
- +*Pygurus*:—*P. depressus* incl. *P. michelini*; LISSAJOUS (153) p. 177. *P. pentagonalis*; STRANGWAYS (266) p. 40, 49. *P. royeri*; LISSAJOUS (153) p. 177.
- +*Pyrina*:—*P. carinata*; FUGGER (92) p. 339: *P. freuchenii*; TÖRNEBOHM (267) p. 143. *P. guerangeri*; LISSAJOUS (153) p. 174: this is a *Menopygus* (*Pyrinodia*); LAMBERT in Review. *P. ovulum*; ROUSSEL (232) p. 15 & (233) p. 28. *P. parryi*; RICHARDSON (227) p. 48. *P. petrocoriensis*; ROUSSEL (232) p. 15 & (233) pp. 28, 36.
- Ravenellia*; DELAGE (54) p. 255.
- Regulariae* [sic] defined, with Orders *Palechin*-, *Echinothur*-, *Cidar*-, & *Diadem-ida*; DELAGE (54) p. 215.
- Rhabdobryssus* (seu- *bryssus*); DELAGE (54) p. 268: diagnosis; MEISSNER in HAMANN (112) p. 1398.
- Rhabdocidaris*; DELAGE (54) p. 228: diagnosed, and adopted in sense of de Loriol 1882; FOURTAU (83) p. 409. *R. annulifera*, vide sub *Cidaris bispinosa*, *baculosa*. *R. baculosa*, G. of Suez, also †near Suez; FOURTAU (83) p. 410. †*R. caprimontana*; SIEMIRADZKI (255) p. 141. †*R. delgadoi* Loriol 1887 non 1889, radioles descr.; LORIOI (162) p. 65, pl. iv. †*R. heuvelini*, distinguished from *R. ferryi*; LAMBERT in Review of LISSAJOUS (153). *R. imperialis* incl. *R. dubia*, G. of Suez also †at entrance of gulf; FOURTAU (83) p. 411. †*R. maxima*; STRANGWAYS (266) p. 15 & fig. †*R. nobilis*; SIEMIRADZKI (255) p. 141. †*R. phillipsi*; STRANGWAYS (266) p. 59. †*R. pouechi*; GOURDON (102) p. 222. †*R. remus*, †*R. suevica*; SIEMIRADZKI (255) p. 141.
- Rhinobryssus*, diagnosis; MEISSNER in HAMANN (112) p. 1395.
- +*Rhoechinus* defined (p. 27), *R.* sp. Duncan 1889 (p. 30), *R. burlingtonensis* descr. (p. 27); KLEM (142). *R. elegans*; FRAIPONT (85) p. 10, pl. ii: descr.; KLEM (142) p. 28. *R. gracilis* (p. 29), *R. irregularis*, *R. quadriserialis* (p. 30), all descr.; KLEM (142).
- Rhynchopygus*, diagnosis; MEISSNER in HAMANN (112) p. 1386. *R. caribaeorum*, details of text; AGASSIZ (3) p. 119, figg. †*R. marmini*; TÖRNEBOHM (267) p. 136. *R. pacificus*, ambulacrals; AGASSIZ (3) p. 118, 121.
- Rotula* descr.; DELAGE (54) p. 255: diagnosis; MEISSNER in HAMANN (112) p. 1384.
- Rumphia orbicularis*; MARTENS (185).
- Salenia* descr.; DELAGE (54) p. 235, fig. †*S. areolata*; TÖRNEBOHM (267) p. 136. †*S. bourgeoisi*; ROUSSEL (232) p. 15 & (233) pp. 28, 36. †*S. colleti*, Lambert's description quoted; COLLET (44) p. 64, pl. ii. *S. goesiana*, discussed; AGASSIZ (3) p. 36. †*S. granulosa*; ROWE (235) p. 241, 252, 256, 293. *S. hastigera*; AGASSIZ (3) p. 37, pl. xx: radioles; DE MEIJERE (57) p. 43. *S. miliaris* descr., growth-stages; AGASSIZ

- (3) p. 36, 41, pls. xiv-xx. *S. pattersoni*, structural details; op. cit. p. 37, 46, pl. xx: radioles, colour, &c.; DE MEIJERE (57) p. 43. *S. varispina*, holotype very young, redescr. (p. 35, pl. xxi), comparison with *S. miliaris* (p. 45 et sqq. & figg.); AGASSIZ (3).
- Salenidae*, relations to *Cidaridae* & *Echinidae*; AGASSIZ (3) p. 34: brief systematic account; FRITEL (86).
- Saleniinae* defined with list of genera; DELAGE (54) p. 235.
- Salenina* defined with Fam. *Saleniinae*; DELAGE (54) p. 235.
- Salmacis*; DELAGE (54) p. 241: distinguished from *Temnopleurus*; MORTENSEN (195) p. 76. *S. bicolor*; DE MEIJERE (57) p. 85, 203: HERDMAN (120) p. 140: & var. *rarisipina*, pedicellariae & spicules, incl. *S. globatrix*, but excl. various specimens placed here by authors; MORTENSEN (195) p. 65, pls. vi, vii. *S. desmoulinsi* Dujardin & Hupé, err. typ. pro *S. dussumieri*; op. cit. p. 74. *S. dussumieri*; HERDMAN (120) p. 140: radioles, pedicellariae, & young; DE MEIJERE (57) p. 85: spicules; MORTENSEN (195) p. 72, pl. vii. *S. ?elegans* Bell 1899 is *Coelopleurus maillardi*; DE MEIJERE (57) p. 68 & MORTENSEN (195) p. 74. *S. globator*; l. c. *S. rarisipina*, descr., also young; DE MEIJERE (57) p. 83, pl. v: holotype examined, not specifically distinct fr. *S. bicolor*; MORTENSEN (195) p. 67. *S. rubrotinctus*; op. cit. p. 74. *S. rufa* Bell, incl. *Gymnechinus pumilio* (q. v.), & is probably *Psammechinus* (q. v.); DE MEIJERE (57) p. 203. *S. sphaeroides*, radioles, pedicellariae, & young; op. cit. p. 82, pl. xvii: incl. *S. sulcata* Ag. & Des., pedicellariae, spicules, buccal membrane, also var. *pyramidata*, but var. *belli* is distinct sp.; MORTENSEN (195) p. 70, pls. v, vi: var. *belli*; DE MEIJERE (57) p. 203. *S. sulcata*; HERDMAN (120) p. 140: Auctt., synn. of various spp.; MORTENSEN (195) p. 74. *S. varius*; l. c. *S. virgulata*, holotype examined, pedicellariae, spicules, incl. *S. conica*, & var. *alexandri*; MORTENSEN (195) p. 68, pls. vi, vii: radioles, pedicellariae (p. 83, pl. xvii), var. *alexandri* (p. 202); DE MEIJERE (57). *S. woodsi*, probably a monstrosity; MORTENSEN (195) p. 74.
- Salmacopsis*; DELAGE (54) p. 241. *S. olivacea*, pedicellariae &c.; MORTENSEN (195) p. 96, pl. vi, vii.
- Schizaster* descr.; DELAGE (54) p. 270, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1392, & FOURTAU (83) p. 433 (vide etiam sub *Moiria*): list of spp. according to apical system, distinguished from other genera, esp. *Linthia*; TORNQUIST (268). †*Schizaster* sp. (= *scillae* Desor); SCHUETZE (251) p. 185. †*S. abductus*; BASEDOW (16). †*S. acuminatus*; TORNQUIST (268) p. 383. *S. canaliculata*; AGASSIZ (3) p. 207, fig. *S. canaliferus*; TORNQUIST (268) p. 376, pl. †*S. aff. degrangei*; GOURDON (102) p. 220. *S. fragilis*; AGASSIZ (3) p. 207, fig.: BELL (22A): TORNQUIST (268) p. 375, pl.: measured; MICHAILOVSKIJ (192) p. 163. *S. gibberulus*; HERDMAN (120) p. 142: L. Ag.'s holotype now destroyed was the specimen figd. by Savigny, pl. vii, f. 5, not f. 6; FOURTAU (83) p. 434, fig. †*S. globulus*; DAINELLI (49) p. 195 & (50). †*S. hova* nondum descr.; TORNQUIST (268) p. 378, pl. [Tornquist refers to a paper by himself at press in Abh. Senckenberg. Nat. Ges. 1904. So far I have been unable to see, borrow, or buy this]. *S. japonicus*, radioles, spicules; DE MEIJERE (57) p. 183, pl. xxii. †*S. lacunosus*; BELLINI (23) p. 5. *S. latifrons* descr., young; AGASSIZ (3) p. 205, pl. cii. *S. limicola*; MARTENS (185). †*S. major*; PATRINI (208). *S. philippii*; AGASSIZ (3) p. 206, figg. †*S. rousseli*; GOURDON (102) p. 220. *S. savignyi* n. sp. pro *S. gibberulus* A. Ag. non L. Ag., Savigny pl. vii, f. 6, G. of Suez (p. 436, pl. i, & fig.) var. nov. *major*, Bay of Mirsa Thlemel (p. 439, pl. i), types in Mus. hist. nat. Paris; FOURTAU (83). †*S. spado*; TORNQUIST (268) p. 387, pl. *S. townsendi* descr., young; AGASSIZ (3) p. 207, pls. c, ci. †*S. vicinalis*; GOURDON (102) p. 219.
- Schizechininae*; DELAGE (54) p. 244.

- Schizocidaris*; DELAGE (54) p. 228.
- †*Scutella* descr.; DELAGE (54) p. 254. *S. aberti*; CLARK (39) p. 432, pls. cxix, cxx. *S. deflersi*; BARRON (15) p. 607. *S. helvetica*; SCHUETZE (251) p. 172. *S. interlineata*; HAEHL (110) p. 24. *S. cf. paulensis*, descr., distrib. of sp.; SCHUETZE (251) p. 170, pl. iv. *S. striatula*, single specimen in coll. M. de Serres, from l'Hérault, is same as *S. ja[c]quemeti* Lor., which name should be used?; LORIOI (162) p. 67.
- Scutellinae* defined with list of genera; DELAGE (54) p. 254.
- Selenechinus*; DELAGE (54) p. 246: **n.g.** of *Echinometridae*, not diagnosed, but with genotype *S. armatus* **n. sp.**, Sulu Sea?, compared with *Helicoidaris* & *Pseudechinus*; DE MEIJERE (57) p. 99, pls. v, xvii.
- Spatangida* defined (p. 248) descr. (p. 256) with Famm. *Cassidul*-, *Holaster*-, & *Spatanginae* (p. 263); DELAGE (54).
- Spatangidae*, vide *Eobrius*.
- Spatanginae* defined with list of genera in groups *Prymnodesminae*, *Prymnadetinae*, *Adetinae*; DELAGE (54) p. 267.
- Spatagocystis*; l. c.: diagnosis; MEISSNER in HAMANN (112) p. 1405. *S. challengeri*, additional details from an undescribed Challenger specimen; AGASSIZ (3) p. 141, pls. lxx, lxxi also p. 122, 123, 127, 128, 130.
- Spatagodesma*; DELAGE (54) p. 271: diagnosis; MEISSNER in HAMANN (112) p. 1406: compared with *Agassizia* (p. 198), apical system (p. 173, f. 289, pl. cvi). *S. diomedae* descr. (p. 200, pls. cvi, cvii); AGASSIZ (3).
- †*Spatangopsis*, & *S. costata*; KLEM (142) p. 75.
- Spatangus* descr.; DELAGE (54) p. 267, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1396. †*S. delphinus*; DOUXAMI (69) p. 561: descr., distinguished from *S. desmaresti*, comparative measurements, distrib.; SCHUETZE (251) p. 181, pl. v: differs from Burdigalian type; LAMBERT in Review. †*S. deydieri*; DOUXAMI (69) p. 561. †*S. gottschei* Gage is a *Marettia*; LAMBERT in Review of GAGEL. †*S. ocellatus*; SCHUETZE (251) p. 185. †*S. prunella*; LAMBERT (147) p. 21, 22. *S. purpureus*; CLERC (41); HENRI (116) p. 13: MAR. BIOL. ASS. (184) p. 211. *S. raschi*; BELL (22A).
- Sperosoma* descr.; DELAGE (54) p. 224, fig.: origin of ambulacrals; AGASSIZ (3) p. 81. *S. quincunciale* **n. sp.**, S. of Timor, 883 m.; DE MEIJERE (57) p. 40, pl. xiii.
- Sphaerechinus* descr.; DELAGE (54) p. 244, figg.: diagnosis; MEISSNER in HAMANN (112) p. 1373. *S. australiae* is young of *Pseudoboletia maculata*; DE MEIJERE (57) p. 208. *S. granularis*; DI MAURO (63); HENRI (116) p. 13: HERBST (117); VIGUIER (277).
- †*Spilecia*, placed in *Arbaciinae*; DELAGE (54) p. 238.
- Stegaster*; DE MEIJERE (57) p. 170.
- †*Stenonia* discussed; DE MEIJERE (57) p. 242.
- Stephanocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 228. *S. bispinosa*; HERDMAN (120) p. 138: incl. *Cidaris luetkeni*, holotypes examined, descr., young; MORTENSEN (195) p. 6, pl. iii-v.
- Sterechinus*; DELAGE (54) p. 243: diagnosis; MEISSNER in HAMANN (112) p. 1370: discussed and restricted to *S. antarcticus*; LORIOI (162) p. 16. *S. magellanicus*; DE MEIJERE (57) p. 208.
- Stereocidaris* (vide etiam sub *Cidaris*); DELAGE (54) p. 227, fig.: cause of absence of apical radioles; DE MEIJERE (57) p. 6. *S. canaliculata* (p. 691), *S. nutrix* (p. 690); LUDWIG (164). †*S. sceptriifera*; WOLLEMAN (289).
- Stereopneustes*; DELAGE (54) p. 265: diagnosis; MEISSNER in HAMANN (112) p. 1403: diagnosis (p. 147) compared with *Urechininae* (p. 151) & *Echinocorytidae* (p. 152), *S. relictus*, described (p. 148, 239, pls. v, xix, xx); DE MEIJERE (57).
- Sternopatagus*; DELAGE (54) p. 267: discussed; AGASSIZ (3) p. 131:

diagnosis ; MEISSNER in HAMANN (112) p. 1404 : diagnosis (p. 154) systematic position discussed (p. 160), *S. sibogae* descr. (p. 155, 239, pls. vii, xx, xxi) ; DE MEIJERE (57).

+*Stirechinus suevicus* n. sp., Helvetian, Bryozoa sand of Ursendorf, Suabia ; SCHUETZE (251) p. 169, pl. iii.

"Stomechinien" Pomel, discussed ; DELAGE (54) p. 238.

+*Stomechinus* :—*S.* spp. nondescr. ; WELSCH (283) p. 27. *S. aroviensis* ; SIEMIRADZKI (255) p. 141. *S. germinans* ; LISSAJOUS (153) p. 170. *S. perlatus* ; WALTHER (281) p. 167. Ditto ?, *S. serratus*, *S. sulcatus* ; LISSAJOUS (153) p. 171.

Stomopneustes descr. ; DELAGE (54) p. 241. *S. variolaris* ; DE MEIJERE (57) p. 87 ; HERDMAN (120) p. 139.

Stomopneustesinae defined with list of genera ; DELAGE (54) p. 241.

Stomopneustidae maintained ; MORTENSEN (195) p. 47.

Strongylocentrotinae ; DELAGE (54) p. 245.

Strongylocentrotus descr. ; DELAGE (54) p. 245, figg. : diagnosis ; MEISSNER in HAMANN (112) p. 1374. *S. drobachiensis* ; BERTRAND (27) : KIAER (140) : MICHAILOVSKIJ (192) p. 162 : descr., range ; CLARK (38) p. 563, pl. ix. *S. erythrogrammus* ; HALL (111) p. 71. *S. lividus* ; +ACLAND (2) : see II, c, vii ; BERTOLO (26) : DI MAURO (63) : DUBUISSON (73) : FUEHNER (90) : HENRI (116) p. 11–13 : HERBST (117) & (119) : NOBRE (198) p. 55 & (199) : PETRUNKEWITSCH (217) : VIGUIER (277) : ZIEGLER (298) : vide etiam sub *Paracentrotus*. *S. purpuratus* ; LOEB (155, 156, 158, 159).

Studeria diagnosis ; MEISSNER in HAMANN (112) p. 1387.

Temnechininae, sub-fam. of *Temnopleuridae* (q. v.) replaces *Trigonocidarinae* ; MORTENSEN (195) p. 112.

Temnechinus, no proof of viviparity ; AGASSIZ (3) p. 220. +*T. gajensis*, +*T. stellulatus* ; MORTENSEN (195) p. 93.

+*Temnocidaris danica* ; TÖRNEBOHM (267) p. 143.

Temnopleuridae, classification discussed (p. 56) subfam. 1. *Temnechininae* for *Hypsiechinus*, *Prionechinus*, *Genocidaris*, *Trigonocidaris*, *Temnechinus*, *Opechinus*, *Ortholophus*, *Paradoxechinus*, *Coptophyma*, *Lepidopleurus*, 2. *Temnopleurinae* for *Temnopleurus*, *Pleurechinus*, *Salmacis*, *Salmacopsis*, *Mespilia*, *Microcyphus*, *Amblypneustes*, *Goniopneustes*, *Holopneustes* (p. 113) ; MORTENSEN (195).

Temnopleurinae, as Fam. ; DELAGE (54) p. 241 : as subfam. of *Temnopleuridae* (q. v.) ; MORTENSEN (195) p. 113.

Temnopleurus distinguished from *Salmacis* (p. 76), *T. cavernosus* is *Pleurechinus*, perhaps *P. bothryoides* (p. 64), *T. hardwicki* maintained, though cotypes are doubtful, incl. *T. japonicus* (p. 61), *T. reevesi*, incl. *T. reynaudi* A. Ag. et Auctt., non Ag. & Desor, pedicellariae & spicules descr. (p. 62, pls. vi, vii) ; MORTENSEN (195). *T. reynaudi*, pedicellariae & young ; DE MEIJERE (57) p. 81, pls. xvi, xvii. *T. toreumaticus* ; HERDMAN (120) p. 140 : +FOURTAU (83) p. 444 : radioles, pedicellariae ; DE MEIJERE (57) p. 80, 202, pl. xvi : incl. *T. reynaudi*, *T. granulatus*, but not *T. hardwicki*, also excl. many specimens placed here by authors, pedicellariae and spicules descr. ; MORTENSEN (195) p. 58, pl. vi, vii.

Temnopleurusinae defined with list of genera ; DELAGE (54) p. 239.

Temnotrema rejected, *T. sculpta* ; MORTENSEN (195) p. 61.

+*Tetracidaris* ; DELAGE (54) p. 229 : origin of interambulacra ; AGASSIZ (3) p. 82.

Tetrodiscus diagnosis, incl. *Echinodiscus* & *Lobophora* (p. 423), *T. auritus*, variations, G. of Suez and +beaches (p. 425), *T. bisperforatus* (= *biforis*), G. of Suez and +beaches, the latter confused by Walther with *Amphiope fuchsi*, measurements, incl. *Lobophora truncata* (p. 426) ; FOURTAU (83).

- +*Thylechinus*; DELAGE (54) p. 238.
 +*Tiarechinus*; DELAGE (54) p. 219.
 +*Tiarechinusinae* defined, incl. *Lysechinus*; DELAGE (54) p. 219.
 +*Tiarinae*; DELAGE (54) p. 234.
 +*Tipocidaris*:—*T. clavigera* (p. 76), *T. hirudo* (pp. 70, 77); COLLET (44).
Toreumatica rejected (p. 61) but might be used for *Temnopleurus reevesi* (p. 76); MORTENSEN (195).
 +*Toxaster*:—*T. complanatus*; STRANGWAYS (266) p. 73. *T. texanus*; UDDEN (273) p. 35, 37.
Toxobrissus distinguished from *Brissopsis* (p. 193), *T. pacificus* descr. (p. 192, pls. ciii, cv); AGASSIZ (3).
Toxocidaris; DELAGE (54) p. 246: diagnosis; MEISSNER in HAMANN (112) p. 1376.
Toxopneustes descr.; DELAGE (54) p. 244, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1372. +*T. delaunayi*; COUFFON (46) p. 41. *T. lividus*, vide sub *Paracentrotus*. *T. pileolus*; HERDMAN (120) p. 140: radioles, spicules, pedicellariae; DE MEIJERE (57) p. 92, pl. xvii: distinguished from *Echinus trizonalis* & *Boletia bizonata*; MORTENSEN (195) p. 120. *T. variegatus*, vide sub *Psammechinus*.
Toxopneustesinae defined with list of genera; DELAGE (54) p. 243.
 +*Trachyaster* (v. etiam sub *Hemiaster*):—*T. gourdoni*, *T. trutati*; GOURDON (102) p. 220.
 +*Trachypatagus meneghinii*; DAINELLI (50), & descr. (49) p. 197, pl. xv.
Tretocidaris; DELAGE (54) p. 228.
Trigonocidarinae; DELAGE (54) p. 240.
Trigonocidaris descr.; DELAGE (54) p. 240, fig.: diagnosis; MEISSNER in HAMANN (112) p. 1367. *T. albida*, Sulu Is., var. (p. 73, 202), *T. monolini* referred to *Genocidaris* (q. v.) (p. 74); DE MEIJERE (57).
Triopneustes descr.; DELAGE (54) p. 244: diagnosis; MEISSNER in HAMANN (112) p. 1372. *T. gratilla*; MARTENS (185) p. 131: (= *variegatus* & *angulosus* Leske), colour, spicules; DE MEIJERE (57) p. 95.
Tripylus; DELAGE (54) p. 271, fig.
Tromikosoma; DELAGE (54) p. 223, fig. *T. mordens* n. sp., S. of Timor, 2050m.; DE MEIJERE (57) p. 39, pl. xiii.
Urechinidae, n. fam. for *Urechinus*, *Cystechinus*, *Calymne*, *Phrissocystis*; MEISSNER in HAMANN (112) p. 1402: as sub-fam. [of *Spatangidae*?], incl. *Urechinus*, *Cystechinus*, *Pilematechinus* n. g., & *Calymne* (p. 131), as fam. of "Ananchytid *Spatangoids*" (p. 150), as sub-fam. of *Ananchytidae* (p. 152); AGASSIZ (3).
Urechinus diagnosis; MEISSNER in HAMANN (112) p. 1402. *U. giganteus* descr.; AGASSIZ (3) p. 152, pls. lxxii-lxxiv, also p. 130. *U. naresianus*; BELL (22A): actinal area (p. 122, 130, 154 & figg.) apical system (p. 156 & fig., pl. lxxiv); AGASSIZ (3).
 +*Xenocidaris*, *X. clavigera*, *X. conifera*, *X. cylindrica*; KLEM (142) pp. 75-76.
 +*Zeuglopleurus*; MORTENSEN (195) p. 112. *Z. rowei*, in *Marsupites* zone; ROWE (235) p. 255, 256, 293.

(D.)—ASTEROIDEA.

Asteridia divided into Subclass 1, *Palasteridiae*, 2, *Euasteridiae*, the latter alone into Orders 1, *Phanerozonida*, 2, *Cryptozonida*, each with its Families; DELAGE (54) p. 82 sqq.
Acantharchaster; DELAGE (54) p. 86.
Acanthaster; op. cit. p. 102. *A. solaris*; MARTENS (185).
Acanthasterinae; DELAGE (54) p. 102.

Acodontaster; DELAGE (54) p. 87.

Amphiaster; DELAGE (54) p. 93.

Anasterias; op. cit. p. 103. *A. belgicae*, *A. chiophora*; LUDWIG (164) p. 699. *A. perrieri*; MEISSNER (186) p. 12. *A. studeri*; loc. cit.: LUDWIG (164) p. 698.

Anthenea, descr.; DELAGE (54) p. 91. *A. sp.*; HERDMAN (120) p. 144. †*A. schlumbergeri* descr.; LORIOI (162) p. 63, pl. iv.

Antheneinae, defined, with list of genera; DELAGE (54) p. 91.

Antheniaster; DELAGE (54) p. 91.

Anthenoides; DELAGE (54) p. 91.

Archaster descr.; DELAGE (54) p. 85. *A. sp.*; KIAER (140).

Archasteridae, vide *Goniodon*.

Archasterinae defined, with list of genera; DELAGE (54) p. 85.

Asteracanthion rubens; JANNSENS (136).

Asterias (vide etiam sub *Diplasterias*): descr.; DELAGE (54) p. 103, figg.: brachiolaria; WEYSSE (284) p. 91, 92, figg. *A. sp.*; LUDWIG (164) p. 697, 698. *A. antarctica*; loc. cit.: descr.; LORIOI (162) p. 36, pl. iv: incl. all S. American monacanthid spp.; MEISSNER (186) p. 10, pl. i. *A. austera*, descr., range; CLARK (38) p. 555, pls. ii, iv. *A. capitata*; LOEB (158, 159). *A. compta*, syn. of *A. tenera*; CLARK (38) p. 554. *A. (Polyasterias) fernandensis*, descr.; LORIOI (162) p. 41, pl. iii. *A. forbesi*, descr., range; CLARK (38) p. 552, pls. i, iv. *A. glacialis*; CLERC (41): DELAGE (52): GARBOWSKI (93): HERBST (117): HÉROUARD (122): MAR. BIOL. ASS. (184) p. 208: NOBRE (198) p. 52, & (199). *A. lincki*; MICHAÏLOVSKIJ (192) p. 165. †*A. cf. lumbricalis*; SCHAEFER (242) p. 31. *A. (Cosmasterias) lurida* descr.; LORIOI (162) p. 39, pl. iii. *A. muelleri*; LUDWIG (164) p. 697: northern var., probably = *A. hyperborea* Dan. & Kor.; MICHAÏLOVSKIJ (192) p. 165. *A. ochracea*; LOEB (158, 159). *A. pallida*, homonym of *A. vulgaris*; CLARK (38) p. 554. *A. panopla*; MICHAÏLOVSKIJ (192) p. 165. *A. perrieri*; LUDWIG (164) p. 698. *A. polaris*; ÖSTERGREN (202). *A. rubens*; DUBOIS (72): GIARD (100): KIAER (140): MAR. BIOL. ASS. (184) p. 208: NOBRE (198) p. 53, & (199). *A. tenera*, incl. *A. compta*, descr., range; CLARK (38) p. 554, pls. ii, iv. *A. tenuispina*; NOBRE (199). *A. vulgaris*; WEYSSE (284) p. 94, fig.: descr., range; CLARK (38) p. 553, pls. i, iv.

Asteriasinae, defined with list of genera; DELAGE (54) p. 103.

Asterina, descr.; DELAGE (54) p. 94, figg. *A. cepheus*; HERDMAN (120) p. 145: MARTENS (185). *A. coronata*, *A. exigua*, op. cit. *A. fimbriata*; MEISSNER (186) p. 16. *A. gibbosa*; MAR. BIOL. ASS. (184) p. 207: NOBRE (198) p. 53 & (199). *A. perrieri* n. sp., Port San Antonio, Patagonia; LORIOI (162) p. 27, pl. ii. *A. stellifera*; MEISSNER (186) p. 16.

Asterininæ, defined as Fam. with list of genera (p. 94), as sub-fam. (p. 95); DELAGE (54).

Asteroderma; DELAGE (54) p. 103.

Asterodiscus; DELAGE (54) p. 93.

Asterodon; DELAGE (54) p. 86.

Asteropsis; DELAGE (54) p. 94.

Astrella young of *Luidia*; DELAGE (54) p. 88.

Astrogoniinae; DELAGE (54) p. 91.

Astrogonium; loc. cit. *A. patagonicum*; MEISSNER (186) p. 18.

Astropecten descr.; DELAGE (54) p. 87, figg. *A. andromeda*; KIAER (140). *A. aurantiaca*; NOBRE (199). †*A. elegans*; WALTHER (281) p. 166. *A. euryacanthus*; HERDMAN (120) p. 143. †*A. helveticus*; SCHUETZE (251) p. 156. *A. hemprichi*; HERDMAN (120) p. 143: incl. *A. zebra*, & ? *A. notograptus*; BELL in op. cit. p. 149. *A. indicus*; op. cit. p. 143. *A. irregularis*; NOBRE (198) p. 53: MAR. BIOL. ASS. (184) p. 207. †*A. leckenbyi*; STRANGWAYS (266) p. 15. *A. polyacanthus*;

- HERDMAN (120) p. 143. +*A. rectus* (p. 40), +*A. scarburgensis* (p. 15); STRANGWAYS (266). *A. subinermis*; NOBRE (199). *A. velitaris*; BELL in HERDMAN (120) p. 150. *A. zebra*; op. cit. p. 143: photograph of 3 cotypes, see *A. hemprichi*; BELL in op. cit. p. 149.
- Astropecteninae* defined as Fam., with list of genera; DELAGE (54) p. 87.
- Astropectininae* as Subfam.; DELAGE (54) p. 88.
- Bathybiaster*; loc. cit. *B. loripes*; MEISSNER (186) p. 19. *B. pallidus* syn. of *B. vexillifer*; GRIEG (106) p. 14: incl. *B. vexillifer* & *Ilyaster mirabilis*; ÖSTERGREN (202).
- Benthaster*; DELAGE (54) p. 99.
- Blakia*; DELAGE (54) p. 86.
- Brisinga*, descr.; DELAGE (54) p. 104.
- Brisingaster*; DELAGE (54) p. 104.
- Brisinginae*, defined, with list of genera; loc. cit.
- Bunaster*; DELAGE (54) p. 98.
- Calliaster*; DELAGE (54) p. 91.
- Calliderma*; DELAGE (54) p. 91.
- Calvasterias*; DELAGE (54) p. 103.
- Calveria*; DELAGE (54) p. 100.
- Calveria* **nom. nov.** pro *Calveria* Carp., Jeffr., & Thomson 1870, non Thomson 1873; DELAGE (54) p. 100.
- Calycaster*; DELAGE (54) p. 103.
- Calyptraster*; DELAGE (54) p. 99.
- Caulaster*; DELAGE (54) p. 89.
- Chaetaster*; DELAGE (54) p. 99 & fig.
- Chaetasterinae*; DELAGE (54) p. 99.
- Cheiraster*; DELAGE (54) p. 86 & fig.
- Chitonaster*; DELAGE (54) p. 91.
- Choriaster*; DELAGE (54) p. 93.
- Cnemidaster*; DELAGE (54) p. 102 & fig.
- Colpaster*; DELAGE (54) p. 105.
- Coronaster*; op. cit. p. 103. *C. octoradiatus*; MEISSNER (186) p. 5.
- Cosmasterias*, vide sub *Asterias* et *Diplasterias*.
- Craspidaster*; DELAGE (54) p. 88.
- Crenaster* Perr.; DELAGE (54) p. 86.
- Cribra*; op. cit. p. 101. *C. sladeni*; MEISSNER (186) p. 13.
- Crib[r]ella*; DELAGE (54) p. 101. *C. oculata*; NOBRE (199). *C. pagenstecheri*, incl. all Antarctic spp.; MEISSNER (186) p. 13. *C. sanguinolenta*; LUDWIG (164) p. 697: descr., range; CLARK (38) p. 555, pls. iii, iv: formae *laevior* and *scabrior* not clearly separated; MICHAÏLOVSKIJ (192) p. 166.
- Crossaster*, descr.; DELAGE (54) p. 100. *C. australis*; MEISSNER (186) p. 17. *C. papposus*, 2 forms distinguished; MICHAÏLOVSKIJ (192) p. 169.
- Cryptaster*; DELAGE (54) p. 99.
- Cryptozonida*, defined, with Fam. *Linck-*, *Pteraster-*, *Solaster-*, *Echinaster-*, *Zoroaster-*, *Stichaster-*, *Heliaster-*, *Pedicellaster-*, *Asterias-*, *Brisinginae*; DELAGE (54) p. 96-105.
- Ctenaster*; DELAGE (54) p. 100.
- Ctenodiscus*; op. cit. p. 89. *C. australis*; MEISSNER (186) p. 18. *C. corniculatus*; MICHAÏLOVSKIJ (192) p. 171. *C. procurator*; MEISSNER (186) p. 18.
- Culcita*, descr.; DELAGE (54) p. 93, figg. *C. schmideliana*, living appearance; HERDMAN (120) p. 144.
- Cycethra*; DELAGE (54) p. 95. *C. electilis*, descr. (p. 23, pl. ii), *C. lahillei* n. sp., San Mathias Gulf, Patagonia (p. 25, pl. ii), *C. simplex*, descr., distinguished from *Goniodiscus verrucosus* Phil. (p. 21, pl. ii); LORIOLO (162). *C. verrucosa*, incl. *C. simplex*; MEISSNER (186) p. 14.
- Dermasterias*; DELAGE (54) p. 94.

Dictyaster ; DELAGE (54) p. 101.

Diplasterias (vide etiam sub *Asterias*) *alba* (p. 9), *D. brandti*, incl. *Asterias neglecta*, *belli*, and *glomerata*, and all probably synn. of *D. meridionalis* (p. 7), *D. georgiana* (p. 9), *D. germaini* (p. 7), *D. loveni* (p. 9) ; MEISSNER (186). *D. luetkeni* ; loc. cit. : LUDWIG (164) p. 698. *D. lurida*, incl. *Asterias obtusispinosa* (p. 8), *D. meridionalis* (p. 8), *D. philippii* (p. 9), *D. spinosa* (p. 9) ; MEISSNER (186). *D. steineni* ; loc. cit. : LUDWIG (164) p. 698.

Diplopteraster ; DELAGE (54) p. 99.

Dipsacaster ; DELAGE (54) p. 88.

Disasterina ; DELAGE (54) p. 95.

Dorigona ; DELAGE (54) p. 91.

Dytaster ; DELAGE (54) p. 86.

Echinaster descr. ; op. cit. p. 101, figg. *E. antonioensis* (p. 29, pl. ii), *E. lepidus* (p. 30, pl. ii), **n. spp.**, Port San Antonio, Patagonia ; LORIOLO (162). *E. oculatus* ; NOBRE (199). *E. purpureus* ; HERDMAN (120) p. 145. *E. sepositus* ; NOBRE (199).

Echinasterinae, defined as Fam. with list of genera, also as Subfam. ; DELAGE (54) p. 101. Vide etiam *Lakillea*.

+*Echinodiscaster* **nom. mut.** pro *Echinodiscus* Stürtz non Ag. ; DELAGE (54) p. 84.

Eugoniaster ; DELAGE (54) p. 90.

Ferdina ; DELAGE (54) p. 98.

Freyella ; DELAGE (54) p. 105.

Fromia ; DELAGE (54) p. 98.

Ganeria ; op. cit. p. 95, *G. falklandica* ; MEISSNER (186) p. 14.

Ganeriinae ; DELAGE (54) p. 95.

Gastraster ; op. cit. p. 103 : discussed (p. 35), *G. studeri* **n. sp.**, Port San Antonio, Patagonia (p. 34, pl. iv) ; LORIOLO (162).

Gnathasterinae ; DELAGE (54) p. 86.

+*Goniaster arduennensis* ; COLLET (44) p. 77.

Goniodiscinae ; DELAGE (54) p. 91.

Goniodiscus ; loc. cit. : *G.?* sp. juv. ; HERDMAN (120) p. 144. *G. verrucosus* ; LORIOLO (162) p. 22.

Goniodon **n. g.** of *Gnathasterinae*, Subfam. of *Archasteridae* ; PERRIER (92) Zool. Rec. 1894, Stellérides du Travailleur, p. 244, non HERRICK, Bull. Denison Univ. 1888, a Mollusc : DELAGE (54) p. 87.

Goniopecten ; DELAGE (54) p. 86.

Gymnasterias, descr. ; DELAGE (54) p. 93, fig.

Gymnasteriasinae, defined with list of genera ; loc. cit.

Gymnobrisinga ; DELAGE (54) p. 104.

Hacelia ; DELAGE (54) p. 98, fig.

Heliaster, descr. ; DELAGE (54) p. 103.

Heliasterinae, defined with list of genera ; loc. cit.

Henricia sanguinolenta ; COLE (43) : MAR. BIOL. ASS. (184) p. 208 : NOBRE (199).

Hexaster ; DELAGE (54) p. 99. *H. obscurus* ; LUDWIG (164) p. 696.

Hippasteria ; DELAGE (54) p. 92. *H. hyadesi* ; MEISSNER (186) p. 18.

Hoplaster ; DELAGE (54) p. 87.

Hymenaster ; DELAGE (54) p. 99, fig. *H. nobilis* ; LUDWIG (164) p. 697. *H. pellucidus* ; MICHAILOVSKIJ (192) p. 167. *H. praecoquis* ; LUDWIG (164) p. 697.

Hyphalaster ; DELAGE (54) p. 89 & fig.

Iconaster ; DELAGE (54) p. 91.

Ilyaster ; DELAGE (54) p. 88.

Korethraster ; DELAGE (54) p. 100. *K. hispidus* ; MICHAILOVSKIJ (192) p. 185.

Korethrasterinae ; DELAGE (54) p. 100.

- Labidiaster*; op. cit. p. 104, figg. *L. radiosus*; MEISSNER (186) p. 4.
Lahillea n. g. of *Echinasteridae* (p. 32) with genotype *L. mira* n. sp., San Mathias Gulf, Patagonia (p. 33, pl. iii); LORIOL (162).
Lasiaster; DELAGE (54) p. 94. *L. hispidus* is *Poraniomorpha* (q. v.); ÖSTERGREN (202).
Lebrunaster; DELAGE (54) p. 95. *L. paxillosus*; MEISSNER (186) p. 16.
Leiaster; DELAGE (54) p. 98.
Leptasterias, rejected; CLARK (38) p. 555.
Leptogonaster; DELAGE (54) p. 87.
Leptogonasterinae; DELAGE (54) p. 87.
Leptoptychaster; op. cit. p. 88. *L. arcticus*; MICHAILOVSKIJ (192) p. 170.
L. kerguelenensis; LUDWIG (164) p. 695.
Linckia, descr.; DELAGE (54) p. 97, fig. *L. diplax*; KELLOGG (139). *L. laevigata*; MARTENS (185); HERDMAN (120) p. 145: *L. multiforis*; loc. cit. *L. pacifica*; KELLOGG (139): var *diplox*; HERDMAN (120) p. 145.
Linckinae subfam.; DELAGE (54) p. 98.
Linckinae, defined as Fam., with list of genera; op. cit. p. 97.
Litonotaster; DELAGE (54) p. 90.
Lonchotaster; DELAGE (54) p. 86.
Lophaster; op. cit. p. 100. *L. furcifer*; MICHAILOVSKIJ (192) p. 168. *L. pentactis*, *L. stellans*; MEISSNER (186) p. 16.
Lophopteraster; DELAGE (54) p. 99.
Luidia, descr.; op. cit. p. 88, fig. *L. bellonae*; MEISSNER (186) p. 19.
L. hardwickii, and young?, *L. maculata*; HERDMAN (120) p. 143. *L. sarsi*; MAR. BIOL. ASS. (184) p. 207.
Luidiaster; DELAGE (54) p. 86.
Luidiinae; DELAGE (54) p. 88.
Lytaster; DELAGE (54) p. 103.
Marginaster; DELAGE (54) p. 94.
Marsipaster; DELAGE (54) p. 99.
Mediaster; DELAGE (54) p. 91.
Metopaster; DELAGE (54) p. 91.
Metrodora; op. cit. p. 99. *M. subulata*; HERDMAN (120) p. 145.
Metrodirinae; DELAGE (54) p. 99.
Mitteliaphaster; DELAGE (54) p. 91.
Mimaster; DELAGE (54) p. 87.
Mimasterinae; DELAGE (54) p. 87.
Mithrodia; DELAGE (54) p. 102.
Mithrodiinae; DELAGE (54) p. 102.
Moiraster; DELAGE (54) p. 88.
Myxaster; DELAGE (54) p. 100.
Narcissia; DELAGE (54) p. 99.
Nardoa; op. cit. p. 98. +*Nardoa? fourtaui* n. sp., Santonian, Abou Roach, Egypt; LORIOL (162) p. 65, pl. iv. *N. tuberculata*; HERDMAN (120) p. 145.
Nectria; DELAGE (54) p. 91.
Neomorphaster; DELAGE (54) p. 102.
Nepanthia; DELAGE (54) p. 95.
Nidorellia; DELAGE (54) p. 92.
Nymphaster; DELAGE (54) p. 91.
Odinia; DELAGE (54) p. 104.
Odontaster; op. cit. p. 86. *O. belli*, *O. granulosus* (p. 20), *O. penicillatus*, *O. singularis* (p. 19); MEISSNER (186).
Ogmaster; DELAGE (54) p. 91.
Ophidiaster; op. cit. p. 98, fig. *O. cylindricus*, *O. helicostichus*, juv.; HERDMAN (120) p. 145.
+*Palaeaster*; DELAGE (54) p. 83, figg.

Palmipedinae; DELAGE (54) p. 95.

Palmipes, descr.; loc. cit., figg. *P. placenta*; MAR. BIOL. ASS. (184) p. 207.

Paragonaster; DELAGE (54) p. 91.

Pararchaster; DELAGE (54) p. 86.

Pararchasterinae; DELAGE (54) p. 86.

Patiria; DELAGE (54) p. 95.

Paulia; DELAGE (54) p. 93.

Pectinaster; DELAGE (54) p. 86.

Pedicellaster, descr.; op. cit. p. 103. *P. sarsi*, *P. scaber*; MEISSNER (186) p. 5. *P. sexradiatus*; BERTRAND (27).

Pedicellasterinae, defined with list of genera; DELAGE (54) p. 103.

Peltaster; DELAGE (54) p. 90.

Pentaceropsis; DELAGE (54) p. 93. *P. obustatus*; MARTENS (185).

Pentaceros, descr.; DELAGE (54) p. 92, figg. *P. sp. juv.*; HERDMAN (120) p. 144. †*P. jurassicus*; WALTHER (281) p. 166. *P. lincki* (p. 144, 147, fig.), *P. mammillatus* (p. 144); HERDMAN (120). *P. nodosus*; loc. cit.: MARTENS (185). †*P. pustuliformis*; WALTHER (281) p. 167. *P. reticularis*; WEYSSE (284) p. 93, fig. *P. turritus*; MARTENS (185) p. 133.

Pentacerosinae, defined, with list of genera; DELAGE (54) p. 92.

Pentagonaster, descr.; op. cit. p. 89, figg. *P. austro-granularis* (p. 17), *P. patagonicus* (p. 18); MEISSNER (186).

Pentagonasterinae, defined, as Fam. with list of genera (p. 89), as subfam. (p. 90); DELAGE (54).

Peribolaster; op. cit. p. 100. *P. folliculatus*; MEISSNER (186) p. 17.

Perknaster; DELAGE (54) p. 101.

Persephonaster; DELAGE (54) p. 86.

Phaneraster; DELAGE (54) p. 91.

Phanerozonida, **nom. mut.** pro *Phanerozonina*, defined with Famm. *Archaster*-, *Astropecten*-, *Porcellanaster*-, *Pentagonaster*-, *Anthene*-, *Pentaceros*-, *Gymnasterias*-, *Asterinae*-, *inae*; DELAGE (54) p. 84–96.

Pharia; DELAGE (54) p. 98.

Phataria; loc. cit. *P. unifascialis* var. *bifascialis*; MONKS (193).

Pholidaster; DELAGE (54) p. 102.

Phoxaster; DELAGE (54) p. 88.

Platasterias; DELAGE (54) p. 88.

Plectaster; DELAGE (54) p. 101.

Plutonaster; op. cit. p. 86, fig. *P. parelii*; MICHAILOVSKIJ (192) p. 171.

Plutonasterinae; DELAGE (54) p. 86.

Polyasterias, vide sub *Asterias*.

Pontaster; DELAGE (54) p. 86. *P. tenuispinus*; MICHAILOVSKIJ (192) p. 171.

Porania; DELAGE (54) p. 94. *P. antarctica*; MEISSNER (186) p. 17. *P. pulvillus*; MAR. BIOL. ASS. (184) p. 207.

Poraniomorpha; DELAGE (54) p. 94. *P. hispida* incl. *P. rosea* as var., & *L. villosus* as young of var., also ? *P. borealis*; ÖSTERGREN (202).

Poraniopsis; DELAGE (54) p. 94. *P. echinasteroides*; MEISSNER (186) p. 17.

Porcellanaster, descr.; DELAGE (54) p. 89 & figg.

Porcellanasterinae, defined, with list of genera; loc. cit.

Prionaster; DELAGE (54) p. 86.

Prognaster; DELAGE (54) p. 102.

Pseudarchaster discus; MEISSNER (186) p. 20.

Pseudaster; DELAGE (54) p. 89.

Pseudoreaster; DELAGE (54) p. 92.

Psilaster; op. cit. p. 88. *P. fleurbaei*; MEISSNER (186) p. 19.

Pteraster, descr.; DELAGE (54) p. 99. *P. ingouffi* (p. 13), *P. lebruni*

- (p. 14); MEISSNER (186). *P. militaris*; LUDWIG (164) p. 696 :
 MICHAÏLOVSKIÏ (192) p. 168. *P. pulvillus*; loc. cit.
Pterasterinae, defined, with list of genera; DELAGE (54) p. 99.
Pycnopodia; op. cit. p. 104. *P. spuria*; LOEB (155, 158, 159).
Pyrenaster; DELAGE (54) p. 90.
Pythonaster; DELAGE (54) p. 99.
Radiaster; DELAGE (54) p. 100.
Randasia; DELAGE (54) p. 93.
Retaster; op. cit. p. 99. *R. cribrosus*; HERDMAN (120) p. 145: ? juv.;
 BELL in op. cit. p. 150. *R. gibber*; MEISSNER (186) p. 14. *R. insignis*;
 BELL in HERDMAN (120) p. 150. *R. verrucosus*; MEISSNER (186)
 p. 14.
Rhegaster; DELAGE (54) p. 94, fig. *R. tumidus* incl. *R. murrayi*;
 ÖSTERGREN (202): var. *tuberculata*; MICHAÏLOVSKIÏ (192) p. 170.
Rhipidaster; DELAGE (54) p. 100.
Rosaster; DELAGE (54) p. 91.
Scaphaster; DELAGE (54) p. 94.
Sideriaster; DELAGE (54) p. 88.
Solaster; op. cit. p. 100. *S. affinis* syn. of *S. papposus*; ÖSTERGREN
 (202). *S. endeca*; MICHAÏLOVSKIÏ (192) p. 168: descr., range; CLARK
 (38) p. 556, pls. iii, iv. *S. glacialis* is 7-rayed *S. endeca*; ÖSTERGREN
 (202). *S. papposus*; MAR. BIOL. ASS. (184) p. 208): var. *squamata*
 is distinct sp.; ÖSTERGREN (202). *S. regularis*; MEISSNER (186)
 p. 17. *S. syrtensis* is valid sp.; ÖSTERGREN (202).
Solasterinae, defined, as Fam. with list of genera, also as Subfam.;
 DELAGE (54) p. 100.
 +*Sphaeraster*, history, *S. molassicus* n. sp., Helvetian, Suabia; SCHUETZE
 (251) p. 155, pl. ii. *S. punctatus*; SIEMIRADZKI (255) p. 139.
 +*Sphaerites* vide *Sphaeraster*.
Stegaster; DELAGE (54) p. 96.
Stellaster; op. cit. p. 91. *S. incei*; HERDMAN (120) p. 143.
 +*Stenaster salteri*; AMI (7) p. 61.
Stephanaster; DELAGE (54) p. 90.
Stichaster, descr.; op. cit. p. 102. *S. albulus*; MICHAÏLOVSKIÏ (192)
 p. 166. *S. arcticus*, syn. of *S. roseus*; ÖSTERGREN (202). *S. aurantiacus*;
 MEISSNER (186) p. 12. *S. nutrix*; loc. cit.; LUDWIG (164) p. 696. *S.*
roseus; KIAER (140).
Stichasterinae, defined, with list of genera; DELAGE (54) p. 102.
Styracaster; DELAGE (54) p. 89.
 +*Taeniaster* (?) *fournieri* n. sp., Visean, Belgium, placed in *Oph.*, but is
 perhaps *Ast.* [*Taeniaster* is an Ordovician Asteroid]; FRAIPONT (85)
 p. 7, pl. i.
Tarsaster; DELAGE (54) p. 103.
Thoracaster; DELAGE (54) p. 89.
Tremaster; DELAGE (54) p. 96.
Tylaster; DELAGE (54) p. 94.
Uniophora; DELAGE (54) p. 103.
Valvaster; DELAGE (54) p. 102.
Valvasterinae; DELAGE (54) p. 102.
Zoroaster, descr.; DELAGE (54) p. 102, fig.
Zoroasterinae, defined, with list of genera; loc. cit.

(E.)—OPHIUROIDEA.

Ophiuridia divided into Subclass 1. *Palophiuridiae* with Orders *Lysophiurida* & *Streptophiurida*, 2. *Colophiuridiae* with Orders *Zygophiurida* & *Cladophiurida*; DELAGE (54).
Amphilepis; op. cit. p. 153. *A. mobilis* n. sp., Timor & Java sea, 216—

- 330 m. ; KOEHLER (143) p. 94, pl. xx. *A. norvegica* ; GRIEG (106) p. 28. *A. protecta* n. sp., G. of Boni, Celebes, 1158 m. ; KOEHLER (143) p. 94, pl. xxiii.
- Amphiodia*, vide sub *Amphiura*.
- Amphioplus*, vide sub *Amphiura*.
- Amphipholis*, vide etiam sub *Amphiura*. *A. squamata*, descr., range ; CLARK (38) p. 560, pls. vi, vii.
- Amphiura* descr. ; DELAGE (54) p. 152, figg. *A. sp.* ; HERDMAN (120) p. 146. *A. agitata* n. sp., Sulu Archipel, 275 m. ; KOEHLER (143) p. 79, pl. xiii. *A. candida*, holotype & Marktanner's neotype redescr. ; KOEHLER (144) p. 66 & figg. *A. canescens* referred to *Ophiactis* (p. 96), *A. (Amphioplus) caulleryi* (p. 91) ; KOEHLER (143). *A. chiaji* ; GRIEG (106) p. 27 : MAR. BIOL. ASS. (184) p. 209 : ÖSTERGREN (204). *A. concinna*, Molucca sea, 2081 m. (p. 77, pl. xiii), *A. (Amphioplus) confinis*, G. of Boni, Celebes, 1158 m. (p. 89, pl. xiv), *A. (Amphiodia) crassa*, Macassar & Molucca sea, 450-2291 m. (p. 83, pl. xv), *A. (Amphioplus) debilis*, G. of Boni, Celebes, 1158 m. (p. 88, pl. xiv) : all n. spp. ; KOEHLER (143). *A. denticulata*, new to European waters, descr. ; GRIEG (106) p. 27. *A. (Amphiodia) diomedeeae* (p. 86), *A. duplicata* referred to *Ophiactis* (p. 96) ; KOEHLER (143). *A. elegans* ; NOBRE (198) p. 54, & (199) : MAR. BIOL. ASS. (184) p. 209. *A. filiformis* ; loc. cit. *A. (Amphioplus) firma* n. sp., Gilolo passage, 411 m. (p. 87, pl. xii), *A. (Amphioplus) gentilis* n. sp., Gilolo passage, 835 m. (p. 86, pl. xvi), *A. grandis* (p. 81), *A. (Amphiodia) grata* n. sp., G. of Boni, Celebes, 1158 m. (p. 85, pls. xviii, xix), *A. hilaris* n. sp., Macassar Str., 1301 m. (p. 80, pl. xv) ; KOEHLER (143). *A. integra*, a cotype redescr. ; KOEHLER (144) p. 65 & figg. *A. iris* (p. 81), *A. (Amphioplus) lorioli* (Koehl. sub *Ophiactis*) (p. 91, pl. xv) ; KOEHLER (143). *A. magellanica* ; LUDWIG (164) p. 694. *A. (Amphipholis) misera* (p. 83), *A. nociva* n. sp., Banda sea, 204 m. (p. 78, pl. xv) ; KOEHLER (143). *A. ochroleuca*, holotype, is an *Amphiodia* not an *Amphipholis* (p. 63, figg.), *A. oerstedii*, holotype redescr. (p. 68, figg.), *A. olivacea*, a cotype descr. (p. 64, figg.) ; KOEHLER (144). *A. papillata*, vide sub *Ophiodoris*. *A. partita*, vide sub *Ophiactis*. *A. patagonica* ; LUDWIG (164) p. 694. *A. scripta* n. sp., coast of Oman, Persian gulf, 4-6 fm. ; KOEHLER (144) p. 70 & figg. *A. securigera* ; GRIEG (106) p. 28. *A. (Amphiodia) servata*, Banda sea, 560 m. (p. 84, pl. xv), *A. (Amphioplus) spinulosa*, Flores Id., 247 m. (p. 92, pl. xvii) : n. spp. ; KOEHLER (143). *A. squamata* ; LUDWIG (164) p. 693. *A. sundevalli* ; GRIEG (106) p. 27 : individual without tentacle-scales ; MICHAÏLOVSKIÏ (192) p. 173. *A. (Amphioplus) tessellata*, Timor, 918 m. (p. 89, pl. xiii), *A. (Amphioplus) trepida*, Java sea, 289 m. (p. 93, pl. xiv), *A. uncinata*, Bima B. & Java sea, 250-330 m. (p. 76), *A. (Amphipholis) vitax*, Flores Id., 247 m. (p. 82, pl. xiii) : all n. spp. ; KOEHLER (143).
- Amphiuridae*, vide *Ophiodoris*.
- Amphiurinae* defined with list of genera ; DELAGE (54) p. 152.
- Astroceras* ; op. cit. p. 158. *A. compar* n. sp., Banda sea, 204-304 m. (p. 158, pls. xxii, xxx, xxxii), *A. pergamena* (p. 159) ; KOEHLER (143).
- Astrocharis* n. g. of *Astro[s]chemidae*, with genotype *A. virgo* n. sp., Sulu Archipel & Gilolo passage, 522-1089 m. ; KOEHLER (143) p. 160, pls. xx, xxx.
- Astrochele* ; DELAGE (54) p. 158.
- Astrochema* [sic passim ! pro *Astroschema*] ; KOEHLER (143).
- Astrocladus* ; DELAGE (54) p. 159.
- Astroclon* ; DELAGE (54) p. 158.
- Astrocnida* ; DELAGE (54) p. 158.
- Astrocreas* Verrill probably err. typ. pro *Astroceras* Lym. [this is so] ; DELAGE (54) p. 159.

Astrodia Verrill, 1899, probably err. typ. pro *Astrocnida*; loc. cit. [This is wrong: although not so stated by Verrill and therefore not so entered in Zool. Rec., *Astrodia* was **n. g.** of *Astronycidæ* first mentioned VERRILL (244) Zool. Rec. 1899, p. 74, first diagnosed VERRILL (341) Zool. Rec. 1900, p. 371.]

Astrogeron; DELAGE (54) p. 155.

Astrogomphus; op. cit. p. 158. *A. munitus* **n. sp.**, Gilolo passage, 1089 m.; KOEHLER (143) p. 157, pls. xxii, xxxii.

Astronycidæ, vide *Astrodia*.

Astronyx (seu *Asteronyx*); DELAGE (54) p. 158. *A. loveni*; GRIEG (106) p. 33; KOEHLER (143) p. 167.

Astrophium descr.; DELAGE (54) p. 159.

Astrophyton; loc. cit. *A. sculptum*, *A. verrucosum*; MARTENS (185).

Astroporpa; DELAGE (54) p. 157.

Astroschema descr.; loc. cit. *A. fastosum*, Minahassa, 1200 m. (p. 161, pls. xxviii, xxxii, xxxiii, xxxiv), *A. ferox*, Banda sea, 204 m. (p. 162, pls. xxxii, xxxiii), *A. migrator*, Macassar Str., 1301 m. (p. 164, pls. xxiv, xxx, xxxv): all **n. spp.**; KOEHLER (143).

Astroschematidæ, vide *Astrocharis*.

Astroscheminae, defined with list of genera; DELAGE (54) p. 157.

Astrotoma; op. cit. p. 158. *A. bellator*, Sulu Archipel., 275 m. (p. 154, pls. xix, xxiii, xxviii), *A. vecors*, Banda sea & Timor, 204–520 m. (p. 155, pls. xxi, xxvii, xxxii): **n. spp.**; KOEHLER (143).

Brachyophiuridæ, defined, with Famm. *Ophiiderm-*, *Ophiolopis-inæ*; DELAGE (54) p. 148.

Cladophiuridæ, defined with Famm. *Astroschem-*, *Trichaster-*, *Euryale-inæ*; DELAGE (54) p. 157.

Colophiuridæ defined; DELAGE (54) p. 144 & 147.

Euryale; op. cit. p. 159. *E. ludwigi*; MARTENS (185).

Euryaleinæ, defined, with list of genera; DELAGE (54) p. 158.

†*Geocoma*:—*G. carinata*, *G. planata*; WALTHER (281) p. 166.

Gorgonocephalus descr.; DELAGE (54) p. 158, fig. *G. agassizi*; GRIEG (106) p. 35: MICHAÏLOVSKIJ (192) p. 175: descr., range; CLARK (38) p. 561, pls. vi, vii. *G. arborescens*; NOBRE (199). *G. eucnemis*; GRIEG (106) p. 35 & (107) p. 4: MICHAÏLOVSKIJ (192) p. 174. *G. lamarcki* (p. 33), *G. lincki*, variations descr. (p. 35, fig.); GRIEG (106).

Gymnolophus; DELAGE (54) p. 157.

Gymnophiura; DELAGE (54) p. 149.

Hemipholis; op. cit. p. 153. *H. cordifera*; LUDWIG (164) p. 693.

Luetkenia Brock; DELAGE (54) p. 156: validity questioned, *L. cataphracta*, holotype; KOEHLER (144) p. 114, figg.

†*Lysophiurida* defined; DELAGE (54) p. 145.

Nectophiuridæ, defined, with Famm. *Amphiur-*, *Ophiohelus-*, *Ophiacant-*, *Ophiocom-*, *Ophiotrix-inæ*; DELAGE (54) p. 152.

Ophiacantha descr.; op. cit. p. 154, figg.: Verrill's divisions reduced to subgenera; KOEHLER (143) p. 101. *O. abyssicola*; GRIEG (106) p. 31. *O. anomala*; LUDWIG (164) p. 694. *O. augusta* **n. sp.** Minahassa & Timor, circa 1200 m.; KOEHLER (143) p. 105, pl. xix. *O. bidentata*; GRIEG (106) p. 31: MICHAÏLOVSKIJ (192) p. 174. *O. clandestina* **n. sp.** Macassar Str., 655–724 m. (p. 108, pl. xix), *O. composita*, norm differs from holotype (p. 120, pl. xxiii), *O. congesta* **n. sp.**, Macassar & Gilolo passage, 450–798 m. (p. 103, pl. xxiv), *O. cosmica* (p. 108), *O. (Ophientodia) dilecta* **n. sp.**, Macassar Str. & Java sea, 724–794 m. (p. 117, pl. xxii), *O. duplex* (p. 109), *O. (Ophientodia) eximia* **n. sp.**, Malay Archipel., 724–1788 m. (p. 116, pl. xxi), *O. fausta* **n. sp.**, Banda sea, 304 m. (p. 104, pl. xx), *O. ficta* **n. sp.** ibid. 204 m., link w. *Ophiomitrella* (p. 121, pl. xvi); KOEHLER (143). *O. imago*; LUDWIG (164) p. 695. *O. (Ophiopristsis) imperita* **n. sp.** Arru Id., 1788 m. (p. 114,

- pl. xvii), *O. (Ophiotreta) inutilis* **n. sp.** Java & Banda sea, 238–397 m. (p. 111, pl. xxi), *O. (Ophiopristis) luctuosa* **n. sp.** Timor, 216 m. (p. 115, pl. xx); KOEHLER (143). *O. marsupialis*; LUDWIG (164) p. 695. *O. (Ophiectodia) matura* **n. sp.**, Banda sea, 797 m. (p. 112, pl. xxiii), *O. normanni* (p. 107), *O. pentagona* (p. 110), *O. (Ophiolimna) perfida* **n. sp.**, Malay Archipel., 411–959 m. (p. 118, pl. xxiii), *O. (Ophiopristis) procera* **n. sp.**, Banda sea, 595 m. (p. 113, pl. xxii), *O. relictæ* **n. sp.**, Malay Archipel., 538–1624 m. (p. 106, pl. xvii), *O. tenuis* **n. sp.**, Banda sea, 304 m. (p. 102, pl. xvi), *O. valenciennesi* (p. 110); KOEHLER (143). *O. vivipara*; LUDWIG (164) p. 694. *O. vorax*; KOEHLER (143) p. 109.
- Ophiacanthidae*, vide *Ophiomytis*.
- Ophiacantinae* defined with list of genera; DELAGE (54) p. 154.
- Ophiactis*; op. cit. p. 153. *O. abyssicola*; GRIEG (106) p. 29. *O. asperula*; LORIOL (162) p. 43; LUDWIG (164) p. 693. *O. balli*; MAR. BIOL. ASS. (184) p. 209: descr.; GRIEG (106) p. 29. *O. dissidens* **n. sp.** Macassar Str. 1301 m. (p. 98, pls. xvii, xviii), *O. flexuosa* var. *perplexa* Koehl. (olim sp.) (p. 95); KOEHLER (143). *O. kröyeri*; LUDWIG (164) p. 693. *O. lorioli* vide sub *Amphiura*. *O. modesta* (p. 63, figg.), *O. parata* **n. sp.**, Gilolo passage, 469 m. (p. 97, pl. xxiv), *O. partita* (Koehl. sub *Amphiura*), & young (p. 96); KOEHLER (143).
- Ophiambyx*; DELAGE (54) p. 153.
- Ophiarachna*; op. cit. p. 155. *O. affinis* cotypes, & a cotype of the syn. *O. clavigera* Brock, redescr.; KOEHLER (144) p. 76. *O. incrassata*; HERDMAN (120) p. 146.
- Ophiarthrum*; DELAGE (54) p. 155.
- Ophiernus*; op. cit. p. 150. *O. adspersus*; KOEHLER (143) p. 20.
- Ophioaethiops*; DELAGE (54) p. 156. *O. unicolor*; KOEHLER (144) p. 115 & figg.
- Ophioblenna*; DELAGE (54) p. 155.
- Ophiobyrsella erinaceus* **n. sp.**, Sulu Archipel., 275 m.; KOEHLER (143) p. 152, pl. xxvi.
- Ophiocamax*; DELAGE (54) p. 153 & figg. *O. rugosa* **n. sp.**, Malay Archipel., 204–520 m.; KOEHLER (143) p. 139, pl. xxvi.
- Ophiocampsis*; DELAGE (54) p. 156.
- Ophiocentrus*; DELAGE (54) p. 155.
- Ophioceramis*; op. cit. p. 150. *O. clausa*, vide *Ophiomoeris*. *O. declinans* **n. sp.**, Banda Sea, 204 m.; KOEHLER (143) p. 15, pl. iii. *O. januarii*; LORIOL (162) p. 44. *O. obstricta* & *O. tenera*, vide *Ophiomoeris*.
- Ophiochaeta*; DELAGE (54) p. 150.
- Ophiochiton*; op. cit. p. 153: spp. in two sections; KOEHLER (143) p. 68. *O. ambulator*, ? incl. *O. carinatus* Lüttk. & Mort. (p. 70), *O. bispinosus* **n. sp.**, Java Sea & Macassar Str., 538–655 m. (p. 71, pl. xi), *O. commixtus* **n. sp.**, Macassar Str., 1301 m. (p. 69, pl. xi), *O. inaequalis* **n. sp.**, Gilolo passage, 835 m. (p. 70, pl. xi); KOEHLER (143).
- Ophiochrysis* **n. g.** of *Ophiolepididae*, with genotype *O. ornata* **n. sp.**, Timor, 1224 m.; KOEHLER (143) p. 35, pl. vi.
- Ophiochytra*; DELAGE (54) p. 153.
- Ophiocirce* **n. g.** of *Ophiodermatidae*, with genotype *O. inutilis* **n. sp.**, Timor, 112 m.; KOEHLER (143) p. 13, pl. iii.
- Ophiocnemis*; DELAGE (54) p. 156. *O. marmorata*; HERDMAN (120) p. 146.
- Ophiocnida*; DELAGE (54) p. 153. *O. albo-viridis*, holotype descr.; KOEHLER (144) p. 71, figg. *O. brachiata*; MAR. BIOL. ASS. (184) p. 209.
- Ophiocoma* descr.; DELAGE (54) p. 155. *O. canaliculata*, holotype redescr.; KOEHLER (144) p. 75 & figg. *O. echinata*, section of ray figd.; ROY. COLL. SURGEONS (237) p. 2. *O. nigra*; MAR. BIOL. ASS. (184) p. 209: ÖSTERGREN (204) fig. *O. scolopendrina*; HERDMAN (120) p. 146.

- Ophiocominae* defined with list of genera; DELAGE (54) p. 155.
- Ophioconis*; op. cit. p. 149. *O. grandisquama* n. sp., Gilolo passage, 469 m.; KOEHLER (143) p. 11, pl. ii.
- Ophiocopa*; DELAGE (54) p. 155.
- Ophiocrates* n. g. of *Ophiolepididae* with genotype *O. lenta* n. sp., Macassar Str.; KOEHLER (143) p. 19, pl. iv.
- Ophiocreas*; DELAGE (54) p. 158. *O. oedipus* (p. 166), *O. sibogae* n. sp., Malay Archipel., 204–1089 m. (p. 165, pls. xxxii, xxxvi); KOEHLER (143).
- Ophiocrene*, ? young *Astrophyton*; DELAGE (54) p. 159.
- Ophiecten*; op. cit. p. 152, figg. *O. depressum*, vide *Ophiroleuce*. *O. sericeum*; MICHAILOVSKIJ (192) p. 173: cold water & warm water varr., latter = *Ophioglypha gracilis* Sars; GRIEG (106) p. 26.
- Ophiocymbium*; DELAGE (54) p. 155.
- Ophiodera neglecta* n. sp., Malay Archipel., 469–595 m.; KOEHLER (143) p. 153, pl. xxviii.
- Ophioderma*, descr.; DELAGE (54) p. 148 & fig. †*O. sp.*; BOEHM (28) p. 8, pl. i. *O. longicauda*; NOBRE (199).
- Ophidermatidae*, vide *Ophiocirce*, *Ophiopallas*.
- Ophiderminae*, defined with list of genera; DELAGE (54) p. 148.
- Ophiodoris* n. g. of *Amphiuridae* (p. 72), including *O. contrarius*, 1158–1301 m. (p. 75), *O. errans*, 595 m. (p. 74), *O. malignus*, 450 m. (p. 73), all n. spp., Malay Archipelago (pl. xii), & ? *Amphiura papillata* Lütik. & Mort.; KOEHLER (143).
- Ophiogeron*; DELAGE (54) p. 155.
- Ophiogona*; DELAGE (54) p. 149.
- Ophioglypha*, classification of spp. discussed, two divisions suggested according as second buccal pores open into mouth or not (p. 36), *O. aequalis* (p. 55); KOEHLER (143). *O. albida*; KIAER (140). *O. clemens* n. sp., Malay Archipel., 694–1633 m. (p. 51, pl. viii), *O. distincta* n. sp., Timor & Java sea, 216–794 m. (p. 44, pl. ix), *O. flagellata* (p. 56); KOEHLER (143). *O. hexactis*; LUDWIG (164) p. 692. *O. humilis* n. sp., Sulu Archipel., 120–400 m. (p. 39, pl. vii), *O. imbecillis* (p. 40), *O. improba* n. sp., Banda sea, 1595 m. (p. 48, pl. viii); KOEHLER (143). *O. indica*, a cotype redescri.; KOEHLER (144) p. 61, figg. *O. inornata*, incl. *O. divisa*, variations (p. 40), *O. insolita* n. sp., Banda sea & Gilolo, 204–397 m. (p. 47, pl. vii); KOEHLER (143). *O. lacertosa*; KIAER (140): NOBRE (199): UEXKUELL (274). *O. latro* n. sp., Banda sea, 204 m. (p. 41, pl. ix), *O. laudata* n. sp., Sulu Archipel., 450 m. (p. 43, pl. viii), *O. lenta* n. sp., Malay Archipelago (p. 53, pl. viii), *O. liberata* n. sp., Gilolo passage, 835 m. (p. 46, pl. vii), *O. prisca* n. sp., Banda sea, 1595 m. (p. 38, pl. vi), *O. radiata* (p. 55), *O. remota* n. sp., Flores sea, 2798 m. (p. 54, pl. ix); KOEHLER (143). *O. robusta*, descr., range; CLARK (38) p. 558, pls. vi, vii. †*O. sarsi*?; MADSEN (177) p. 530. *O. solida* (p. 43, pl. viii), *O. sordida* (p. 47), *O. urbana* n. sp., Gilolo passage, 469 m. (p. 50, pl. vii); KOEHLER (143).
- Ophiogymna*; DELAGE (54) p. 156.
- Ophiohelix*; op. cit. p. 157: syn. of *Ophioaethiops*; KOEHLER (144) p. 115.
- Ophiohelus* descr.; DELAGE (54) p. 153, figg.
- Ophiohelusinae* defined with list of genera; loc. cit.
- Ophioteles*; DELAGE (54) p. 155.
- Ophiolepididae*, vide *Ophiochrysis*, *Ophiocrates*, *Ophiroleuce*, *Ophiomidas*, *Ophiomoeris*.
- Ophiotelepis*; op. cit. p. 149. †*O. leckenbyi*, †*O. murrayi*; STRANGWAYS (266) p. 15.
- Ophiotelepisinae*, defined with list of genera; DELAGE (54) p. 149.
- Ophiroleuce* n. g. of *Ophiolepididae* (p. 32) for *Ophiecten depressum* Lym., & *O. seminudum* n. sp., Sulu Archipel. & Ceram, 120–1633 m.; KOEHLER (143) p. 33, pl. ii.

- Ophiolipus* (seu *-lypus*); DELAGE (54) p. 150. *O. granulatus* (p. 21), *O. levis* **n. sp.**, Gilolo passage, 469–835 m. (p. 21, pl. iv); KOEHLER (143).
- Ophiolophus*; DELAGE (54) p. 156. *O. novarae*, holotype redescri.; KOEHLER (144) p. 117 & figg.
- Ophiomastix*; DELAGE (54) p. 155. *O. venosa*, topotype descr.; KOEHLER (144) p. 73, figg.
- Ophiomastus*; DELAGE (54) p. 152, figg. *O. perplexus* **n. sp.**, G. of Boni & Timor, 828–1158 m. (p. 29, pl. iii), *O. tumidus* (p. 30); KOEHLER (143).
- Ophiomaza*; DELAGE (54) p. 156. *O. cacaotica*; HERDMAN (120) p. 147.
- Ophiomidas* **n. g.** of *Ophiolepididae* (p. 26) for *O. alatum*, Macassar Str., 1301 m. (p. 26, pl. v) & *O. reductum*, near Simbawa Id., 2060 m. (p. 27, pl. v), **n. spp.**, also *Ophiozona dubia* (p. 28); KOEHLER (143).
- Ophiomitra*; DELAGE (54) p. 154: Verrill's division into *Ophiomitra*, *Ophioplinthaca*, & *Ophiomitrella*, accepted; KOEHLER (143) p. 122.
- Ophiomitrella* rediagnosed (p. 123), *O. barbara*, Banda sea, 310 m. (p. 133, pls. xxvi, xxvii), *O. languida*, Macassar, 450 m. (p. 135, pl. xxix), *O. moniliformis*, Molucca sea, 2081 m. (p. 136, pl. xxvii), *O. mutata*, Banda sea, 204–304 m. (p. 134, pl. xxx), *O. placida*, Timor & Banda sea, 204–304 m. (p. 137, pl. xxxi): all **n. spp.**; KOEHLER (143).
- Ophiomoeris* **n. g.** of *Ophiolepididae* (p. 16), with genotype *O. spinosa* **n. sp.**, Sulu and Banda seas, 204–1901 m. (p. 17, pl. iv), also *Ophioceramis clausa*, *obstricta*, and *tenera*; KOEHLER (143).
- Ophiomusium*; DELAGE (54) p. 150, fig. *O. altum* **n. sp.**, Macassar Str., 2029 m. (p. 57, pl. x), *O. elegans*, discussed (p. 66), *O. fallax* **n. sp.**, Gilolo passage, 469 m. (p. 56, pls. ix, x); KOEHLER (143). + *O. ferrugineum*, redescri.; LEUTHARDT (152) p. 110, pl. ii. *O. impurum* **n. sp.**, Banda sea, 120–400 m. (p. 64, pl. x), *O. lunare*, *O. lymani* (p. 58), *O. properum* **n. sp.**, N. of Sumbawa & Macassar Str., 695–724 m. (p. 62, pl. x), *O. relictum* **n. sp.**, Gilolo passage, 469 m. (p. 61, pl. x), *O. sanctum* **n. sp.**, Molo Str. and Timor, 54–216 m. (p. 59, pl. xi), *O. scalare*, discussed (p. 65), *O. serratum* (p. 66), *O. validum*, and young, compared with *O. lunare* (p. 59); KOEHLER (143).
- Ophiomyces*; DELAGE (54) p. 153. *O. delata* **n. sp.**, Sulu Archipel. and Banda sea, 350–4239 m.; KOEHLER (143) p. 100, pls. xvii, xviii.
- Ophiomytis* **n. g.** of *Ophiucanthidae*, with genotype *O. weberi* **n. sp.**, Timor, 520 m.; KOEHLER (143) p. 142, pl. xviii.
- Ophiomyxa*, descr.; DELAGE (54) p. 146 & fig. *O. ?* juv.; HERDMAN (120) p. 147. *O. brevispina*; MARTENS (185). *O. vivipara*; LUDWIG (164) p. 695.
- Ophioncus*; DELAGE (54) p. 148.
- Ophionema*; DELAGE (54) p. 155.
- Ophioneptlys*; DELAGE (54) p. 155.
- Ophionereis*; op. cit. p. 153. *O. ?* sp.; HERDMAN (120) p. 146. *O. fusca*, a cotype; KOEHLER (144) p. 72 & figg.
- Ophiopaepale*; DELAGE (54) p. 150. *O. goesiana*, holotype redescri.; KOEHLER (144) p. 57 & figg.
- Ophiopallas* **n. g.** of *Ophiodermatidae*, with genotype *O. paradoxa* **n. sp.**, Macassar, Gilolo Passage, and Banda sea, 204–450 m.; KOEHLER (143) p. 12, pl. iii.
- Ophiopeza*; DELAGE (54) p. 149. *O. aequalis* (p. 10), *O. custos*, referred to *Ophioplax* (p. 67); KOEHLER (143).
- Ophiopezella*; DELAGE (54) p. 149.
- Ophiopholis*; op. cit. p. 153. *O. aculeata*; GRIEG (106) p. 30: KIAER (140): MICHAÏLOVSKIJ (192) p. 173: ÖSTERGREN (204): descr., range; CLARK (38) p. 559, pls. v, vii.
- Ophiophragmus*; DELAGE (54) p. 153.
- Ophiophthirius*; DELAGE (54) p. 157.

- Ophiophyllum* ; DELAGE (54) p. 150 & figg.
Ophiopanax ; DELAGE (54) p. 149.
Ophioplax ; op. cit. p. 153. *O. custos* (Koehl. sub *Ophiopeza*) discussed ;
KOEHLER (143) p. 67.
Ophiopleura ; DELAGE (54) p. 150. *O. aurantiaca*, descr., compared with
O. borealis ; GRIEG (106) p. 17 & fig. *O. borealis* ; op. cit. p. 15 :
MICHAILOVSKIJ (192) p. 171.
Ophioplinthaca, diagnosis (p. 123), *O. chelys* (p. 131), *O. citata* **n. sp.**,
Banda sea and Gilolo Passage, 204-469 m. (p. 130, pl. xxiv), *O.*
miranda **n. sp.**, Banda sea, 984 m. (p. 123, pl. xxxi), *O. mitis* **n. sp.**,
ibid., 204-304 m. (p. 127, pl. xxv), *O. pulchra* **n. sp.**, Malay Archipel.,
304-522 m. (p. 125, pl. xxvii), *O. rudis* (Koehl. sub *Ophiomitra*) (p. 132),
O. vicina **n. sp.**, Banda sea, 1595 m. (p. 129, pl. xxv) ; KOEHLER (143).
Ophioplinthus ; DELAGE (54) p. 150.
Ophioplocus ; DELAGE (54) p. 150.
Ophiopsammium ; DELAGE (54) p. 156.
Ophiopsila ; op. cit. p. 153. *O. aranea* ; MAR. BIOL. ASS. (184) p. 209.
Ophiopteris ; DELAGE (54) p. 155.
Ophiopteron ; op. cit. p. 156, figg. *O. elegans* ; HERDMAN (120) p. 147 :
wide distrib. ; BELL in op. cit. p. 148.
Ophiopus ; DELAGE (54) p. 153. *O. arcticus* ; GRIEG (106) p. 30.
Ophiopyren ; DELAGE (54) p. 149, fig. *O. delatum* **n. sp.**, Java sea, 538 m. ;
KOEHLER (143) p. 10, pl. iii.
Ophiopyrgus ; DELAGE (54) p. 150, figg. *O. depressus*, Macassar Str.,
2029 m. (p. 31, pl. iv), *O. trispinosus*, Malay Archipelago, 120-1914 m.
(p. 30, pl. v) : **n. spp.** ; KOEHLER (143).
Ophioscisma ; DELAGE (54) p. 155.
Ophioscolex ; loc. cit. *O. glacialis* ; GRIEG (106) p. 32 : slight variations ;
MICHAILOVSKIJ (192) p. 174. *O. pertinax* **n. sp.**, Banda sea, 404 m. ;
KOEHLER (143) p. 145, pl. xxv. *O. purpureus* ; GRIEG (106) p. 32.
Ophiosphaera ; DELAGE (54) p. 157 : systematic position uncertain (p. 117),
O. insignis, a cotype descr. (p. 116, figg.) ; KOEHLER (144).
Ophiostigma ; DELAGE (54) p. 153.
Ophiothumnus ; op. cit. p. 154. *O. stultus* **n. sp.**, Malay Archipel., 794-
1158 m. ; KOEHLER (143) p. 141, pls. xxv, xxvi.
Ophiothela ; DELAGE (54) p. 156.
Ophiotholia ; op. cit. p. 153. *O. multispina* **n. sp.**, Malay Archipel., 216-
567 m. ; KOEHLER (143) p. 99, pl. xxxiii.
Ophiothrichoides ; DELAGE (54) p. 156.
Ophiothrix, descr. ; op. cit. p. 155, figg. : variability ; BELL in HERDMAN
(120) p. 150. *O. aristulata* ; KOEHLER (143) p. 151. *O. ? aspidota* ;
HERDMAN (120) p. 146 : holotype redescr., also specimen fr. Ceylon,
Brock's specimen referred to *O. bedoti* ; KOEHLER (144) p. 87, figg.
O. capillaris, variations ; KOEHLER (143) p. 151. *O. carinata*, a cotype
redescr. (p. 90, figg.), *O. ciliaris*, cotypes redescr. (p. 100, figg.) ;
KOEHLER (144). *O. clarescens* **n. sp.**, Banda sea, 304 m. ; KOEHLER
(143) p. 150, pls. xxix, xxx. *O. comata*, holotype redescr., distinguished
fr. specimens so named by Marktanner, de Loriol, & Koehler ;
KOEHLER (144) p. 105, figg. *O. crassispina*, Sumbawa Id., 274 m.
(p. 147, pls. xxviii-xxx), *O. deposita*, Malay Archipel., 204-520 m.
(p. 146, pl. xxix) : **n. spp.** ; KOEHLER (143). *O. elegans*, holotype
redescr. ; KOEHLER (144) p. 110 & figg. *O. fragilis* ; GRIEG (106)
p. 32 : KIAER (140) : MACBRIDE (172) : MALARD (179) p. 192 : MAR.
BIOL. ASS. (184) p. 210 : NOBRE (198) p. 54, & (199) : RETZIUS (226)
p. 27 : ZIEGLER (298). *O. fumaria*, holotype redescr. (p. 77 & figg.),
O. marenzelleri **n. sp.**, Japan, referred to *O. stelligera* by Marktanner
(p. 103, figg.), *O. merguensis*, holotype distinguished fr. *O. ciliaris*
(p. 102) ; KOEHLER (144). *O. ? nereidina* ; HERDMAN (120) p. 146.

- O. picteti*, holotype compared with Brock's *O. foveolata*, which is syn. (p. 110), *O. proteus* n. sp., based on *O. comata* Koehler, 'Investigator' coll. (p. 109), *O. roseo-coerulans*, cotypes redescri. (p. 97, figg.), *O. smaragdina*, a cotype redescri. (p. 92, figg.), *O. spongicola*, redescri. (p. 95, figg.), *O. stabilis* n. sp., S. E. Japan (p. 84, figg.), *O. tenera*, holotype redescri. (p. 113, figg.), *O. triglochis*, redescri. (p. 81, figg.); KOEHLER (144). *O. viator* n. sp., Banda sea, 304 m.; KOEHLER (143) p. 148, pl. xxxi. *O. virgata*, Brock's specimen descri.; KOEHLER (144) p. 80 & fig.
- Ophiothyreus*; DELAGE (54) p. 150. *O. goesii*, cotypes redescri.; KOEHLER (144) p. 59 & figg.
- Ophiotoma*; DELAGE (54) p. 155. *O. assimilis* n. sp., Ceram & Timor, 567-918 m.; KOEHLER (143) p. 144, pl. xxviii.
- Ophiotrema*; DELAGE (54) p. 155.
- Ophiotrixinae*, defined with list of genera; DELAGE (54) p. 155.
- Ophiotrochus*; op. cit. p. 150. *O. panniculus*; KOEHLER (143) p. 15.
- Ophiotypa*; DELAGE (54) p. 152.
- Ophiozona*; op. cit. p. 150, fig.: content discussed (p. 25), *O. casta* n. sp., Banda sea, 560 m. (p. 22, pls. v, vi), *O. depressa* n. var. *media*, N. Celebes & Timor, 918-1264 m. (p. 24, pl. iv); KOEHLER (143). *O. dubia*, vide *Ophiomidas*. *O. molesta* n. sp., Sulu Archipel., 1270 m.; KOEHLER (143) p. 23, pl. vi.
- Ophiura*, descri.; DELAGE (54) p. 149, figg. *O. sp.*; HERDMAN (120) p. 146: RETZIUS (226) p. 27: + ROWE (235) p. 293. *O. albida*; GRIEG (106) p. 21: MALARD (179) p. 192: MAR. BIOL. ASS. (184) p. 208: ÖSTERGREN (204). *O. brevispina*, descri., range; CLARK (38) p. 558, pls. v, vii. *O. ciliaris*; GRIEG (106) p. 21: MAR. BIOL. ASS. (184) p. 208: NOBRE (199). *O. divisa*, syn. of *O. inornata*; KOEHLER (143) p. 4, 41. *O. nodosa*; GRIEG (106) p. 26: MICHAÏLOVSKIÏ (191) & (192) p. 173. *O. robusta*; GRIEG (106) p. 26: MICHAÏLOVSKIÏ (192) p. 172. *O. sarsi*; loc. cit.: a cold area var.; GRIEG (106) p. 21.
- +*Ophiurella speciosa*; WALTHER (281) p. 166.
- Ophiurina*?; BATHER in FOX (84) p. 752 [proves to be a new genus, 1905].
- Ophiuropsis*; DELAGE (54) p. 158.
- +*Palophiuridae*, descri.; DELAGE (54) p. 144 et sq.
- Paramphiura*; DELAGE (54) p. 152.
- Pectinura*; op. cit. p. 149. *P. conspicua*; KOEHLER (143) p. 9, pl. i. *P. gorgonia*; HERDMAN (120) p. 146. *P. heros* (p. 9), *P. honorata* n. sp., Banda sea, 304 m. (p. 8, pl. ii); KOEHLER (143). *P. intermedia*; HERDMAN (120) p. 146. *P. modesta* n. sp., Java sea, 330 m.; KOEHLER (143) p. 7, pl. ii.
- +*Protaster*, descri.; DELAGE (54) p. 146.
- Sthenocephalus*; DELAGE (54) p. 159.
- Streptophiurida*, defined; DELAGE (54) p. 145 & 146.
- Trichaster*, descri.; DELAGE (54) p. 158 & figg.
- Trichasterinae*, defined, with list of genera; loc. cit.
- Zygophiurida*, divided into Suborders *Brachy-*, and *Nect-ophiuridae*; DELAGE (54) p. 148.

(F.) CRINOIDEA*.

- Diagnosis of class; HAMANN (112) p. 1415. *Crinoidia*, defined and classified in Orders, 1. *Larviformida*, 2. *Fistulida*, 3. *Camerida*, 4. *Articulida*; DELAGE (54) p. 375.
- +*Acrocrinus*; DELAGE (54) p. 383, fig.

* Names that are sometimes given the termination *-ites* (e.g. *Pentacrinites*) are here treated as always ending in *-us*.

- †*Actinocrinus* descr.; op. cit. p. 385. *A. multiramosus* n. var. *altidorsatus*, Keokuk, Washington co. Ind.; ROWLEY in GREENE (105) p. 187, pl. lvii.
- †*Actinocrinusinae*, defined with list of genera; DELAGE (54) p. 385.
- Actinometra*; op. cit. p. 395, fig. *A. multiradiata*, syzygies (p. 157), *A. notata*, variations from type (p. 157), *A. parvicirra*, variations from type (p. 158, pl.); CHADWICK (35).
- †*Aesiocrinus*; SCHUCHERT (247) pl. ci.
- †*Allagecrinus*; DELAGE (54) p. 377.
- †*Allegecrinusinae*, defined, with list of genera; loc. cit.
- †*Ancyrocrinus*; JAEKEL (132). *A. bulbosus*; CLARKE & LUTHER (40) p. 52.
- Antedon* descr.; DELAGE (54) p. 339, 394, figg.; SCHUETZE (251) p. 157. *A. anceps*; CHADWICK (35) p. 157. *A. barentsi* vide *A. eschrichti*. *A. bella* & var. *brunnea*; CHADWICK (35) p. 155. *A. bifida*; MAR. BIOL. ASS. (184) p. 207; NOBRE (198) p. 52: measurements; GRIEG (107) p. 23, fig.: v. etiam *A. rosacea*. *A. carinata*; CHADWICK (35) p. 154. *A. celtica* vide *A. eschrichti*. *A. eschrichti* incl. *A. celtica*, *quadrata*, *barentsi*, fixed stage, measurements; GRIEG (107) p. 13, 23: incl. *A. barentsi*, local variations; MICHAILOVSKIJ (192) p. 175. †*A. formosus*; WALTHER (281) p. 165. *A. hirsuta*; ANDERSSON (10). *A. indica*, *A. marginata*, *A. milberti*, syzygies (p. 154), *A. okelli* n. sp. of *Palmata* group, W. coast Ceylon & G. of Manaar, 8-36 fm. (p. 155, pl.); CHADWICK (35). *A. petasus*, measurements (p. 23, fig.), *A. phalangium* (p. 6, 23); GRIEG (107). †*A. pinnatus*; WALTHER (281) p. 158, 165. *A. proliza*; MICHAILOVSKIJ (192) p. 176: measurements, comparison with *A. tenella* et al., cirrals, syzygies, genital pinnules; GRIEG (107) p. 20, 22, & fig. *A. quadrata*, provisionally kept distinct from *A. eschrichti* (q. v.); MICHAILOVSKIJ (192) p. 176. *A. reynaudi*, redescrib.; CHADWICK (35) p. 156, pl. †*A. rhodanicus*, Suabia, comparative measurements; SCHUETZE (251) p. 156, pl. ii. *A. rosacea*; LUDWIG (164) p. 699: v. etiam *A. bifida*. *A. serripinna*, Ceylon, variations from type; CHADWICK (35) p. 153, pl. *A. tenella*, measurements, v. sub *proliza*, fixed stage; GRIEG (107) p. 20, 22 & fig. *A. variipinna*; CHADWICK (35) p. 157.
- Antedoninae* defined, with list of genera; DELAGE (54) p. 394.
- †*Aorocrinus*:—*A. cauliculus*, *A. pocillum*, *A. praecursor*; CLARKE & LUTHER (40) p. 52.
- †*Apiocrinus*:—*A. mulleri*; SIEMIRADZKI (255) p. 139. *A. munsterianus*, *A. polycyphus*; MAIRE (178). *A. rosaceus*?; ROLLIER (230) p. 464.
- †*Apiocrinusinae*, defined, with list of genera; DELAGE (54) p. 390.
- †*Arachnoocrinus extensus*, divergences from type, which came as this from Upper Helderberg; ROWLEY in GREENE (104) p. 180, 184, pl. liv.
- †*Archaeocrinus*; DELAGE (54) p. 386, fig. *A. desideratus* (p. 63), *A. microbasalis* (p. 62), *A. pyriformis* (p. 61, 62, 63); AMI (7).
- †*Arthracaantha punctobrachiata*, arms; WOOD (291) p. 81, pl. xvi.
- Articulida*, Order, defined (p. 376) descr. & divided into Suborders 1. *Flexibilidae*, 2. *Canaliculidae* (p. 387); DELAGE (54).
- †*Austinocrinus meyeri*, *rothpletzi*, *zitteli* may all be from one sp. of *Isocr.*; JAEKEL (133).
- †*Balanocrinus*, vide sub *Pentacrinus*.
- †*Barrandeocrinus*; DELAGE (54) p. 384, fig.
- †*Barycrinus hoveyi*; WHITFIELD (286) pls.
- Bathyrinus* discussed; DELAGE (54) p. 391, figg. *B. carpenteri*, measurements, stem, basals, union of Br.; GRIEG (107) p. 8.
- †*Batocrinus* descr.; DELAGE (54) p. 384, fig. *B. crassitestus* n. sp., Warsaw Limest., Lanesville, Ind. (p. 172, pl. li), *B. danisi*, redescrib. with n. varr. *lanesvillensis* et *sculptus*; ibid. (p. 171, 172, 174, pl. li),

- B. icosidactylus*, redescri. (p. 173, 174, pl. li), *B. irregularis*, redescri. (p. 171, pl. li), *B. magnirostris* **n. sp.**, Warsaw Limest., Lanesville, Ind. (p. 170, pl. li); ROWLEY in GREENE (103). *B. spergenensis*; ROWLEY in GREENE (105) p. 188, pl. lvii.
- +*Batocrinusinae*, defined with list of genera; DELAGE (54) p. 384.
- +*Botryocrinus americanus* **n. sp.**, Hamilton group, Charlestown, Ind.; ROWLEY in GREENE (104) p. 184, pl. liv.
- +*Bourgueticrinus*:—*B. sp.*, dwarf; ROWE (235) p. 256, 266, 293. *B. sp.* (nipple-headed); DIBLEY (62). *B. ellipticus*; COLLET (44) p. 77: HINDE (125): TÜRNEBOHM (267) p. 143.
- +*Cainocrinus andreae* vide sub *Pentacrinus*.
- Calamocrinus* descr.; DELAGE (54) p. 390, figg.
- +*Calceocrinus*; op. cit.; DELAGE (54) p. 379, fig. *C. alleni* **n. sp.**, Clinton group, Pike co., Mo.; ROWLEY (236) p. 275, pl. xvi. *C. clarus*; CLARKE & LUTHER (40) p. 55.
- +*Calceocrinusinae*, defined with list of genera; DELAGE (54) p. 379.
- +*Callicrinus*; DELAGE (54) p. 384, fig.
- +*Camarocrinus* (et err. *Camerocr.*), syn. *Lobolithus*; FRIČ (88): JAEKEL (132): history of opinion, mode of occurrence in America and Bohemia, diagnosis, incl. *Lobolithus* but not *Scyphocr.*, believed to be a float (p. 253-269), *C. saffordi*, descr. (p. 270, pl. xl), *C. stellatus*, descr. (p. 269, pl. xlv), *C. ulrichi*, descr. (p. 271, pls. xli-xliii) with **n. var. stellifer**, Lower Helderberg (p. 272, pls. xl, xli); SCHUCHERT (249).
- +*Camerida*, Order, defined (p. 376) descr. (p. 382) with Famm. *Platycrinus*-, *Glyptocrinus*-, *Batocrinus*-, *Actinocrinus*-, *Rhipidocrinusinae*; DELAGE (54).
- Canaliculidae*, Sub-Order, defined (p. 388) with Famm. *Encrinus*-, *Uintacrinus*-, *Apiocrinus*-, *Rhizocrinus*-, *Holopus*-, *Saccocom*-, *Pentacrinus*-, *Antedoninae* (p. 389); DELAGE (54).
- +*Catillocrinus*; DELAGE (54) p. 379.
- +*Catillocrinusinae*, defined, with list of genera; loc. cit.
- +*Cleioocrinus grandis*; AMI (7) p. 63.
- +*Coccocrinus*; DELAGE (54) p. 377.
- +*Compsoocrinus*; DELAGE (54) p. 384, fig.
- +*Cordylocrinus? dubius* **n. sp.**, Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 272, pl. xvi.
- +*Cothocrinus*; DELAGE (54) p. 392.
- +*Cotylederma* sp.; SCHAEFER (242) p. 34.
- +*Crotalocrinus*; DELAGE (54) p. 380, figg.
- +*Cupressocrinus*; DELAGE (54) p. 380, fig.
- +*Cyathidium holopus*, habitat; HENNIG (115) p. 55: RAVN (223) p. 351: TÜRNEBOHM (267) p. 143.
- +*Cyathocrinus* descr.; DELAGE (54) p. 379, fig. *C. bulbosus*; CLARKE & LUTHER (40) p. 43. *C.? ovalis* **n. sp.**, "almost certainly not *Cyathocr.*", Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 271, pl. xvi. *C. ramosus?*; KITTL (141) p. 686.
- +*Cyathocrinusinae*, defined with list of genera; DELAGE (54) p. 379.
- +*Dadocrinus gracilis*; KITTL (141) p. 539.
- +*Decadocrinus*; DELAGE (54) p. 381, fig.
- +*Dendrocrinus* descr.; DELAGE (54) p. 380. *D. acutidactylus*, *D. congregatus*, *D. conjugans*; AMI (7) p. 62.
- +*Dendrocrinusinae*, defined with list of genera; DELAGE (54) p. 380.
- +*Dimerocrinus* [fig. 479, showing dorsal nerve-cords is not this genus but *Encrinus*, belonging to a different Order]; op. cit. p. 386.
- +*Dolatocrinus*, small value of arm-branching in classification (p. 69), *D. sp.* (p. 73, fig.), *D. amplus* (p. 78), *D. asterias* **n. sp.**, Devonian, Upper Traverse Limest., Michigan, & abnormality (p. 71, pl. xvi), *D. caelatus* (p. 77), *D. charlestownensis* (p. 74), *D. costatus* **n. sp.**, Devonian,

Mid. Traverse Limest., Michigan (p. 70, pl. xvi); WOOD (291). *D. excavatus*; op. cit. p. 78: variations in IBr.; ROWLEY in GREENE (105) p. 191, pl. lviii. *D. glyptus*; CLARKE & LUTHER (40) p. 49, 52: WOOD (291) p. 76. *D. grandis* (p. 79), *D. greenei*, discussed (p. 74), *D. hammelli* (p. 75), *D. indianensis* (p. 77); WOOD (291). *D. intermedius*; CLARKE & LUTHER (40) p. 52. *D. lacus*; WOOD (291) p. 73. *D. liratus*; CLARKE & LUTHER (40) p. 49, 52. *D. major* (p. 76), *D. ornatus*, distinguished from *D. glyptus* (p. 76), *D. pulchellus* (p. 79), *D. salebrosus*, variation (p. 78); WOOD (291). *D. triadactylus*; GRABAU (102A) p. 193, 194: incl. *D. aplatus*; WOOD (291) p. 74. *D. troosti*; CLARKE & LUTHER (40) p. 52. *D. venustus* (p. 79), *D. wachsmuthi* **nom. nov.** pro *D. lyoni* W. & Sp. non Mill. & Gurl. (p. 77); WOOD (291).

†*Edriocrinus pyriformis*; CLARKE & LUTHER (40) p. 43.

†*Enercinus* descr. [vide sub *Dimerocr.*]; DELAGE (54) p. 389. *E. cassianus*; FIEDLER (77): KITTL (141) p. 703 & cf. *cassianus*, p. 645. *E. granulatus*; op. cit. p. 579, 703, & cf. *granulosus*, p. 576. *E. liliiformis*; LANGENHAN (150): ZLATARSKI (299). *E. cf. moniliformis*; DEL CAMPANA (56) p. 554. *E. silesiacus*; ZLATARSKI (299).

†*Enercinusinae* defined with list of genera; DELAGE (54) p. 389.

†*Erisocrinus* sp.; BEEDE & ROGERS (21).

†*Eugeniocrinus*; DELAGE (54) p. 392, fig. *E. hoferi*; MAIRE (178).

†*Euspirocrinus*; DELAGE (54) p. 380.

Fistulida, Order, defined (p. 375), descr. (p. 377) with Famm. *Hybocrinus*-, *Heterocrinus*-, *Calceocrinus*-, *Catilloocrinus*-, *Cyathocrinus*-, *Dendrocrinus*-, *inae*; DELAGE (54).

†*Flexibilidae*, Suborder, defined with Famm. *Ichthyocrinus*-, *Marsupitesinae*; DELAGE (54) p. 388.

†*Forbesocrinus*:—*F.* sp.; PEACH (209) p. 850. *F. lobatus*; CLARKE & LUTHER (40) p. 55.

Gasterocomidae, vide *Tripleurocrinus*.

†*Gennaeocrinus*:—*G. carinatus*; WOOD (291) p. 80. *G. eucharis*; CLARKE & LUTHER (40) p. 52. *G. kentuckiensis*, extra IBr.; WOOD (291) p. 80 & fig. *G. nyssa*; CLARKE & LUTHER (40) p. 52. *G. simulans* **n. sp.**, Hamilton group, Charlestown, Ind.; ROWLEY in GREENE (104) p. 183, pl. liv.

Gephyrocrinus; DELAGE (54) p. 393.

†*Gilbertocrinus*; op. cit. p. 386, fig. *G. indianensis*; WOOD (291) p. 81. *G. spinigerus*; CLARKE & LUTHER (40) p. 52.

†*Gissocrinus?* *problematicus* **n. sp.**, Clinton group, Louisiana, Mo.; ROWLEY (236) p. 277, pl. xvi.

†*Glyptocrinus*; DELAGE (54) p. 383. *G. insperatus* **n. sp.** (p. 275) & **n. varr. pentagonus** (p. 276), *carinatus* (p. 278), Clinton group, Pike co., Mo.; ROWLEY (236) pl. xvi. *G. cf. priscus* (p. 71), *G. ramulosus* (p. 61, 62); AMI (7).

†*Glyptocrinusinae* defined with list of genera; DELAGE (54) p. 383.

†*Haplocrinus* descr.; DELAGE (54) p. 377, figg.

†*Haplocrinusinae* defined; DELAGE (54) p. 377.

†*Herpetocrinus* [fig. 450 "*Bras de H. fletcheri*" is really a view of the whole animal]; DELAGE (54) p. 379.

†*Heterocrinus*; DELAGE (54) p. 379. *H. simplex canadensis*; AMI (7) p. 64.

†*Heterocrinusinae* defined with list of genera; DELAGE (54) p. 379.

Holopus descr.; op. cit. p. 392, figg. *H. rangi*, habitat; HENNIG (115) p. 57.

†*Holopusinae* defined with list of genera; DELAGE (54) p. 392.

†*Hybocrinus* descr.; DELAGE (54) p. 378.

†*Hybocrinusinae* defined with list of genera; loc. cit.

†*Hydreionocrinus globularis*; PEACH (209) p. 850.

Hyocrinus descr.; DELAGE (54) p. 392.

Hyocrinusinae defined with list of genera; loc. cit.

+*Hystericrinus depressus*; CLARKE & LUTHER (40) p. 65.

+*Ichthyocrinus*; DELAGE (54) p. 388.

+*Ichthyocrinusinae* defined with list of genera; loc. cit.

+*Iocrinus subcrassus*; AMI (7) p. 65.

Isocrinus vide sub *Pentacrinus*.

+*Lampetrocrinus? comptus* n. sp., detached plates, Clinton group, Louisiana, Mo.; ROWLEY (236) p. 279, pl. xvi.

+*Larviformida*, Order, defined (p. 375) with Famm. *Haplocrinus*-, *Allagecrinus*-, & *Stephanocrinus*-inae (p. 377); DELAGE (54).

+*Lecanocrinus hemisphericus* n. sp., Niagaran, Ste. Genevieve co., Mo.; ROWLEY (236) p. 271, pl. xvi.

+*Lichenocrinus*; JAEKEL (132). *L. crateriformis*; AMI (7) p. 65.

Lobolithus (vide etiam *Camarocr.*), *L. sp.*; FRIČ (88): Probably a nodule; PERNER in Abstract.

+*Mariacrinus*; DELAGE (54) p. 383 & fig.

+*Marsupites*; JAEKEL (132): descr.; DELAGE (54) p. 388. *M. testudinarius*; HINDE (125); ROWE (235) p. 293; WRIGHT (294).

+*Marsupitesinae* defined with list of genera; DELAGE (54) p. 388.

+*Megistocrinus*; op. cit. p. 385, fig. *M. abnormis*, ornament; WOOD (291) p. 63, pl. xv. *M. circulus?*, divergences from type; ROWLEY in GREENE (104) p. 181, pl. liv. *M. concavus*; WOOD (291) p. 65. *M. depressus*; CLARKE & LUTHER (40) p. 52, incl. *M. ornatus* (p. 64), *M. expansus*, loss of arms (p. 66), *M. farnsworthi* (p. 64), *M. latus* (p. 66), *M. multidecoratus* (p. 65), *M. nodosus*, variations fr. type (p. 65); WOOD (291). *M. ontario*; CLARKE & LUTHER (40) p. 48, 52. *M. regularis* n. sp., Devonian, Mid. Traverse Limest., Michigan (p. 59, pl. xv), *M. rugosus*, variations fr. type (p. 63), *M. sphaeralis* n. sp., Devonian, Mid. Traverse Limest., Michigan, also abnormality (p. 60, pl. xv); WOOD (291). *M. spinosulus*; op. cit. p. 65: notes; ROWLEY in GREENE (104) p. 182, pl. liv. *M. tuberatus* n. sp., Devonian, Upper Traverse Limest., Michigan, also young; WOOD (291) p. 57, pls. xv, xvi.

+*Melocrinus*; DELAGE (54) p. 383, fig. *M. clarkei* (p. 62), *M. gracilis* (p. 52); CLARKE & LUTHER (40). *M. wittenbergensis* n. sp., Delthyris Limest., Silurian, Wittenberg, Mo.; ROWLEY (236) p. 274, pl. xvi.

Metacrinus rotundus incl. *M. interruptus*; SPERRY (265).

+*Millerocrinus*:—*M. cf. adneticus*; MARIANI (183) p. 153, 154. *M. echinatus*; STRANGWAYS (266) p. 40, 49. *M. escheri*, *M. goupilianus*; MAIRE (178). *M. hausmanni*; MARIANI (183) p. 154. *M. horridus*; MAIRE (178). *M. longimanus*, *M. mespiliformis*, *M. nobilis*; WALTHER (281) p. 165. *M. nodotianus*, *M. regularis*; MAIRE (178). *M. rosaceus*; WALTHER (281) p. 165.

+*Myrtillocrinus*; DELAGE (54) p. 380, fig. *M. americanus*; CLARKE & LUTHER (40) p. 43.

+*Parisocrinus*; DELAGE (54) p. 380, figg.

+*Pentacrinus* [including *Balanocr.*, *Cainocr.*, *Isocr.*]; op. cit. p. 394, figg. *P. sp.*; BOEHM (28) p. 7, pl. i. *P. sp.* columnars of special shape; ROWE (235) p. 243, 293. *P. alternans* d'Orb; LORIOL (162) p. 62. *P. amblyscalaris*; MAIRE (178): SIEMIRADZKI (255) p. 139. *Cainocr. andreae* & var. nov. *major*, descr.; LEUTHARDT (152) p. 93, pl. ii, fig *P. cf. andreae*; MADSEN (176) pp. 172, 200, pl. vi. *P. angulatus*; SCHAEFER (242) p. 31. *P. annulatus?*; STRANGWAYS (266) p. 67, 73. *Isocr. australis*, n. var. *albascopularis*, Upper Cretaceous, White Cliffs, N.S.W.; ETHERIDGE (74) p. 251, pl. xxviii. *P. bajocensis*; RICHE (228) p. 210. *P. basaltiformis*; MARIANI (183) p. 153, 154: SCHAEFER (242) p. 34: ZLATARSKI (299). *P. buchi*; COLLET (44)

p. 77, 79. *P. desori*; SIEMIRADZKI (255) p. 139. *P. fittoni*; FEARN-SIDES (76): STRANGWAYS (266) p. 78. *P. fossilis*; SCHUCHERT (247) pl. cii. *P. geveyi* **n. sp.**, Valangian, Malleval, Isère, columnals only; LORIOLO (162) p. 59, pl. iv. *Isocr. holsaticus* **n. sp.**, Senonian, Holstein; JAEKEL (133) p. 195. *P. lanceolatus*; JAHN (135). *P. leuthardi*, redescr.; LEUTHARDT (152) p. 102, pl. iii. *P. lissajouxi* **n. sp.**, Hauterivian, St. Pierre de Cherenne, Isère, columnals only (p. 63, pl. iv), *P. mallevalensis* **n. sp.**, Neocomian, Malleval, Isère, columnals only (p. 60, pl. iv), *P. neocomiensis* d'Orbigny non Desor is perhaps *P. mallevalensis* (p. 61), *P. peyroutensis* **n. sp.**, Hauterivian, Peroules, Basses-Alpes, columnals only (p. 62, pl. iv); LORIOLO (162). *P. cf. punctiferus*; ZLATARSKI (299). *P. scalaris*; SCHAEFER (242) p. 32. *P. sigmaringensis*; ROLLIER (230) p. 464. *P. subangularis*; SCHAEFER (242) p. 34: SCHUCHERT (247) pl. ci. *P. subteroides*; SCHAEFER (242) p. 34: sub *Balanocr.*; RZEHAK (238) p. 148, & (239). *P. tuberculatus*; MARIANI (183) p. 138: SCHAEFER (242) p. 31. *P. vulgaris*; STRANGWAYS (266) p. 9, 15. *P. wiesbauri* **n. sp.**, Mid. Lias, Moravia, columnals; RZEHAK (238) p. 148, pl. i.

Pentacrinusinae defined with list of genera; DELAGE (54) p. 394.

Periechocrinidae, vide *Tylocrinus*.

+*Periglyptocrinus billingsi*; AMI (7) p. 62, 63.

+*Petalocrinus*; DELAGE (54) p. 380, fig.

+*Phyllocrinus* aff. *nutantiformis*; DEL CAMPANA (55) p. 268.

+*Pisocrinus*:—*P. glabellus* **n. sp.**, Niagaran, Ste. Genevieve co., Mo. (p. 270, pl. xvi), *P. globosus*? "if distinct might be called *P. sphaericus*," ibid. (p. 270, pl. xvi), *P. gorbys*?, descr. (p. 269, pl. xvi), *P. granulatus* **n. sp.**, Niagaran, Ste Genevieve co., Mo. (p. 269, pl. xvi); ROWLEY (236). *P. sphaericus* **n. sp.**? vide *P. globosus*. *P. (?) yassensis* **n. sp.** with **n. var. lobata** Silurian near Yass, N.S.W.; ETHERIDGE (75).

+*Platycrinus* descr.; DELAGE (54) p. 383, figg. *P. eboreus*; CLARKE & LUTHER (40) p. 48, 55. *P. laevis*, *P. ornatus*; DESTINEZ (59) p. M 145. *P. striobrachiatus*; WHITFIELD (286).

+*Platycrinusinae* defined with list of genera; DELAGE (54) p. 383.

+*Plicatocrinus fraasi*; WALTHER (281) p. 158.

+*Porocrinus*; DELAGE (54) p. 380 & fig.

+*Poteriocrinus*:—*P?* sp.; KITTL (141) pp. 666, 681. *P. crassus*; PEACH (209) pp. 842, 849, 850. *P. diffusus*; CLARKE & LUTHER (40) p. 52. *P. fusiformis*; HIND (123) p. 192. *P. nereus*, *P. nycteus*; CLARKE & LUTHER (40) p. 52.

+*Reteocrinus*; DELAGE (54) p. 386, fig.

+*Rhipidocrinus* descr.; DELAGE (54) p. 385.

+*Rhipidocrinusinae* defined with list of genera; loc. cit.

Rhizocrinus descr.; op. cit. p. 391, figg. *R. lofotensis*; GRIEG (107) p. 12.

+*Rhizocrinusinae* defined with list of genera; DELAGE (54) p. 391.

+*Rhodocrinus*:—*R. gracilis*, *R. nodulosus*; CLARKE & LUTHER (40) p. 52. *R. pyriformis*; AMI (7) p. 61. *R. spinosus*; CLARKE & LUTHER (40) p. 52.

+*Saccocoma* descr.; DELAGE (54) p. 393. *S. pectinata* (p. 165), *S. schwertschlagerei* **n. sp.**, Kimmeridgian, Solenhofen Plattenkalk (p. 166, fig.), *S. tenella* (p. 158, 165); WALTHER (281).

+*Saccocominae* defined with list of genera; DELAGE (54) p. 393.

+*Scaphiocrinus longicaudatus* **n. sp.**, Viséan, Belgium; FRAIPONT (85) p. 7, pl. i.

+*Scyphocrinus* (vide etiam *Lobolithus*); DELAGE (54) p. 383. *S. elegans*; ROUSSEL (238) p. 16.

+*Solanocrinus gracilis*; WALTHER (281) p. 165.

+*Stephanocrinus*; DELAGE (54) p. 377.

+*Stephanocrinusinae* defined; loc. cit.

- +*Stereocrinus*:—*S. barrisi*; WOOD (291) p. 79. *S.?* *indianensis*, notes; ROWLEY in GREENE (104) p. 182, pl. liv.
- +*Strotocrinus*; DELAGE (54) p. 385, fig.
- +*Synerocrinus*; DELAGE (54) p. 388, fig.
- +*Taxocrinus*; loc. cit., fig. *T. lobatus*; WOOD (291) p. 81.
- Thaumatoocrinus*; DELAGE (54) p. 395, fig.
- +*Thylacocrinus*; DELAGE (54) p. 386, fig. *T. clarkei*; CLARKE & LUTHER (40) p. 52.
- +*Tripleuroocrinus* n. g. of *Gasterocomidae* (p. 56), with genotype *T. levis* n. sp., Onondaga Limest., New York (p. 57 pl. xvi); WOOD (291).
- +*Tylocrinus* n. g. of *Periechocrinidae*, with genotype *T. novus* n. sp., Devonian, Upper Traverse Limest., Michigan, abnormality; WOOD (291) p. 66, pl. xvi.
- +*Uintacrinus*; JAEKEL (132): descr.; DELAGE (54) p. 389. *U.* sp.; DIBLEY (62); HINDE (125); ROWE (235) p. 293; WRIGHT (294). *U. socialis*; SCHUCHERT (248) pl. ciii: WHITEAVES (285).
- +*Uintacrinusinae* defined; DELAGE (54) p. 389.
- +*Vasocrinus sculptus*; WOOD (291) p. 81.

(G.) +CYSTIDEA*

(including EDRIOASTEROIDEA).

- Cystoidia* divided into Orders *Amphorida*, *Rhombiferida*, *Diploporida*, *Edrioasterida*; DELAGE (54) p. 405.
- Agelacrinus*; DELAGE (54) p. 415, fig. *A. chapmani*; AMI (7) p. 61. *A. cincinnatiensis*, anat.; SPENCER (264).
- Amphorida* Order defined, with Famm. *Aristocystis*-, *Anomalocystis*-, *Malocystis*-, & *Comarocystis*-inae; DELAGE (54) p. 405.
- Anomalocystis*, diagnosis, alleged anus, distinguished from *Ateleocystis* & *Placocystis* (p. 205), *A. cornutus* descr. (p. 206, pl. xl, fig.), *A. (?) disparilis* descr. (p. 207, fig.); SCHUCHERT (249).
- Anomalocystisinae* defined with list of genera; DELAGE (54) p. 407.
- Apiocystinae*, vide *Tetracystis*.
- Apiocystis*, diagnosis, distinguished from *Lepocrinites* [*Lepadocr.*] & credited with *A. pentrematoides*, *Pseudocr. oblongus* pars, & *A. elegans*; SCHUCHERT (249) p. 210. *A. canadensis*, vide *Callocystis*. *A. elegans*, specimen from Hamilton, Ont., descr. (p. 212, pl. xxxiv), *A.?* *huronensis*, holotype descr. (p. 212); SCHUCHERT (249). *A. imago*, vide *Hallicystis*. *A.?* *tecumseth*, rejected; SCHUCHERT (249) p. 211.
- Aristocystis* descr.; DELAGE (54) p. 407, figg.
- Aristocystisinae* defined with list of genera; DELAGE (54) p. 407.
- Asteroblastus*; DELAGE (54) p. 413, figg.
- Blastoidocrinus*; DELAGE (54) p. 413.
- Bolboporites americanus*; AMI (8) p. 140.
- Calix*; DELAGE (54) p. 407 & fig.
- Callocystis* diagnosis, incl. *Anthocystis* (p. 242), *C. canadensis* (Bill. sub *Apiocystis*) incl. *C. tripectinatus* Ringueb. (p. 245, pl. xxxiv), *C. jewettii* descr. (p. 243 & fig., pl. xxxiv); SCHUCHERT (249).
- Carpoida*, summary of Jaekel's classification, which is rejected; DELAGE (34) p. 406.
- Caryocrinusinae* defined with list of genera, DELAGE (54) p. 411.
- Caryocystis*; DELAGE (54) p. 410, fig.

† All extinct.

* Names that are sometimes given the termination *-ites* (e.g. *Anomalocystites*) are here treated as always ending in *-us*, *-a*, or *-is*, as the case may be.

- Coelocystis*, diagnosis, genotype in *Hemicosmites subglobosus* Hall incl. *Sphaerocystis dolomiticus* Jaekel (p. 246), *C. subglobosus* descr., abnormality (p. 248, figg.); SCHUCHERT (249).
- Comarocystis*; DELAGE (54) p. 408.
- Comarocystisinae* defined; loc. cit.
- Cryptocrinus*; DELAGE (54) p. 412.
- Cryptocrinusinae* defined; loc. cit.
- Cyathocystis*; DELAGE (54) p. 415 & fig.
- Cyclocystoides*; DELAGE (54) p. 416, fig.
- Cystaster*; DELAGE (54) p. 415, fig.
- Cystoblastus*; DELAGE (54) p. 411, figg.
- Dendrocystis*; DELAGE (54) p. 408, fig.
- Diploporida* Order defined (p. 405) with Famm. *Sphaeronites*-, *Glyptosphaerites*-, *Mesocystis*-, *Gomphocystis*-inae (p. 412); DELAGE (54).
- Discocystis*, vide *Echinodiscus*.
- Echinodiscus* Worth. & Miller [i.e. *Discocystis* Greg.], treated as *Ech.*, *E. kaskaskiensis*, *E. optatus*, *E. sampsoni*; KLEM (142) p. 73.
- Echinoencrinus* descr.; DELAGE (54) p. 411, fig. *E. fenestratus* n. sp. Niagan, Decatur co., Tenn., Troost MS. 1849, now first published & referred to *Tetracystis* (q. v.); SCHUCHERT (249) p. 219.
- Echinosphaera* descr.; DELAGE (54) p. 410, figg. *E. aurantium*; HOLM (126) p. 56, fig.: WEYSSE (284) p. 89, fig.
- Echinosphaeritesinae* defined with list of genera; DELAGE (54) p. 410.
- Edrioaster* descr.; DELAGE (54) p. 414, figg.
- Edrioasterida*, Order defined (p. 405) descr. (p. 414); DELAGE (54).
- Eucystis*; DELAGE (54) p. 412, fig.
- Glyptocystisinae* defined with list of genera; DELAGE (54) p. 411.
- Glyptosphaerites* descr.; DELAGE (54) p. 412.
- Glyptosphaeritesinae* defined with list of genera; loc. cit.
- Gomphocystis*; DELAGE (54) p. 413, fig.
- Gomphocystisinae* defined with list of genera; loc. cit.
- Halicystis*, diagnosis (p. 216), *H. elongata* (p. 217), *H. imago* (p. 216, fig.); SCHUCHERT (249).
- Hemicosmites* descr.; DELAGE (54) p. 411.
- Jaekelocystis* diagnosis (p. 222), *J. avellana* n. sp., Manlius formation, Keyser, W. Va. (p. 226 & fig., pl. xxxvii), *J. hartleyi*, descr. (p. 224 & fig., pl. xxxvii), *J. papillatus* n. sp., Manlius formation, Keyser W. Va. (p. 225, pl. xxxvii); SCHUCHERT (249).
- Lepadocrinus*, spelling *Lepocrinites* adopted, diagnosis (p. 213), *L. ? angelini* (p. 214), *L. gebhardi*, anal area (p. 215), *L. manlius* n. sp., Manlius formation, Keyser, W. Va. (p. 214 & fig., pl. xxxvii, xxxix); SCHUCHERT (249).
- Lepidodiscus*; DELAGE (54) p. 415, fig. *L. pileus*, anat.; SPENCER (264).
- Lepocrinites*, vide *Lepadocrinus*.
- Macrocystella* descr.; DELAGE (54) p. 410.
- Macrocystellinae* defined with list of genera; loc. cit.
- Malocystis*; DELAGE (54) p. 408. *M. murchisoni*; AMI (8) p. 140.
- Malocystisinae* defined with list of genera; DELAGE (54) p. 408.
- Mesocystis* descr.; DELAGE (54) p. 413, figg.
- Mesocystisinae* defined with list of genera; loc. cit.
- Mitrocystis* descr.; DELAGE (54) p. 407, figg.
- Palaeocystis tenuiradiatus*; AMI (8) p. 140.
- Placocystis* descr.; DELAGE (54) p. 407.
- Pleurocystis*; DELAGE (54) p. 411, figg.
- Proteroblastus*; DELAGE (54) p. 413, fig.
- Protocrinus*; DELAGE (54) p. 413, fig.
- Pseudocrinus*, diagnosis (p. 226), *P. abnormalis* n. sp., Manlius formation, Keyser, W. Va., "a monstrosity" (p. 231 & fig., pl. xxxv), *P. clarki*,

- descr. (p. 233, pls. xxxvi, xxxix), *P. claypolei* **n. sp.**, Manlius formation, Clark's Mills, New Bloomfield, Pa. (p. 232, pl. xxxvii), *P. elongatus* **n. sp.**, Manlius formation, Martin's Mt., Bedford co., Pa. (p. 235 & fig., pl. xxxv), *P. gordonii*, descr. (p. 229 & fig., pls. xxxvi, xxxix), *P. perdewi*, descr., growth-stages (p. 236 & fig., pls. xxxvi, xxxix), *P. stellatus*, descr. (p. 232, pls. xxxv, xxxix), *P. subquadratus* **n. sp.**, Manlius formation, near Cumberland, Md. (p. 234, pl. xxxv); SCHUCHERT (249).
- Rhombiferida* Order defined (p. 405) descr. with Famm. *Echinosphaerites*-, *Macrocyttell*-, *Glyptocystis*-, *Caryocrinus*-, *Cryptocrinus*-inae (p. 408); DELAGE (54).
- Sphaerocystis*, diagnosis (p. 248), *S. bloomfieldensis* **n. sp.**, Manlius formation, New Bloomfield, Pa. (p. 251), *S. globularis* descr. with **n. var. ovalis** (p. 252 & fig., pl. xxxviii), *S. multifasciatus* descr. (p. 250 & figg., pls. xxxviii, xxxix); SCHUCHERT (249).
- Sphaeronis* descr.; DELAGE (54) p. 412, figg. *S. pomum*; HOLM (126) p. 47, figg.
- Sphaeronitesinae* defined with list of genera; DELAGE (54) p. 412.
- Staurocystinae*, vide *Trimerocystis*.
- Staurocystis*, distinguished from *Pseudocr.* & *Lepadocr.*; SCHUCHERT (249) p. 240.
- Steganoblastus*; DELAGE (54) p. 416, fig.
- Stribalocystis*? *elongatus*, "almost certainly not *Stribalocystis*," *S. missouriensis*, descr.; ROWLEY (236) p. 273, pl. xvi.
- Stromatocystis*; DELAGE (54) p. 415, fig.
- Tetracystis* **n. g.** of *Apiocystinae* (p. 217) with genotype *T. chrysalis* **n. sp.**, Manlius formation, Keyser, W. Va. (p. 218 & fig., pl. xxxiv, xl), *T. fenestratus* (Troost sub *Echinoencr.*) now first published & figd. (p. 219 & fig., pl. xxxiv); SCHUCHERT (249).
- Trimerocystis* **n. g.** of *Staurocystinae* (p. 237), with genotype *T. peculiaris* **n. sp.** (p. 239 & fig., pl. xxxv), Manlius formation, Keyser, W. Va.; SCHUCHERT (249).

(H.) +BLASTOIDEA.

- Blastoidia* classified A. *Regulares* with Famm. *Codaster*-, *Pentremites*-, *Troostocrinus*-, *Granatoblastus*-inae, B. *Irregulares*; DELAGE (54) p. 400. Castigation of HAMBACH (126) Zool. Rec. 1903; ROWLEY in GREENE (105) p. 192-197.
- Acentrotremites*; DELAGE (54) p. 401, fig.
- Codaster* descr.; op. cit. p. 400, figg. *C. cf. canadensis*; GRABAU (102A) p. 194. *C. pyramidatus*; CLARKE & LUTHER (40) p. 43.
- Codasterinae* defined with list of genera; DELAGE (54) p. 400.
- Cryptoschisma*; DELAGE (54) p. 400, fig.
- Eleutheroocrinus* descr.; DELAGE (54) p. 402, figg. *E. whitfieldi*; CLARKE & LUTHER (40) p. 52.
- Granatoblastusinae* defined with list of genera [the generic name *Granatoblastus* being rejected, this Fam. name cannot possibly stand]; DELAGE (54) p. 401.
- Granatocrinus* sp.; WEYSSE (284) p. 89, fig.
- Metablastus*, vide *Tricoelocrinus*.
- Nucleocrinus* descr.; DELAGE (54) p. 401, figg. *N. angularis*, abnormal (p. 190, pl. lvii), *N. imitator* (p. 191, pl. lvii); ROWLEY in GREENE (105). *N. lucina*; op. cit. p. 192, pl. lvii; CLARKE & LUTHER (40) p. 46, 49, 52, 55.

Orbitremites ; DELAGE (54) p. 401, fig.

Orophocrinus ; DELAGE (54) p. 400, fig.

Pentremites ; loc. cit. figg. *P. koninckanus* ; UDDEN (272) p. 380, 390 : abnormal ; ROWLEY in GREENE (105) p. 190, pl. lvii. *P. leda* ; CLARKE & LUTHER (40) p. 52 : dwarf ; LOOMIS (161) p. 907, pl. i.

Pentremitesinae defined ; DELAGE (54) p. 400.

Phaenoschisma ; DELAGE (54) p. 400, figg.

Tricoelocrinus bipyramidalis, incl. *T. wortheni*, and not to be distinguished as *Metablastus* (p. 189, pl. lvii), *T. meeki* is young of *T. woodmani*, *T. obliquatus* is syn. of *T. woodmani*, *T. varsouviensis* is young of another sp. (p. 189), *T. woodmani*? (p. 189, pl. lvii) ; ROWLEY in GREENE (105).

Troostocrinus descr. ; DELAGE (54) p. 400, fig. *T.?* *dubius* descr. ; ROWLEY (236) p. 274, pl. xvi. *T. nitidulus* is young of a *Tricoelocrinus* ; ROWLEY in GREENE (105) p. 189.

Troostocrinusinae defined with list of genera ; DELAGE (54) p. 400.

Zygocrinus ; DELAGE (54) p. 402, fig.

(K.) INCERTAE SEDIS.

List of doubtful or imaginary forms ; DELAGE (54) p. 416.

+*Paropsonema cryptophya* ; CLARKE & LUTHER (40) p. 63.



XV. VERMES.

BY

ALICE L. EMBLETON, B.Sc., F.L.S.

CONTENTS.

| | Page | | Page |
|---|------|---|------|
| INTRODUCTION | 2 | Cestoda | 45 |
| I. TITLES | 4 | General Biology | 45 |
| II. SUBJECT-INDEX. | | Distribution | 45 |
| VERMES (general subject) | 28 | Systematic | 45 |
| ANNELIDA | | Trematoda | 47 |
| Gephyrea | 28 | General Biology | 48 |
| General Biology | 28 | Distribution | 48 |
| Distribution | 28 | Systematic | 48 |
| Systematic | 29 | NEMATHELMINTHES | |
| Polychæta (incl. <i>Archian-</i> | | Nematoda (incl. <i>Gordiaceæ</i>) | 50 |
| <i>nelida & Myzostomida</i>) | 29 | General Biology | 50 |
| General Biology | 30 | Distribution | 51 |
| Distribution | 30 | Systematic | 51 |
| Systematic | 31 | Acanthocephala | 54 |
| Oligochaeta | 36 | General Biology | 54 |
| General Biology | 37 | Distribution | 54 |
| Distribution | 37 | Systematic | 55 |
| Systematic | 37 | Chætognatha | 55 |
| Hirudinea | 39 | General Biology | 55 |
| General Biology | 39 | Distribution | 55 |
| Distribution | 40 | Systematic | 55 |
| Systematic | 40 | ROTIFERA | 55 |
| PLATYHELMINTHES | | General Biology | 55 |
| Nemertina | 41 | Distribution | 55 |
| General Biology | 41 | Systematic | 56 |
| Distribution | 41 | GASTROTRICHA | 56 |
| Systematic | 41 | MESOZOA | 57 |
| Turbellaria | 41 | HEMICHORDA (incl. <i>Phoronis</i>) | 57 |
| General Biology | 41 | General Biology | 57 |
| Distribution | 42 | Distribution | 57 |
| Systematic | 42 | Systematic | 57 |

INTRODUCTION.

THE total number of titles for the year 1904 is about 480. Some of them were not published technically during that year, several foreign publications, though of an earlier date, having only reached this country in 1904. Some of the works here recorded have only an incidental interest for workers in *Vermes*; but many of the papers are important, and mark a genuine advance in the literature of the subject. A monograph on *Oligochæta* by DITLEVSEN (126) is worthy of mention, and also one by EHLERS (130) on the Annelids of New Zealand, while FAUVEL (137) reports on the *Polychæta* from Senegal. LUTHER'S (284) monograph on the *Eumesostomidae* contains much interesting work, and BURGER (61) in his monograph of *Nemertina* gives a very useful classification.

Faunistic studies are numerous and valuable this year. One of the most important contributions is by IKEDA (207) who describes the *Gephyrea* of Japan, many of which are new to science. COGNETTI (92-99) has several papers on *Lumbricidae* from various parts of the world, including many new species. The collections at the Museums of St Petersburg and of Colombo have been described by LINSTOW (267, 268, 260-266) who has written other papers on Helminthology this year. A faunal study of the marine *Turbellaria* from European coasts is published by GRAFF (170), while JOHNSON (220) writes on the fresh-water Nereids from the Pacific coast and Hawaii. Several additions to the Turbellarian Fauna of Russia (Kharkow and Poltava) have been made by MARKOW (293). The third part of SOULIER'S (426) revision of the Annelids from the region of Cete has appeared. MELL (303, 304) discusses the land Planarians from North East Africa and Madagascar, while MICHAELSEN (307) deals with the *Oligochæta* of Ceylon. Passing to the Bermudas, we find important additions made by VERRILL (459-461) to the literature of Turbellarians, *Nemertinae* and Annelids, with revisions of some New England genera and species. From MOORE (313, 314) we have several faunistic papers on *Polychæta* from North America, and HÉRUBEL (194, 195) gives accounts of *Priapulidae*, especially those from the west coast of Scandinavia. GIARD'S (159-162) papers are on *Gastrotricha* from Pas-de-Calais, and BRETSCHER'S (51, 52) are on the *Enchytraeidae* of Switzerland. It is of interest to add that MRÁZEK (325) records a new polypharyngeal Planarian from Montenegro.

Many important observations have been made this year in anatomy and histology, some of them dealing with matters of wider, biological significance. GOLDSCHMIDT'S (167) paper on the histology and cytology of *Nematoda* may be mentioned under this head, and HEIN'S (189) useful addition to histology in his description of the epithelium of *Trematoda*. Two papers by FUHRMANN (150, 151) deal with the anatomy of Trematodes, and RITTER & DAVIS (375) have studied the geology, morphology, and the immature forms of some *Enteropneusta* from western North America. SPENGLER (428-433) has again given us much valuable work on the *Enteropneusta* and BERGENDAL (24) has finished his third contribution on the anatomy and histology of *Carinoma oudemans*, with some systematic notes on *Nemertina* in general. The *Paramphistomidae* form the subject of two memoirs by FISCHÖDER (141, 142), and ASHWORTH'S (14) account of the lugworm is certainly worthy of mention. OSBORN'S (341) observations are on the habits and structure of *Cotylaspis insignis*, from Lake Chautauqua. LIVANOW (270) has investigated the morphology of *Hirudinea* and LÜHE (282, 283) describes many species of *Echinorhynchus*. Five papers by CAMERANO (64-68) go to swell the literature of *Oligochæta*, and a new genus has been added to *Hemichorda* by CAULLERY

& MESNIL (76). As regards the structure of special organs BRASIL (44) writes on the digestive apparatus of *Polygordius*, and SPIESS (434, 435) on that of *Aulostoma gula* and *Hæmopsis sanguisuga*, while JORDAN (222) gives an account of the same organs, from rather a physiological standpoint, in *Aphrodite aculeata*. Important observations have been made by ROSSETER (382) on the genital organs of *Tænia sinuosa* and JAGERSKIÖLD (214) on those of a Distomum. GUNGL (176) carefully describes the blood vessels in the *Lumbricidæ*, while ARNESEN (13) writes a somewhat similar paper on those in the *Rhynchobdellidæ*. SCHEPOTIEFF (398) has worked at the structure of the "pockets" of setæ in some *Polychætæ* and also (399) on the organization of *Rhabdopleura*. SCHNEIDER'S (402) notes on the sense organs of *Eunice viridis* are interesting, and, as usual, the so-called "body-cavity urns" in *Sipunculus* receive a good deal of attention; see KUNSTLER & GRUDEL (238), LADREY (239, 240). A phylogenetic discussion of considerable importance comes from HUBRECHT (203, 204) in which he deals with the relationships of Annelids and Chordates, of Platyhelminths and Ctenophores. Some suggestive ideas are put forward on the subject of asymmetry in certain lower organisms, and its biological significance, by JENNINGS (219) who draws many of his observations from Rotifers.

Physiology is represented by very few memoirs, but it is to be noted that BOHN (30-34) is still working at movement in Annelids. ISSEL (208) refers to Rotifers being found endoparasitic in *Enchytræidæ*, and DÉVÉ (121-123) records the occurrence of *Echinococcus* in rather unusual circumstances. The origin of pearls is a rather attractive subject, and there are papers on it this year by HERDMAN (193), GIARD (157) and BOUTAN (38).

One of the most valuable papers this year is by NELSON (329) on the early development of *Dinophilus*. There are many additions to Embryological literature. WOLTERECK (473) describes the development of *Polygordius* and VAN BENEDEN (456) that of *Phoronis*. MATTIESSEN'S (299) work has been on the embryology of fresh-water Dendroceles, and MONTGOMERY (310) writes on the structure and development of the larva of *Paragordius*. KATHARINER'S (226) attention has been given to the development of *Gyrodactylus elegans*, and LONGCHAMPS (274) describes the post-embryonal development of *Phoronis*, with notes on its affinities. TORREY'S (447) is an exhaustive treatise on the embryology of *Thalassema* and GEROULD (155, 156) has two papers on the development of *Sipunculus*. Experimentalists will be interested in BULLOT'S (58, 59) work on artificial parthenogenesis and regular segmentation in *Ophelia*, and also in YATSU'S (479) work on the development of egg-fragments in *Cerebratulus*. The spermatogenesis of *Ascaris megalocephala* has been followed in detail by TRETJAKOFF (449, 450).

Again this year there are numerous papers on regeneration and regulation. See CHILD (84), SCHULTZ (408, 409), ZELENY (480), MORGAN (319-323), NUSBAUM (337, 338), HARPER (186), ORLANDI (340). MORGAN writes also on organic polarity and axial heteromorphosis (322).

A good deal of attention is being paid to Filarial disease, see BRUMPT (55-57), BOYCOTT (42), WELLMANN (467). As regards ankylostomiasis in the Cornish miners, see HALDANE (180-182); and for sleeping sickness CLARKE (85-89).

I. TITLES*.

1. [ANON.] Marine Biological Association. Plymouth marine invertebrate fauna, being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. *J. Mar. Biol. Ass.* vii, 2, pp. 155-298, 1 chart. [*Vermes*, pp. 211-233.]
2. [ANON.] Stem eelworm (*Tylenchus devastatrix*). *J. Board Agric.* London xi, 4, p. 219.
Destroying oats in Scotland. Remedies.
3. [ANON.] Husk or hoose in calves. *Op. cit.* xi, 10, p. 618. (*Strongylus micrurus*.)
4. [ANON.] Peregrine Earthworms at Peradeniya. *Spolia Zeylan.* i, 4, pp. 113, 114.
Editorial notes. Review of Dr Michaelsen's report on the *Oligochaeta* of Ceylon.—Cf. MICHAELSEN (307).
5. [ANON.] Classification. *Natural. Canad.* xxxi, pp. 210-218. [*Vermes*, pp. 210-214, 6 figg.]
6. ALESSANDRINI, G. Brevi osservazioni sullo sviluppo e ciclo evolutivo dell' *Anchylostoma (Uncinaria) duodenale* (Dub.). *Boll. Soc. zool. Ital.* (3) v, pp. 147-166, 3 figg.
7. ALLEN, E. J. The anatomy of *Pæcilocheetus* Claparède. *Quart. J. Micr. Sci.* xlviii, 1904, pp. 79-151, pls. vii-xii.
8. —. *Pallasia murata* n. sp.; a new British Sabellarian. *J. Mar. Biol. Ass.* vii, 2, pp. 299-304, pl. x.
9. *ALZONA, C. Sulla fauna delle caverne del Bolognese. *Rendic. iv. Con. Unione Zool. Ital. Monit. Zool. ital.* xiv, No. 12, pp. 328-330.
10. ANNANDALE, N. The *Gordiidae* in folk-lore. *Nature* lxi, p. 393.
11. APÁTHY, ST. V. Die drei verschiedenen Formen von Lichtzellen bei Hirudineen. *Verh. Congr. Zool.* 1902, pp. 707-728. [Cf. *Zool. Rec.* 1902, VERMES (6).]
Review by Dr SÁNDOR GORKA, *Allatt. Kozl. Magyar Tars.* 1904, iii, 1, pp. 76-82, 6 figg.
12. ARKHANGELSKII, A. D. Paleotzenovliza otlozheniya Saratovskagho Povolzhya, i ikhzh fauna. *Mater. gheol. Rossii* xxii, 1, p. 61.
13. ARNESEN, EMILY. Ueber den feineren Bau der Blutgefässe der Rhynchobdelliden mit besonderer Berücksichtigung des Rückengefässes und der Klappen. *Jena. Zeitschr.* xxxviii, 4, pp. 771-806, pls. xxvi-xxviii.
14. ASHWORTH, J. H. Memoir on *Arenicola*. The lugworm. *P. Liverp. biol. Soc.* xviii, pp. 209-326, 7 pls.
15. AUDEN, F. T. *Bilharzia hæmatobia*. *Lancet* 1904, i, p. 1235.
16. AZOULAY, L. Les neurofibrilles dans les cellules nerveuses situées autour du tube digestif de la sangsue. *C.R. Soc. Biol.* lvi, pp. 465-468, 2 figg.
17. BANCROFT, T. L. Some further observations on the life-history of *Filaria immitis* Leidy. *Brit. Med. J.* 1904, i, pp. 822 & 823, 2 figg.
18. BARBAGALLO, P. & DRAGO, U. Primo contributo allo studio della fauna elmintologica dei pesci della Sicilia orientale. *Atti Acc. Gioen.* lxxxi, 4, vol. xvii, No. 3, 32 pp. [Cf. *Zool. Rec.* 1903, VERMES (16).]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

BARRETT, J. T. [See SMITH & BARRETT (422).]

19. BASTIAN, H. C. The mode of infection by Nematoids. *Lancet* 1904, i, p. 833.
20. —. Note on the probable mode of infection by the so-called *Filaria perstans*, and on the probability that this organism really belongs to the genus *Tylenchus* (Bastian). *T. c.* pp. 286 & 287, 1 fig.
21. —. The anatomical characters of the so-called *Filaria perstans* and on the mode of infection thereby. *T. c.* pp. 643–645.
22. BEAUCHAMP, P. DE. Sur un nouveau Rotifère des environs de Paris et sur le genre *Drilophaga* Vejdovsky. *Bull. Soc. zool. France* xxix, 7, pp. 157–160, 3 figg.
23. BEEDE, J. W. & ROGERS, A. J. Coal measure faunal studies. III. Lower coal measures. *Kansas Univ. Bull.* ii, 15, pp. 459–473.
24. BERGENDAL, D. Studien über Nemertinen. III. Beobachtungen über den Bau von *Carinoma oudemans* nebst Beiträgen zur Systematik der Nemertinen. *Acta Univ. Lund.* xxxix, 86 pp., 2 pls., 25 text-figg.
25. BILLET, A. Culture d'un Trypanosome de la grenouille chez une Hirudinée; relation ontogénique possible de ce Trypanosome avec une Hémogrégarine. *C.R. Ac. Sci.* cxxxix, 2, pp. 574–576.
26. BILLINGHURST, W. B. The chief forms of *Entozoa* which affect man. *Tr. W. Kent Nat. Hist. Soc.* 1903–1904, pp. 32 & 33.
27. BLANCHARD, R. *Tanqua* n. g. remplaçant *Ctenocephalus* von Linstow. *Arch. parasit.* viii, p. 478.
28. —. Sur un travail de M. le Dr J. Guiart intitulé: Rôle du Trichocéphale dans l'étiologie de la fièvre typhoïde. *Op. cit.* ix, pp. 122–128.
29. —. Candiru et Bilharzie. *Op. cit.* viii, p. 153, 1 fig.
30. BOHN, G. Mouvements de manège en rapport avec les mouvements de la marée. *C.R. Soc. Biol.* lvii, pp. 297 & 298, 3 figg.
31. —. Les *Convoluta roscoffensis* et la théorie des causes actuelles. *Bull. Mus. Paris* 1903, pp. 352–364, 4 figg.
32. —. À propos d'un mémoire récent sur les *Convoluta*. *T. c.* pp. 397–399.
33. —. Sur les mouvements respiratoires musculaires des Annélides marins. *C.R. Soc. Biol.* lvi, pp. 185 & 186.
34. —. Les mouvements hélicoïdaux des Annélides. *C.R. Soc. Biol.* lvi, pp. 241–243.
35. BOLTON, H. The palæontology of the Lancashire coal measures. *Tr. Manchester Geol. Soc.* xxviii, I, pp. 378–420; II, pp. 578–650; III, pp. 668–689.
36. BONARELLI, G. Appunti sulla costituzione geologica dell' isola di Creta. *Atti Acc. Lincei* (5) iii, pp. 518–548, 1 pl., 4 figg. [*Vermes*, p. 536.]
- BONNET, A. [See CONTE & BONNET (103).]
37. BORTOLOTTI, C. Determinazione di alcuni lombricidi raccolti nei dintorni di Bologna con un cenno sulla classificazione degli Oligocheti terricoli. *Boll. Naturalista* xxiv, pp. 16–18.
38. BOUTAN, L. Les perles fines leur origine réelle. *Arch. Zool. exp. Hist. Nat.* (4) ii, xxxii, pp. 47–90, pl. iii.

39. BOVARD, JOHN F. The distribution of the sense organs in *Microscolex elegans*. Univ. Calif. publ. Zool. i, pp. 269-286, pls. xxiv & xxv.
40. *BOVERI, T. Ergebnisse über die Konstitution der chromatischen Substanz des Zellkerns. Jena, 1904, 130 pp., 75 figg.
Review by FICK, Zool. Zentrbl. xi, pp. 97-99.
41. —. Protoplasmadifferenzierung als auslösender Faktor für Kernverschiedenheit. SB. Ges. Würzburg 1904, pp. 1-5.
42. BOYCOTT, A. E. The diagnosis of *Ankylostoma* infection. Rep. Sec. Home Dep. 1904, 12 pp.
43. BRANNER, J. C. The stone reefs of Brazil, their geological and geographical relations, with a chapter on the coral reefs. Bull. Mus. Harvard xlv, 285 pp., 97 pls. [Mentions some worms.]
44. *BRASIL, L. Contribution à la connaissance de l'appareil digestif des Annélides Polychètes. L'épithélium intestinal de la Pectinaire. (Thèse.) Paris, 1904, 8vo.
Review by A. PRENANT, Rev. gen. Sci. xvi, pp. 286 & 287. The work is probably the same as the next.
45. —. Contribution à la connaissance de l'appareil digestif des Annélides polychètes; l'épithélium intestinal de la pectinaire. Arch. Zool. exp. (4) ii, xxxii, pp. 91-255.
46. —. Sur une Coccidie nouvelle, parasite d'un Cirratulien. C.R. Ac. Sci. cxxxix, pp. 645 & 646.
47. BRAULT, A. & LOEPER, M. Le Glycogène dans le développement de certains Parasites (Cestodes et Nématodes). J. Physiol. Path. vi, pp. 503-512, pl. iv.
48. BRAUN, M. [Review of LOOSS' paper in Zool. Jahrb. Syst. xvi, 1902. "Ueber neue und bekannte Trematoden aus Seeschildkröten; nebst Erörterungen zur Systematik und Nomenclatur."] Zool. Zentrbl. xi, pp. 25-32.
49. BREHM, V. & ZEDERBAUER, E. Beiträge zur Planktonuntersuchung alpiner Seen. Verh. Ges. Wien 1904, pp. 48-58. [Rotifera.]
Review by ZSCHOKKE, Zool. Zentrbl. xi, pp. 168 & 169.
50. BRESSLAU, E. Beiträge zur Entwicklungsgeschichte der Turbellarien. I. Die Entwicklung der Rhabdocölen und Alloiocölen. Zeitschr. wiss. Zool. lxxvi, pp. 213-332, pls. xiv-xx.
Review, Zool. Zentrbl. xi, pp. 354-367.
51. BRETSCHER, K. Beobachtungen über die Oligochaeten der Schweiz. VIII. Folge. Rev. Suisse Zool. xii, pp. 259-267.
52. —. Die xerophilen Enchytraeiden der Schweiz. Biol. Centrbl. xxiv, pp. 501-513.
53. BRIOT, A. Nouvelle espèce de Trématode, *Microcotyle draconis* n. sp. C.R. Soc. Biol. lvi, p. 126.
54. BROWNE, E. T. & VALLENTIN, R. On the marine fauna of the Isles of Scilly.
I. The pelagic fauna. E. T. Browne, pp. 120-128.
II. The shore fauna. R. Vallentin, pp. 128-132.
J. Inst. Cornwall xvi, 1.
55. BRUMPT, E. Contribution à l'étude de l'évolution des Hémogrégarines et les Trypanosomes. (Note préliminaire.) C.R. Soc. Biol. lvii, pp. 165-167.
56. —. Les filarises humaines en Afrique. Op. cit. lvi, pp. 758-760.
57. —. La *Filaria loa* Guyot, est la forme adulte de la Microfilarie désignée sous le nom de *Filaria diurna* Manson. T. c. pp. 630-632.

58. BULLOT, G. Artificial parthenogenesis and regular segmentation in an Annelid (*Ophelia*). Arch. Entwickmech. xviii, pp. 161-170, 13 figg.
59. —. Artificial parthenogenesis and regular segmentation in an Annelid (*Ophelia*). Univ. Calif. Publ. Physiol. i, 19, pp. 165-174, 8 figg. [Reprint of preceding.]
60. BURCKHARDT, R. Das erste Buch der aristotelischen Tiergeschichte. Zool. Ann. i, 1, pp. 1-28.
61. BURGER, O. *Nemertini*. Tierreich. xx, 1904, 151 pp., 15 figg.
BUSCH, KATHARINE. [See MOORE & BUSCH (315).]
62. DU BUYSSON, H. *Cittotœnia denticulata* Rud. Rev. Sci. Bourbonnais xvii, p. 130.
63. CAJAL, S. RAMÓN Y. Sobre la existencia de un aparato tubuliforme en el protoplasma de las células nerviosas y epiteliales de la lombriz de tierra. Bol. Soc. espan. iii, pp. 395-398, 2 figg.
64. CAMERANO, L. Nuove specie di *Chordodes* del Guatemala. Ann. Mus. Genova (3) i, pp. 93 & 94.
65. —. Ricerche intorno all variazione del *Phyllodactylus europæus* Gené. Boll. Mus. Torino xix, No. 471, 28 pp.
66. —. Della indentità specifica del *Parachordodes wolterstorffii* e del *Parachordodes pleskei*. T. c. No. 470, 4 pp.
67. —. Osservazioni intorno al *Chordodes skoricovi* Camer. T. c. No. 469, 3 pp.
68. —. Nuova specie di Gordio dell' Alta Birmania. T. c. No. 468.
69. *CARAGEAN & MAROTEL. Une nouvelle Filaire parasite du sang. Rev. gen. Med. vet. 1903, viii, pp. 447-454.
Review by LINSTOW, Zool. Zentrbl. xi, p. 32.
70. CARAZZI, D. Ricerche embriologiche e citologiche sull' uovo di *Myzostoma glabrum* Leuckart. Monit. Zool. ital. xv, No. 2, pp. 62-78, pl. iv, No. 3, pp. 87-100.
71. CARL, —. Der tierischen Parasiten der Schlachttiere des Karlsruher Schlachthauses. Mt. Bad. Zool. Ver. xvii, pp. 111-120.
72. *CASELLA, A. Eustrongilo gigante (*Strongylus gigas*) trovato nel rene di un cane: nota clinica ed anatomopatologica. Parma. Zerbini 1903, 7 pp.
Title in Monit. Zool. ital. xv, p. 210.
73. CASTELLANI, A. & WILLEY, A. Observations on the Hæmatozoa of Vertebrates in Ceylon. Spolia Zeylan. ii, 6, pp. 78-93, 1 pl.
74. CATTO, J. A new species of *Bilharzia*. Brit. Med. J. 1904, ii, pp. 1411, 1425.
75. CATTO, JOHN. A new Trematode. Brit. Med. J. 1904, ii, p. 663. [Species unknown.]
76. CAULLERY, M. & MESNIL, F. Contribution à l'étude des Enteropneustes, *Protobalanus* n. g. *koehleri* Caull. & Mesn. Zool. Jahrb. Anat. xx, pp. 227-256, pls. xii & xiii.
77. — & —. Sur les affinités des Actinomyxidies. C.R. Soc. Biol. lvi, pp. 411-413.
78. — & —. Sur un type nouveau (*Sphæractinomyxon stolci* n. g., n. sp.) d'Actinomyxidies et son développement. T. c. pp. 408-410.

79. [CAULLERY, M. & MESNIL, F.] Sur un organisme nouveau (*Pelmatosphæra polycirri* n. g., n. sp.) parasite d'une Annélide (*Polycirrus hæmatodes* Clap.) et voisin des Orthonectides. T. c. pp. 92-95, 4 figg.
80. — & —. Sur un organisme nouveau (*Pelmatosphæra polycirri*, n. g., n. sp.) parasite d'une Annélide (*Polycirrus hæmatodes* Clap.) et voisin des Orthonectides. C.R. Ac. Sci. cxxxviii, pp. 217-219.
81. CHALMERS, A. J. *Ascaris lumbricoides* in the liver and pancreas of man. [Ceylon.] Spolia Zeylan. ii, 5, pp. 47-49, 2 figg.
82. *CHANCEY, I. The plankton of Winona Lake. P. Indiana Ac. 1902, pp. 120-133. [*Rotifera*.]
Review by ZSCHOKKE, Zool. Zentrbl. xi, p. 169.
83. CHILD, C. M. Amitosis in *Moniezia*. Anat. Anz. xxv, pp. 545-558, 11 figg.
84. —. Form-regulation in *Cœlentera* and *Turbellaria*. Smithsonian Collect. xlv, pp. 134-143.
85. CLARKE, J. H. Sleeping sickness. Homeopathic World xxxviii, pp. 73-76.
86. —. *Sanguisuga*—the leech as a sight restorer. T. c. p. 286.
87. —. *Ascaris lumbricoides*. T. c. pp. 475 & 476.
88. —. Infection by Nematodes. T. c. pp. 476 & 477.
89. —. Sleeping sickness—prolonged incubation. T. c. p. 535.
90. CLARKE, J. M. Limestones of Central and Western New York interbedded with bituminous shales of the Marcellus stage, with notes on the nature and origin of their faunas. Rep. N. York Mus. lv, pp. 115-138. [Lists of fossils, p. 133.]
CLUTTON, H. H. [See CULLINGWORTH & CLUTTON (107).]
92. COGNETTI, L. Descrizione di un nuovo Lombrico Cavernicolo. Boll. Mus. Torino xix, No. 466, 4 pp.
93. —. Oligocheti di Costa Rica. T. c. No. 462, pp. 1-10, 1 pl.
94. —. Res Italicæ. xi. Nota su alcuni *Lombricidi* di caverne italiane. T. c. No. 459, pp. 1-4.
95. —. Lombricidi dei Pirenei. T. c. No. 476, 14 pp.
96. —. xxvi. Oligocheti dell' Ecuador. T. c. No. 474, 18 pp.
97. —. Nuovi Oligocheti di Costa Rica. T. c. No. 478, 4 pp.
98. —. Diagnosi di un nuovo lombrico del Chile. T. c. No. 481, 2 pp.
99. —. Contributo alla conoscenza degli Oligocheti cavernicoli. Atti Soc. Modena (4) v, 36, pp. 3-10. [2 n. spp.]
100. COHN, L. Zur Anatomie der *Amphilina foliacea* (Rud.). Zeitschr. wiss. Zool. lxxvi, pp. 367-387, pl. xxiii.
101. —. Helminthologische Mitteilungen II. Arch. Naturg. 1904, i, pp. 229-252, pl. xi.
102. COLLIN, A. Bericht über die Rotatorien- und Gastrotrichen-Literatur im Jahre 1896. Arch. Naturg. 1897, ii, 3 [published in 1904], pp. 221-239.
103. CONTE, A. & BONNET, A. Sur un Nématode nouveau, *Angiostoma heliciis* n. sp. parasite de l'appareil génital d'*Helix aspersa* (Müll.). Ann. Soc. Linn. Lyon l, pp. 63-68, 11 text-figg. [See Zool. Rec. xl, (96).]

104. CONYNGHAM, H. F. A new Trematode of man (*Amphistomum watsoni*). Lancet 1904, ii, p. 464. Brit. Med. J. 1904, ii, p. 663.
105. COSENTINO, A. Sulla Tossicità degli Ascaridi. Lo Speriment. lviii, pp. 530-534.
106. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35-85.
107. CULLINGWORTH, C. J. & CLUTTON, H. H. Hydatids in various parts of the abdomen. Lancet 1904, i, p. 1657.
108. CURTIS, W. C. Demonstrations of preparations made during a study of the life-history of the Cestode *Crossobothrium laciniatum* (Linton). Science xix, p. 218. [Title only given.]
109. DADAY, E. v. Mikroskopische süßwasserthiere aus Turkestan. Zool. Jahrb. Syst. xxi, pp. 469-554, pls. xxvii-xxx, 5 figg.
110. DAINELLI, G. La fauna eocenica di Bribir in Dalmazia. Pal. Ital. x, 1904, pp. 141-173, pls. xv-xvii.
111. —. Contributo allo studio dell' Eocene medio dei dintorni di Ostroviza in Dalmazia. Atti Acc. Lincei (5) xiii, No. 5, pp. 227-282.
DAINTREE, R. [See GREGORY & DAINTREE (173).]
112. DALEAU, —. Quelques spécimens de Linguatules parasites des sinus du Chien. Pr.-verb. Soc. Linn. Bordeaux lix, p. lxvii.
DAVIS, B. M. [See RITTER & DAVIS (375).]
113. DELGADA, J. F. N. Note sur *Scolithus dufrenoyi* Rouault. Comm. geol. Portugal v, 1903, pp. 251-253.
114. DENNANT, J. Catalogues of the described species of fossils (except *Bryozoa* and *Foraminifera*) in the Cainozoic fauna of Victoria, S. Australia and Tasmania. Rec. Geol. Surv. Victoria i, 2, pp. 89-147.
115. DESTINEZ, P. Quelques fossiles de Pair (Clavier), 1897. Ann. Soc. geol. Belgique xxiv, pp. xxxviii & xxxix.
116. —. Troisième note sur les fossiles du marbre noir de Pair, 1898. Op. cit. xxv, pp. xxxiv-xxxvi.
117. —. Quatrième note sur les fossiles du calcaire de Pair, 1899. Op. cit. xxvi, pp. lviii & lix.
118. —. Fossiles viséens de Seille et de Comblain-au-Pont. T. c. pp. cix-cxiii.
119. —. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. Op. cit. xxxi, 1, pp. 143-151.
120. —. Faune et flore des psammites du Condroz (Famennien). T. c. 3 [Vermes], p. 256.
121. DÉVÉ, F. Ensemencement intra-trachéal de sable Échinococcique. Échinococcique secondaire du poumon, d'origine bronchique. C.R. Soc. Biol. lvii, pp. 136-138.
122. —. Le chat domestique, hôte éventuel du *Tænia échinocoque*. T. c. pp. 262-264.
123. —. Prophylaxie de l'échinococcose. T. c. pp. 261 & 262.
124. DEWALQUE, G. Les fossiles du Bolderberg et les fossiles boldériens. Ann. Soc. geol. Belgique xxv, pp. 117-122, 1899.

125. DIENER, C. Himalayan Fossils. I. 5. Permian fossils of the Central Himalayas. Pal. Ind. xv, 204 pp., pls. i-x.
126. DITLEVSEN, A. Studien an Oligochæter. Zeitschr. wiss. Zool. lxxvii, pp. 398-480, pls. xvi-xviii.
DRAGO, U. [See BARBAGALLO & DRAGO (18).]
127. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf (Westerwald). Palæontogr. l, 6, pp. 229-282.
128. DYÉ, L. Les parasites des Culicides. Arch. parasit. ix, pp. 5-77. Platyhelminthes, p. 45, Nematodes, pp. 46-57, 4 figg.
129. EDEN, T. W. Primary Hydatid disease (*Echinococcus*) of the Fallopian tube. Lancet 1904, i, p. 1657.
130. EHLERS, E. Neuseeländische Anneliden. Abh. Ges. Gotting. iii, 70 pp., 9 pls., 16 n. spp.
131. ENTZ, G. Az édesvízek élete. Termes. Kozl. Magyar Tars. 1904, pp. 616-636, 9 text-figg.
132. —. Die Fauna der kontinentalen Kochsalzwässer [aus "Pótfüzetek a Természettudományi Közlönyhöz" (Ergänzungshefte zu den Naturwiss. Mt.) Budapest 1900. Heft. lv, pp. 99-119]. Math. naturw. Ber. Ungarn xix, pp. 89-124.
Lists of *Turbel.*, *Nemat.*, *Olig.*, *Rotifera*, p. 114.
133. ETHERIDGE, R. Determinations of palæozoic and mesozoic fossils. Rec. Geol. Survey Victoria i, 1, pp. 10-12.
134. FAGE, L. Sur les fonctions ergastoplasmiques des cellules néphridiales de sangsue (*Hirudo medicinalis*). C.R. Ac. Sci. cxxxviii, pp. 1450-1452.
135. FALKNER, C. & LUDWIG, A. Beiträge zur Geologie der Umgebung St Gallens. Jahrb. St. Gall. Ges. 1901-1902, pp. 475-620.
136. *FANTINI, O. Filaria labiato-papillosa nell' intestino tenue di un bove. Clin. veter. xxvi, p. 294, Milano, 1903.
Title from Monit. Zool. ital. xv, p. 82.
137. FAUVEL, P. Annélides Polychètes de la Casamance rapportées par M. Aug. Chevalier. Bull. Soc. geol. Normand. (5) v, pp. 59-105 52 figg.
12 n. spp. Title recorded in Zool. Rec. 1902, VERMES, xxxix (124).
138. —. Les prétendus otocystes des Alciopiens (Annélides Polychètes). C.R. Ass. Franc. xxxii, pp. 784-788.
Note of discussion, p. 224.
139. —. Un nouvel Oligochète des puits (*Trichodriloides intermedius* n. g. n. sp.). T. c. pp. 754-759, 2 figg.
140. —. Un nouvel Oligochète des puits (*Trichodriloides intermedius*, n. g., n. sp.). T. c. l, p. 221. See also p. 754.
141. FISCHÖDER, F. Weitere Mitteilungen über Paramphistomiden der Säugetiere. Centrbl. Bakter. xxxv, pp. 598-601.
142. —. Beschreibung dreier Paramphistomiden-Arten aus Säugethieren. Zool. Jahrb. Syst. xx, pp. 453-470, pls. xv & xvi, 3 figg.
143. FOERSTE, A. F. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4) xviii, pp. 321-342, 1 pl.
144. —. Silurian and Devonian Limestones of Tennessee and Kentucky. Bull. Geol. Soc. Amer. 1901, xi, pp. 395-444, 8 figg.

145. FOURTEAU, R. Contribution à l'étude de la faune Crétacique d'Égypte. Bull. Inst. Egypt. iv, 4, pp. 231-349.
146. FOWLER, —. Distribution of two Biscay Chætognatha, *Sagitta serratodentata* and *Krohnia hamata*. Nature lxix, p. 381.
147. FOX, H. Geological notes. II. Supplementary notes on the distribution of fossils on the north coast of Cornwall, south of the Camel. Tr. geol. Soc. Cornwall xii (9), pp. 753-759.
148. FOX-STRANGWAYS, C. The geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales liv, lv, pp. 1-112, xi pls., 12 text-figg. [List of *Serpula* spp.]
149. FUHRMANN, O. Ein getrenntgeschlechtiger Cestode. Zool. Jahrb. Syst. xx, pp. 131-150.
150. —. Neue Trematoden. Centrbl. Bakter. xxxvii, pp. 58-64, 4 figg.
151. —. Die Tetrabothrien der Säugetiere. Op. cit. xxxv, pp. 744-752, 11 figg.
FULLER, W. N. [See RAYMOND & FULLER (365).]
152. GALBRAITH, H. T. Tapeworm as a cause of chorea. Lancet 1904, i, p. 1348.
153. GARRARD, G. E. Battle royal between a water-flea and a tube Rotifer. J. Northampton Soc. xii, pp. 19 & 20.
154. GEMMILL, J. F. *Ichthyonema grayi* (Gemmill and v. Linstow). Tr. Soc. Glasgow vi (3), pp. 299-301.
GENDRE, E. [See PÉREZ & GENDRE (348, 349).]
155. GEROULD, J. H. A key to the development of *Sipunculus nudus*. Amer. Natural. xxxviii, pp. 493 & 494.
156. —. Studies on the embryology of the *Sipunculidae*. I. The embryonal development and its homologue. Mark Anniv. Vol. 1903, New York, pl. 439-452, pl. xxxii.
157. GIARD, A. Les précurseurs des idées modernes sur l'origine des perles. Feuille Natural. (4), xxxiv, pp. 45-49.
158. —. L'*Echinorhynchus hæruca* Rudolphi, parasite de la Rainette. T. c. p. 108.
159. —. Sur une faunule caractéristique des sables à Diatomées d'Ambleteuse. II. Les Gastrotriches normaux. C.R. Soc. Biol. lvi, pp. 1061-1063, 3 figg.
160. —. Sur une faunule caractéristique des sables à Diatomées d'Ambleteuse. III. Les Gastrotriches aberrants. T. c. pp. 1063-1065, 2 figg.
161. —. Sur une faunule caractéristique des sables à Diatomées d'Ambleteuse (Pas-de-Calais). Microgr. prep. xii, 3, pp. 105-109, 2 figg.
162. —. Sur une faunule caractéristique des sables à diatomées d'Ambleteuse (Pas-de-Calais). C.R. Soc. Biol. lvi, pp. 295-298. [See (161).]
163. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Belgique i, 81 pp. List of spp. p. 34.
164. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. Trav. Lab. Arcachon vii, pp. 86-161. [General discussion, chiefly on worms and *Cœlenterata*.]

165. GIRTY, G. H. The Carboniferous formations and faunas of Colorado. Prof. Papers U. S. Geol. Surv. xvi, 1903, p. 546.
166. GOLDSCHMIDT, R. Der Chromidialapparat lebhaft funktionierender Gewebezellen. Biol. Centrbl. xxiv, pp. 241-251, 4 figg.
Review, FICK, Zool. Zentrbl. xi, pp. 778 & 779.
167. ——. Der Chromidialapparat lebhaft funktionierender Gewebszellen. (Histologische Untersuchungen an Nematoden. II.) Zool. Jahrb. Anat. xxi, pp. 49-140, pls. iii-viii, 16 figg.
168. ——. Über die sogen. radiärgestreiften Ganglienzellen von *Ascaris*. Biol. Centrbl. xxiv, pp. 173-182, 2 figg.
169. GOODRICH, E. S. On the branchial vessels of *Sternaspis*. Quart. J. Micr. Sci. xlviii, pp. 1-10, pls. i & ii.
GORKA. [See SÁNDOR GORKA (394, 395).]
170. GRAFF, L. v. Marine Turbellarien Orotavas und der Küsten Europas. Zeitschr. wiss. Zool. lxxviii, 2, pp. 190-245, pls. xi-xiii.
171. GRAHAM, J. Y. A study of a parasite of the oyster (*Bucephalus cuculus* McC.). Science xix, p. 247.
172. GRAVIER, C. Sur la morphologie des Chétoptériens. C.R. Ac. Sci. cxxxix, 2, pp. 545 & 546.
173. GREGORY, A. C. & DAINTREE, R. Fossils from the Carbo-permian of Queensland and Western Australia. P. Soc. Victoria xvi, 2, pp. 313-335.
GRUVEL, A. [See KUNSTLER & GRUVEL (238).]
174. GUCCINI, L. Sul contenuto gastro-enterico dei pesci del Ticino. Rend. Ist. Lombardo xxxvii, 3, pp. 194-201.
175. GUIART, J. Programme des démonstrations pratiques de parasitologie. Arch. parasit. vii, p. 158-164.
176. GUNGL, O. Anatomie und Histologie der Lumbriciden blutgefäße. Arb. Inst. Wien xv, 2, pp. 155-183, 1 pl.
177. GUPPY, R. J. L. Suggestions as to siliceous and calcareous organisms. P. Inst. Trinidad iii, 1899, pp. 167 & 168.
178. GÜRICH, G. Das Devon von Deknik bei Krakau. Beitr. Pal. Oesterr.-Ung. xv, pp. 127-164, pls. xiv & xv.
179. HACKER, V. Bastardirung und Geschlechtszellenbildung. Zool. Jahrb. Suppl. vii, pp. 161-256, pls. xii & xiii.
180. HALDANE, J. S. Miners' anæmia, or ankylostomiasis. Tr. Inst. Mining Eng. 1903-1904, 6 pp., 8 figg.
181. ——. Ankylostomiasis in Westphalian Collieries. Rep. Sec. Home Dep. 1903, 13 pp.
182. — & THOMAS, R. A. On the health of Cornish miners. Op. cit. 1904, 104 pp.
183. HALL, W. Höhere tierische Parasiten. Centrbl. Bakter. xxxv, pp. 145-156.
184. HALL, M. A. & PRITCHARD, G. B. The Geology of the Barwon about Inverleigh. P. Soc. Victoria xvi, 2, pp. 292-305.
185. HANEL, ELISE. Ein Beitrag zur "Psychologie" der Regenwürmer. Zeitschr. allg. Physiol. iv, pp. 244-258, 6 figg.

186. HARPER, E. H. Notes on regulation in *Stylaria lacustris*. Biol. Bull. vi, pp. 173-190, 16 figg.
187. HARTLAUB, C. Bericht über eine zoologische Studienreise nach Frankreich, Grossbritannien und Norwegen. Wiss. Meeresuntersuch. Helgoland v, 2, pp. 97-106, 3 figg.
188. HAYDEN, H. H. Memoirs of the Geological Survey of India. Mem. geol. Surv. India xxxvi, 1, pp. 1-129.
189. HEIN, W. Zur Epithelfrage der Trematoden. Zeitschr. wiss. Zool. lxxvii, pp. 546-585, pls. xxiii-xxv.
190. —. Beiträge zur Kenntniss von *Amphilina foliacea*. Op. cit. lxxvi, pp. 400-438, pls. xxv & xxvi.
191. HEMINGWAY, E. E. The brain and nerve cord of *Placobdella pediculata*. Science xix, p. 218.
192. HERDMAN, W. A. On a phosphorescence phenomenon in the Indian Ocean. Rep. Brit. Ass. 1903-1904, pp. 695 & 696.
193. —. Note on Pearl-formation in the Ceylon pearl oyster. T. c. p. 695.
194. HÉRUBEL, M. A. Sur quelques points de la morphologie comparée des Priapulides. Bull. Soc. zool. France xxix, 5, pp. 126-129.
195. —. Sur les Priapulides des cotes occidentales de la Scandinavie. T. c. 5, pp. 100-109, 2 figg.
196. HIND, W. On the homotaxial equivalents of the Lower Culm of North Devonshire. Geol. Mag. i, 8, pp. 397-403.
197. HINDE, G. J. On the zone of Marsupites in the Chalk at Beddington, near Croydon, Surrey. Geol. Mag. i, 10, pp. 482-487.
Lists of spp.
198. HOLM, G. Kinnekulles berggrund. Sveriges Geol. Unders. Afh. No. 172, 1901, pp. 1-118, 4 pls.
199. —. Palæontologiska notiser. Op. cit. No. 179, 104 pp., 14 pls.
200. HOLMES, W. MURTON. List of fossils collected. [Surrey.] P. Croydon Club 1903-1904, pp. 45 & 46.
201. HOLMGREN, E. Zur Kenntniss der zylindrischen Epithelzellen. Arch. mikr. Anat. lxx, 2, pp. 280-297, pls. xviii & xix, 5 figg.
202. HORST, R. Wawo and palolo worms. Nature lxxix, p. 582.
203. HUBRECHT, A. A. W. Die Abstammung der Anneliden und Chordaten und die Stellung der Ctenophoren und Plathelminthen im System. Jena. Zeitschr. xxxix, 1, pp. 151-176.
204. —. On the relationship of various invertebrate phyla. P. Ac. Amsterdam, April 23, 1904, pp. 839-846.
205. HUDLESTON, W. H. On the origin of the marine (halolimnic) fauna of Lake Tanganyika. Geol. Mag. i, 7, pp. 337-382, 2 pls.
206. HURRELL, H. E. Polyzoa. Tr. Norfolk Soc. vii, 5, p. 755. [*Rotifera*, p. 756.]
207. IKEDA, I. The Gephyrea of Japan. J. Coll. Tokyo xx, 4, 87 pp., 4 pls. [n. spp.]
208. ISSEL, R. Sui Rotiferi endoparassiti degli Enchitreidi. Arch. Zool. exp. ii, 1, pl. 1-9, pl. 1.

209. [ISSEL, R.] Due nuove *Fridericia*. Atti Soc. Ligustica xv, 1, pp. 31–39, 17 figg.
210. ISTVÁN RÁTZ. Új és kevésbé ismert hazai mételyek. Allatt. Kozl. Magyar Tars. 1903, ii, 2, pp. 83–88, pl. x.
211. —. In Ungarn gesammelte arten von *Mesocestoides*. Op. cit. 1904, iii, 2, pp. 116 & 119.
212. —. A széles galandféreg előfordulása hazánkban. Termes Kozl. Magyar Tars. 1904, pp. 22–28, 5 figg.
213. IWANOW, P. Ueber die Regeneration der Segmente bei den Polychaeten. Protok. St. Peterb. Obshch. xxxv, 1904, 4 [German résumé, pp. 307–309], pp. 254–261.
214. JÄGERSKIÖLD, L. A. *Scaphanocephalus expansus* (Crepl.) eine genitalnapftragende Distomide. Res. Swed. Zool. exp. Egypt and the White Nile 1901. i. 1904, 16 pp., 1 pl., 3 figg.
215. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. Jahrb. geol. Reichsanst. liv (1), 1904, pp. 75–90.
216. JAMMES, L. & MANDOU, H. Sur les propriétés bactéricides des sucs helminthiques. C.R. Ac. Sci. cxxxix, 2, pp. 329–331.
217. JANICKI, C. v. Bemerkung über Cestoden ohne Genitalporus. Centrbl. Bakter. xxxvi, pp. 222 & 223, 1 fig.
218. JANOWSKY, R. Über die Polygordiuslarve des Hafens von Triest. Arb. Inst. Wien xv, 2, pp. 197–212, 2 pls.
219. JENNINGS, H. S. Asymmetry in certain lower organisms and its biological significance. Mark Anniv. Vol. 1903, New York, pp. 317–337.
220. JOHNSON, H. P. Fresh-water Nereids from the Pacific Coast and Hawaii, with remarks on fresh-water Polychæta in general. Mark Anniv. Vol. 1903, New York, pp. 205–222, pls. xvi & xvii.
221. JOHNSTON, S. J. Contributions to a knowledge of Australian *Entozoa*. III. On some species of *Holostomidae* from Australian birds. P. Linn. Soc. N. S. Wales xxix, i, pp. 108–116, pls. v–vii. [5 n. spp.]
222. JORDAN, H. Die physiologische Morphologie der Verdauungsorgane bei *Aphrodite aculeata*. Zeitschr. wiss. Zool. lxxviii, 2, pp. 165–190, pl. x.
223. JOUBIN, L. Note sur une nouvelle Némerte pélagique (*Nectonemertes grimaldii*). Bull. Mus. Monaco 1904, No. 20, 6 pp., 2 figg.
224. JUKES-BROWNE, A. J. The Cretaceous rocks of Britain. The upper chalk of England. Mem. geol. Surv. U. K. iii, 1904, 566 pp.
225. KAMENSKY, S. Notices helminthologiques. 2. Sur la présence réelle du *Dicrocoelium lanceolatum* chez le chien. Trudui Kharkov. Univ. xxxvi, pp. 59–64. [Résumé, p. 63.]
226. KARASKASCH, N. I. Note sur la faune contenue dans les galets de Bolschезemelskaïa toundra. Protok. St. Peterb. Obshch. 1904, xxxv, pp. 130–146. [French résumé, p. 162.]
227. KATHARINER, L. Ueber die Entwicklung von *Gyrodactylus elegans* v. Nrdm. Zool. Jahrb. Suppl. vii, pp. 519–550, pls. xxvi–xxviii, 10 figg.
228. KEEBLE, F. The bionomics of *Convoluta roscoffensis*, with special reference to its green cells. Rep. Brit. Ass. 1903–1904, p. 691. [To appear in P. R. Soc. London.]

229. KENNARD, C. P. The mode of infection by Nematoids. *Lancet* 1904, i, p. 1379.
230. KERSHAW, J. A. Excursion to Launching Place. *Victorian Natural.* xx, 9, Zoology, pp. 122-125.
231. *KITZ, T. Bakterienkunde und pathologische mikroskopie für Thierärzte und Studierende der Thiermedizin. Wien, 1903, xi+539 pp., 200 figg.
Review by BRAUN, *Zool. Zentrbl.* xi, p. 19.
232. KNIPOWITSCH, N. Explorations zoologiques sur le bateau casse-glace "Ermak" en été de 1901. *Ann. Mus. zool. Acad. St. Petersb.* vi, pp. i-xx, 1 pl.
233. KOFORD, C. A. Biological survey of the waters of Southern California at San Diego. *Science* xix, pp. 505-508.
234. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au lac Baïkal, pendant l'été de 1902. *Arch. Zool. exp. Hist. Nat.* (4) ii, xxxii, pp. 1-26.
235. KORSCHULT, E. Über Doppelbildungen bei Lumbriciden. *Zool. Jahrb. Suppl.* vii, 1904, pp. 257-300, 2 pls.
236. KOWALEWSKI, M. Helminthological studies. VIII. On a new tape-worm: *Tatria biremis* n. gen., n. sp. *Bull. Ac. Cracovie* 1904, 7, pp. 367-369, pls. ix & x.
237. *KUNSEMÜLLER, F. Zur Kenntnis der polycephalen Blasenwürmer, insbesondere des *Cænurus cerebralis* und des *Cænurus serialis*. Inaug. Diss. (Tübingen) Jena, 1904, 32 pp., 3 pls. [See *Zool. Rec.* XL, VERMES (218).] Abstract, *Zool. Zentrbl.* xi, pp. 443-445.
238. KUNSTLER, J. & GRUVEL, A. Sur le développement d'éléments particuliers de la cavité générale du Siponcle. *Pr.-verb. Soc. Sci. Bordeaux* 1896-97, pp. 57-60.
239. LADREY, F. Sur le pigment de *Sipunculus nudus*. *C.R. Soc. Biol.* lvi, pp. 850-852.
240. —. Sur les urnes de *Sipunculus nudus*. *C.R. Ac. Sci.* cxxxix, 2, pp. 370-371.
241. LAIDLAW, F. F. Notes on some Polyclad *Turbellaria* in the British Museum. *Mem. Manchester Soc.* xlviii, No. 15, 6 pp.
242. LAMPLUGH, G. W., KILROE, J. R., M'HENRY, A., SEYMOUR, H. J., WRIGHT, W. B. & MUFF, H. B. The geology of the county of Belfast. *Mem. geol. Surv. Ireland* 1904, 166 pp.
243. LANDER, C. H. The anatomy of *Hemiurus crenatus* (Rud.) Lühe, an appendiculate Trematode. *Bull. Mus. Harvard* xlv, No. 1, pp. 1-27, 4 pls.
244. LAUTERBORN, R. Beiträge zur Fauna und Flora des Oberrheins und seiner Umgebung. *Mt. Pollichia Jahrb.* lx, 19, pp. 42-130.
245. *——. Leonhard Baldners Vogel-, Fisch-, und Tierbuch. Ludwigs-hafen 1903, lxvi, 177 pp.
Review, ZSCHOKKE, *Zool. Zentrbl.* xi, pp. 412-415.
250. LAVERAN, —. A new Parasite *Piroplasma donovani*. *Lancet* 1904, i, p. 1021.
251. LEBOUR, M. V. A preliminary note on a Trematode parasite in *Cardium edule*. *Rep. Northumberland Sea Fisheries Comm.* 1904, p. 82, figg. 1-3. [Not named.]

252. LE DANTEC, A. Un cas d'hématurie bilharzienne provenant du Natal. C.R. Soc. Biol. lvii, pp. 399 & 400.
253. LÉGER, L. Considérations sur le genre *Triactinomyxon* et les Actinomyxidies. C.R. Soc. Biol. lvi, pp. 846-848.
254. —. Sur la sporulation du *Triactinomyxon*. T. c. pp. 844-846, 4 figg.
255. LEISHMAN, Major W. B. Note on the nature of the parasitic bodies found in Tropical Splenomegaly. Brit. Med. J. 1904, i, p. 303.
256. LEON, N. Note sur la fréquence des Bothriocéphales en Roumanie. Bull. Soc. Bucarest xiii, pp. 286 & 287.
257. LEVI, G. Sull' origine delle cellule sessuali. Monit. Zool. ital. xv, pp. 244-246. [*Ascaris*.]
258. LHOMME, —. Coquilles fossiles trouvées en 1903 dans les sables de Saint-Gobain (Yprésien). Feuille Natural. (4) xxxiv, pp. 103-106.
259. LINDER, C. Étude de la faune pélagique au Lac de Bret. Rev. Suisse Zool. xii, pp. 149-258, pl. iv.
260. LINSTOW, O. v. Neue Beobachtungen an Helminthen. Arch. mikr. Anat. lxix, 3, pp. 484-498, pl. xxviii.
261. —. Beobachtungen an Nematoden und Cestoden. Arch. Naturg. 1904, i, pp. 297-308, pl. xiii.
262. —. Bericht über die wissenschaftlichen Leistungen in der Naturgeschichte der Helminthen im Jahre 1900. Arch. Naturg. 1897, ii, 3 [published in 1904], pp. 1-50.
263. —. 1901. T. c. pp. 50-97.
264. —. Neue Helminthen aus Westafrika. Centrbl. Bakter. xxxvi, pp. 379-383, 1 pl.
265. —. Neue Helminthen. Op. cit. xxxvii, pp. 678-683, 11 figg.
266. —. Ueber zwei neue Entozoa aus Acipenseriden. Annuaire Mus. St. Petersb. ix, pp. 17-19, 6 text-figg.
267. —. Entozoa des Zoologischen Museums der Kaiserlichen Akademie der Wissenschaften zu St. Petersburg. II. Op. cit. viii, pp. 265-294, pls. xvii-xix.
268. —. *Nematoda* in the collection of the Colombo Museum. Spolia Zeylan. i, 4, pp. 91-104, 2 pls.
269. LINVILLE, H. R. The natural history of some tube-forming Annelids (*Amphitrite ornata*, *Diopatra cuprea*). Mark Anniv. Vol. 1903, New York, pp. 227-235.
270. LIVANOW, N. Untersuchungen zur morphologie der Hirudineen. Zool. Jahrb. Anat. xx, pp. 153-226, pls. ix-xi.
271. LOEB, L. & SMITH, A. J. Ueber eine die Blutgerinnung hemmende Substanz in *Anchylostoma caninum*. Centrbl. Bakter. xxxvii, pp. 93-98.
- LOEPER, M. [See BRAULT & LOEPER (47).]
272. LOIR, A. *Ascaris canis* de taille extraordinaire. Arch. parasit. vii, p. 483. [Reported by BLANCHARD.]
273. LOMMEN, C. P. The metamerism of the nervous system in *Arenicola cristata*. Biol. Bull. vi, pp. 321 & 322.

274. LONGCHAMPS, M. DE SELYS. Développement postembryonnaire et affinités des *Phoronis*. Mem. Ac. Belgique i, 1904, 150 pp., 7 pls. [Affinities, pp. 129 & 130.]
275. LOOSS, A. Zur Kenntniss des Baues des *Filaria loa* Guyot. Zool. Jahrb. Syst. xx, pp. 549-574, pl. xix.
276. —. Zum Bau des erwachsenen *Ancylostomum duodenale*. Centrbl. Bakter. xxxv, pp. 752-762.
277. LOPPENS, K. Sur une variété de *Membranipora membranacea* L. et sur quelques animaux marins vivant dans l'eau saumâtre. Ann. Soc. Zool. Belgique xxxviii, Bull. pp. cxlii & cxliii. [Refers to *Vermes*.]
278. LORD, J. E. Notes. III. On a new Rotifer. Tr. Manchester Micr. Soc. 1903, pp. 78-80, pl. iii, fig. 3.
279. LOW, G. C. *Filaria perstans*. Lancet 1904, i, pp. 752 & 753.
280. —. *Filaria perstans* and the suggestion that it belongs to the genus *Tylenchus* (Bastian). T. c. pp. 420 & 421, 4 figg.
281. —. A new *Filaria* in a monkey. [Uganda.] J. trop. Medicine vii, p. 2.
- LUDWIG, A. [See FALKNER & LUDWIG (135).]
282. LÜHE, M. Geschichte und Ergebnisse der Echinorhynchen-Forschung bis auf Westrumb (1821, mit Bemerkungen über alte und neue Gattungen der Acanthocephalen). Zool. Ann. i, 2, pp. 139-250. *Echinorhynchus* spp. descriptions.
284. LUTHER, A. Die Eumesostominen. Zeitschr. wiss. Zool. lxxvii, pp. 1-272, pls. i-ix, 16 figg.
285. —. Planktologiska och hydrofaunistiska studier i Lojo sjö under sommaren 1901. Medd. Soc. Faun. Fenn. xxviii, pp. 52-55.
286. MACCALLUM, W. G. *Echinostomum garzettæ* n. sp. (Voyage of Dr W. Volz). Zool. Jahrb. Syst. xx, pp. 541-548, 1 fig.
287. MACLAREN, N. Beiträge zur Kenntnis einiger Trematoden (*Diplectanum æquans* Wagener und *Nemathobothrium molæ* n. sp.). Jena. Zeitschr. xxxviii, 3, pp. 573-618, pls. xx-xxii, 6 text-figg.
288. MADSEN, V. On Jurassic fossils from East-Greenland. Medd. Gronland xxix, 1, pp. 159-210, pls. vi-x.
289. MAEHRENTHAL, F. C. v. Entwurf von Regeln der Zoologischen Nomenclatur. Als Grundlage für eine Neubearbeitung der internationalen Regeln der internationalen Nomenclatur Commission. Zool. Ann. i, 2, pp. 89-138.
290. MALAQUIN, A. La céphalisation chez les Annélides et la question du métamérisme. C.R. Ac. Sci. cxxxviii, pp. 821-824.
291. MAN, J. G. DE. Ein neuer freilebender Rundwurm aus Patagonien, *Plectus* (*Plectoïdes*) *patagonicus* n. sp. Ber. Senckenberg. Ges. 1904, pp. 41-46, 6 figg.
- MANDOUL, H. [See JAMMES & MANDOUL (216).]
292. MARCHAL, P. Recherches sur la biologie et le développement des Hyménoptères parasites. Arch. Zool. exp. xxxii, 3, pp. 257-335, pls. ix-xiii.
- Discusses budding in other groups of animals.

293. MARKOW, M. Essai sur la faune des Turbellariés dans les gouvernements de Kharkow et de Poltawa. Trudui Kharkov. Univ. xxxix, pt. i, pp. 1-80. [In Russian.]
294. MARENZELLER, E. v. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U.S. Fish Comm. Steamer "Albatross," during 1891, Lieut. Comm. Z. L. Tanner, U.S.N. commanding. xxxiii. Stein- und Hydro-Korallen, 3 pls. xxxiv. *Lagisca irritans* sp. nov. ein symbiont von Hydrokorallen, 1 pl. Bull. Mus. Harvard xliii, Nos. 2 & 3, pp. 75-94.
- MAROTEL. [See CARAGEAN & MAROTEL (69).]
295. MARPMANN, —. Die Präparation der Planarien. Zeitschr. ang. Mikr. ix, 12, pp. 328 & 329.
296. MARTIN, G. C. *Vermes*. Maryland Geol. Surv. 1904, p. 430.
297. MARTINI, E. Protozoen im Blute der Tropenkolonisten und ihrer Haustiere. Verh. Ges. deutsch. Naturf. 1904, ii, 2, pp. 501 & 502.
298. MARVAL, L. DE. Sur les Acanthocéphales d'Oiseaux. Note préliminaire. Rev. Suisse Zool. xii, pp. 573-583.
299. MATTIESEN, E. Ein Beitrag zur Embryologie der Süßwasserendocölen. Zeitschr. wiss. Zool. lxxvii, pp. 274-361, pls. x-xiii.
300. MAXWELL, S. S. Comparative study of muscular tonus. Science xix, p. 249.
301. MEISENHEIMER, J. Review of ROMER & SCHAUDINN's Fauna Arctica i, 1. Einleitung, Plan des Werkes und Reisebericht. Jena, 1900, pp. 1-84, 2 pls. Zool. Zentrbl. xi, pp. 179-183.
302. MEISSNER, W. Ueber das Plankton des Flusses Murgab, Merw, Turkestan. Zool. Anz. xxvii, 1904, pp. 648-650, 3 figg.
303. MELL, C. Die von Oscar Neumann in Nordost-Afrika gesammelten Landplanarien. Zool. Jahrb. Syst. xx, pp. 471-490, pl. xvii.
304. —. Die Landplanarien der Madagassischen Subregion. Abh. Senckenb. Ges. xxvii, 2, pp. 193-236, 3 pls., 4 text-figg.
- MESNIL, F. [See CAULLERY & MESNIL (76-80).]
305. MICHAELSEN, W. Über eine *Trinephrus*-Art von Ceylon. Mt. Mus. Hamburg xxi, pp. 125-131.
306. —. Revision der composition Styeliden oder Polyzoiner. T. c. pp. 1-124, 2 pls.
Affinities of worms discussed.
307. —. Oligochaeten von Peradeniya auf Ceylon, ein Beitrag zur Kenntnis des Einflusses botanischer Gärten auf die Einschleppung peregriner Thiere. SB. Böhmisch. Ges. 1903, xl, 16 pp., 6 figg.
308. MILLER, D. J. M. Tapeworm in a Child. Lancet 1904, i, p. 1751.
309. MIRANDA RIBEIRO, A. DE. Notas Zoologicas. Un *Distomum* des aves. Arch. Mus. Rio Janeiro xii, 1903, pp. 137 & 138.
Review in Zool. Zentrbl. xi, p. 280.
310. MONTGOMERY, T. H. The development and structure of the larva of *Paragordius*. P. Ac. Philad. lvi, 3, pp. 738-755, pls. xlix & l.
311. MONTICELLI, F. S. Il genere *Lintonia* Montic. Arch. Zool. ii, 1, pp. 117-124, pl. 7.

312. MOORE, J. P. A synopsis of the Annelids of the Woods Hole region. *Science* xix, p. 250.
313. —. Descriptions of two new species of *Polychæta* from Woods Hole, Massachusetts. *P. Ac. Philad.* lv, 3, pp. 720–726, pl. xl.
314. —. Some pelagic *Polychæta* new to the Woods Hole fauna. *T. c.* pp. 793–801, pl. lv. [1 n. sp.]
315. —. New *Polychæta* from California. *T. c.* pp. 484–503, pls. xxxvii & xxxviii.
316. —. A new generic type of *Polygordidæ*. *Amer. Natural.* xxxviii, pp. 519 & 520.
317. — & BUSCH, KATHARINE J. *Sabellidæ* and *Serpulidæ* from Japan, with descriptions of new species of *Spirorbis*. *Op. cit.* lvi, i, pp. 157–179, pls. xi & xii, 8 text-figg.
318. MOREIRA, C. Vermes Oligochetos do Brazil. *Arch. Mus. Rio Janeiro* xii, 1903, pp. 128–136.
319. MORGAN, T. H. Notes on regeneration. *Biol. Bull.* vi, pp. 159–172.
320. —. The control of Heteromorphosis in *Planaria maculata*. *Arch. Entwicklmech.* xvii, pp. 683–695, 1 fig.
321. —. An analysis of the phenomena of organic polarity. *Science* xx, pp. 742–748.
322. —. Polarity and axial heteromorphosis. *Amer. Natural.* xxxviii, pp. 502–505.
323. — & SCHIEDT, ALICE E. Regeneration in the Planarian *Phagocata gracilis*. *Biol. Bull.* vii, pp. 160–165.
324. MOSSERI, V. La maladie vermiculaire. Récemment observée en Égypte sur les bananiers, betteraves, etc., causé par l'*Heterodera radicola* (Greef-Muller) avec une observation sur les Orobanches. *Bull. Inst. Egypt.* iv, pp. 5–35, 7 figg.
325. MRÁZEK, A. Über eine neue polypharyngeale Planarienart aus Montenegro (*Pl. montenigrina* n. sp.). *SB. Bohmisch. Ges.* 1903, xxxiii, 43 pp., 2 pls.
326. MUNTHE, H. Stratigrafiska studier öfver gotlands Silurlager. *Sveriges geol. Unders. Afh.* 192, 55 pp.
327. MURRAY, J. Some Scottish Rotifers (*Bdelloida*). *Ann. Scott. Nat. Hist.* No. 51, 1904, pp. 160–166.
328. NELSON, J. A. The early development of *Dinophilus* as compared with that of Annelids. *Amer. Natural.* xxxviii, pp. 500 & 501.
329. —. The early development of *Dinophilus*: a study in cell-lineage. *P. Ac. Philad.* lvi, 3, pp. 687–737, pls. xliii–xlvi, 4 charts, 6 figg.
 1. Introductory and historical.
 2. Material and methods.
 3. Nomenclature.
 4. History of the cleavage to the formation of the germ layers.
 5. Outline of further development.
 6. History of first quartette.
 7. History of second and third quartettes.
 8. History of fourth and fifth quartettes.
 9. Axial relations.
 10. Phylogenetic relationships of *Dinophilus* in the light of its early development.
330. NEPPI, V. Über einiger exotische Turbellarien. *Zool. Jahrb. Syst.* xxi, 3, pp. 303–326, pls. ix & x.
331. NERESHEIMER, E. Über *Lohmannella catenata*. *Zeitschr. wiss. Zool.* lxxvi, pp. 137–166, pls. x & xi.

332. NEVEU-LEMAIRE, M. LE. Mission scientifique de MM. G. de Créqui-Montfort et E. Sénéchal de la Grange dans l'Amérique du Sud. Bull. Soc. zool. France xxix, 4, pp. 82-89.
333. NOBRE, A. Subsídios para o estudo da fauna marinha do sul de Portugal. Ann. Sci. nat. Porto viii, pp. 153-160. [*Vermes*, p. 160, 4 spp.]
334. —. Subsídios para o estudo da fauna marinha do norte de Portugal. T. c. pp. 37-94. [*Vermes*, pp. 88-92.]
335. NOËL, C. Sur la faune des lydiennes du grès Vosgien. C.R. Ac. Sci. cxxxviii, pp. 1531-1533.
336. —. La strongylose des moutons. Naturaliste (2), No. 424, p. 248.
337. NUSBAUM, J. Recherches sur la régénération de quelques Polychètes. Bull. Ac. Cracovie 1904, 9, pp. 401-409.
338. —. Vergleichende Regenerationsstudien. II. Ueber die Regeneration des Vorderteiles des Enchytraeidenkörpers nach einer künstlichen Operation. Arch. Polon. ii, 3, pp. 233-258, pl. vii.
339. ODHNER, T. *Urogonoporus armatus* Lühe, 1902, die reifen Proglottiden von *Trilocularia gracilis* Olsson, 1869. Arch. parasit. viii, pp. 465-471.
340. ORLANDI, S. Rigenerazione cefalica naturale in alcune Maldanidi. Atti Soc. Ligustica xiv, pp. 160-164, 4 figg. [See Zool. Rec. XL, VERMES (314).]
341. OSBORN, H. L. On the habits and structure of *Cotylaspis insignis* Leidy, from Lake Chautauqua, New York, U.S.A. Zool. Jahrb. Anat. xxi, 2, pp. 201-242.
342. D'OSSAT, DE A. Terza contribuzione allo studio della fauna fossile paleozoica delle Alpi Carniche. Atti Acc. Lincei (5) iv, pp. 84-120, 1 pl.
343. OSTROUMOFF, A. Comptes-rendus des dragages et du plancton de l'expédition du "Selianik." Bull. Ac. St. Petersburg. (5) v, pp. 33-92 (1896).
344. PARKER, G. H. Maldives cephalochordates, with the descriptions of a new species from Florida. Bull. Mus. Harvard xvi, No. 2, pp. 39-49, 2 pls.
345. PARKINSON, J. H. The zoning of the culm in South Germany. Geol. Mag. (5) i, pp. 272-276.
346. PAULSEN, O. Plankton-investigations in the waters round Iceland in 1903, 2 maps. Medd. Komm. Havund. i, p. 40.
347. PAVESI, P. Esquisse d'une faune Valdôtaine. Atti Soc. Ital. xliii, 1904, pp. 191-260.
- PEARL, R. [See RAYMOND PEARL & FULLER (365).]
348. PÉREZ, C. & GENDRE, E. Sur l'ovogénèse du *Branchellion*. C.R. Soc. Biol. lvii, pp. 605 & 606.
349. — & —. Sur les fibres musculaires du *Branchellion*. T. c. pp. 113-115.
350. PETRUNKEWITSCH, A. Künstliche Parthenogenese. Zool. Jahrb. Suppl. vii, pp. 77-138, pls. viii-x.
351. PIERANTONI, U. Altri nuovi oligocheti del Golfo di Napoli. (*Limnodriloides* n. gen.) Il nota sui *Tubificidae*. Boll. Soc. Napoli (1) xvii, pp. 185-192, 3 figg.

352. POLÉNOFF, B. Description géologique de la partie nord-ouest de la 15-me feuille du viii zone et de la partie sud-ouest de la 15-me feuille du vii zone de la carte générale du gouvernement Tomsk. Trav. geol. St. Petersb. iii, 1901, pp. 133-339.
353. *PONOMAROFF, TATIANA. Recherches expérimentales sur la greffe des Echinocoques dans le cavité abdominale des lapins, 1903. [Thesis.] Centrbl. Bakter. xxxiv, p. 623.
354. PORTA, A. Sulla *Spiroptera sanguinolenta* Rud. Atti Soc. Modena (4) iv, 35, p. 40.
355. *——. Gli Echinorinchi dei Pesci. Camerino, Savini, 1904, 78 pp. Title in Monit. Zool. ital. xv, p. 374.
356. POWELL, A. The life-span of the Guinea-worm. Brit. Med. J. 1904, i, p. 73.
357. PRATT, H. S. Descriptions of four Distomes. Mark Anniv. Vol. 1903, New York, pp. 25-38, pl. iv.
358. PRENANT, A. Sur la structure des cellules épithéliales intestinales de *Distomum hepaticum*. C.R. Soc. Biol. lvi, pp. 523-525.
PRITCHARD, G. B. [See HALL & PRITCHARD (184).]
359. *RAGAZZI, V. Sulla presenza dell' *Ascaris mystax* Zeder, nell' uomo. Ann. Med. navale (9) ii, pp. 509-520, Roma, 1903.
Title in Monit. Zool. ital. xv, p. 211.
360. RANGE, P. Das Diluvialgebiet von Lübeck und seine Dryastone nebst einer vergleichenden Besprechung der Glazialpflanzen führenden Ablagerungen überhaupt. Zeitschr. Naturw. lxxvi, pp. 161-273, 1 pl. [Vermes, p. 239.]
361. RANSOME, F. L. The geology and ore deposits of the Bisbee quadrangle, Arizona. Prof. Papers U. S. Geol. Surv. 21, 1904, 112 pp.
362. RANSOM, B. H. Manson's eye-worm (*Oxyspirura mansonii*) with a general review of Nematodes parasitic in the eyes of birds, and note on the spiny-suckered tapeworm of chickens (*Davainea echinobothrida* [= *Taenia botrioplites*] and *D. tetragona*). Bull. U. S. Dep. Agric. Animal Ind. 60, 1904, 72 pp., 52 figg.
RÁTZ, I. [See ISTVÁN RÁTZ (210-212).]
363. RÁTZ, S. v. *Dibothriocephalus latus* im Hunde. Centrbl. Bakter. xxxvi, pp. 384-387.
364. RAYMOND, G. Reptomonas ou Cercomonas? Microgr. prep. xii, 3, pp. 137 & 138, 5 figg.
365. RAYMOND PEARL & FULLER, W. N. Variation and correlation in the earthworm. (Abstract.) Rep. Michigan Ac. v, pp. 200-202.
366. REEKER, H. Verwachsungsversuche mit Regenwürmern. Jahresber. Westfal. Ver. xxxi, pp. 180-183.
367. REGNY, P. E. VINASSA DE. Fossili ed impronte del Montenegro. Boll. Soc. geol. Ital. xxiii, pp. 307-322, pl. ix.
368. REMÉŠ, M. Zkameněliny bludných balvanů z okolí Příbora. Vestník. Klub. Prostejove 1904, vi, pp. 107 & 108. [Note on memoir of 1898.]
369. REMLINGER, P. Filaire de Médine. Eosinophilie. C.R. Soc. Biol. lvii, pp. 76 & 77.
370. RENDALL, P. *Bilharzia hæmatobia*. Lancet 1904, i, pp. 755 & 756.

371. RETZIUS, G. Zur Kenntniss der Spermien der Evertebraten. Biol. Untersuch. xi, pp. 1-32, pls. i-xiii.
372. RICCI, O. Un' autoesperienza a proposito della Cisticercosi bovina. Boll. Naturalista xxiv, pp. 85-87.
373. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. Ann. Univ. Lyon fasc. xiv, 252 pp., viii pls. [*Vermes, Serpula* p. 201.]
374. RIGBY, J. A. A case of tapeworm in a child. Lancet 1904, i, pp. 1348 & 1349.
375. RITTER, W. E. & DAVIS, B. M. Studies on the ecology, morphology, and speciology of the young of some Enteropneusta of Western North America. Univ. Calif. publ. Zool. i, 5, pp. 171-210, pls. xvii-xx.
376. ROHDE, E. Untersuchungen über den Bau der Zelle. iv. Zum histologischen Wert der Zelle. Zeitschr. wiss. Zool. lxxviii, pp. 1-149, pls. i-vii.
377. ROSA, D. Gli Oligocheti raccolti in Patagonia. Atti Soc. Modena (4) iv, 35, pp. 7-10.
378. —. L'*Allolobophora* (*Eophila*) *nematogena* n. sp., e i suoi speciali Linfociti. Op. cit. (4) v, 36, pp. 11-13.
379. —. Un lombrico cavernicolo (*Allolobophora spelæa* n. sp.). Op. cit. (4) iv, 35, pp. 36-39.
380. ROSENFELD, G. Studien über das Fett der Meeresorganismen. Wiss. Meeresuntersuch. v, 2, pp. 57-85.
381. ROSS, E. H. *Bilharzia hæmatobia*. Lancet 1904, i, p. 687.
382. ROSSETER, T. B. The genital organs of *Tænia sinuosa*. J. Quekett Club ii, No. 55, pp. 81-90, pl. v.
383. ROUSSEL, M. Tableau stratigraphique des Pyrénées. Bull. Carte geol. France xv, No. 97, pp. 1-116, 3 pls., 66 figg.
384. ROVERETO, G. Studi monografici sugli Anellidi fossili. Pal. Ital. x, 1904, pp. 1-73, pls. i-iv.
385. ROWE, A. W. The zones of the white chalk of the English coast. iv. Yorkshire. P. Geol. Ass. xviii (4), pp. 193-296, pls. xvii-xl. *Serpula* spp., p. 294.
386. RUEDEMANN, R. Paleontologic Papers. II. Trenton conglomerate of Rysedorph Hill, Rensselaer Co. N. Y. and its fauna. Rep. N. York Mus. lv, pp. 3-114.
387. RUGE, R. Der *Anopheles maculipennis* (Meigen) als Wirt eines *Distomum*. Centrbl. Bakter. xxxv, referate, p. 258.
388. SABUSSOW, H. Tricladenstudien. iv. Erster vorläufiger Bericht über die von Herrn W. Garjajew im Baikalsee gesammelter Planarien. Trudui Kharkov. Univ. xxxvi, No. 6, pp. 1-58, 1 pl.
389. SAINT-HILAIRE, K. Untersuchungen über den Stoffwechsel in der Zelle und in den Geweben. II. Tr. Soc. Imp. Nat. St. Peters. xxxix, 1903, pp. 235-365, pls. vi & vii. Russian with a German résumé.
390. SALA, L. Intorno ad una particolarità di struttura delle cellule epiteliali che tappezzano il tubo ovarico e spermatico degli Ascaridi. Rend. Ist. Lombardo xxxvii, 16, pp. 874-887, 1 pl.

391. SALMON, D. E. A new Nematode (*Gongylonema ingluvicola*) parasitic in the crop of chickens. Bull. U. S. Dep. Agric. Animal Ind. lxiv, 3 pp., 2 figg.
392. —. A new parasite (*Strongylus quadriradiatus* n. sp.) found in the pigeon. Op. cit. xlvii, 6 pp., 10 figg.
393. SANDER, L. Praktische Schlussfolgerungen aus den neusten Trypanosoma-Forschungen. Verh. Ges. deutsch. Naturf. 1904, ii, 2, p. 303.
394. SÁNDOR GORKA. Az állatok psychikai életéről. Allatt. Kozl. Magyar Tars. i, 1902, pp. 62–72.
395. —. Az állatok psychikai életéről. T. c. pp. 104–113, 8 figg.
396. SCHARFF, R. F. *Hirudinea*. Irish Natural. xiii, p. 203. [Three fresh-water leeches found at Sligo.]
397. SCHAUDINN, —. Generations- und Wirtswechsel bei *Trypanosoma* und *Spirochäte*. Centrbl. Bakter. xxxv, Referate, p. 312.
398. SCHEPOTIEFF, A. Untersuchungen über die Borstentaschen einiger Polychäten. Zeitschr. wiss. Zool. lxxvii, pp. 586–605, pls. xxvi–xxviii.
399. —. Zur Organisation von *Rhabdopleura*. Bergens Mus. Aarbog 1904, No. 2, 21 pp., 3 pls.
SCHIEDT, ALICE E. [See MORGAN & SCHIEDT (323).]
400. SCHLEIP, K. Die Trichinosis-epidemie in Homberg und die für Trichinosis charakteristische Eosinophilie. Verh. Ges. deutsch. Naturf. 1904, ii, 2, pp. 59–62.
401. SCHNEE, P. Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur Fauna der Insel Nauru. Zool. Jahrb. Syst. xx, 1904, pp. 387–412.
402. SCHNEIDER, P. *Oxyuris vermicularis* im Beckenperitoneum eingekapselt. Centrbl. Bakter. xxxvi, pp. 550–554.
403. SCHNEIDER, G. Beiträge zur Kenntnis der Helminthenfauna des Finnischen Meerbusens. Acta Soc. Faun. Fenn. xxvi, No. 3, 36 pp., 1 pl.
404. —. Anleitung zum Sammeln von Fischparasiten. KB. Ver. Riga xlv, pp. 10–17.
405. SCHRÖDER, O. Beiträge zur Kenntnis der Bauchsinnesorgane (Bauchaugen) von *Eunice viridis* Gray, sp. (*Palolo*). Zeitschr. wiss. Zool. lxxix, i, pp. 132–150.
— [See also SCHUBERG & SCHRÖDER (406).]
406. SCHUBERG, A. & SCHRÖDER, O. *Myenchus bothryophorus* n. sp., ein in den Muskelzellen von *Nepheleis* schmarotzender neuer Nematode. Zeitschr. wiss. Zool. lxxvi, pp. 409–421, pl. xxx.
407. —. Über einen in den Muskelzellen von *Nepheleis* schmarotzenden neuen Nematoden, *Myenchus bothryophorus* n. g., n. sp. (Vorläufige Mitteilung). Verh. Ver. Heidelb. vii, pp. 629–632. [Cf. (406).]
408. SCHULTZ, E. Über Reduktionen. I. Über Hungererscheinungen bei *Planaria lactea*. Arch. Entwicklmech. xviii, pp. 555–577, pl. xxxiv.
409. —. Über Regenerationsweisen. Biol. Centrbl. xxiv, pp. 310–317.

410. *SCHUPFER, F. Sopra un caso di lombricosi epatica. Gazz. Ospedali xxv, pp. 294-296, 1904.
From Monit. Zool. ital. xv, p. 211.
411. SCHYDLOWSKY, A. Matériaux relatifs à la faune des Polypes Hydraires des mers arctiques. 1. Les Hydraires de la Mer Blanche le long du littoral des Isles Solowetzky. Trudui Kharkov. Univ. xxxvi, pp. 1-276, 5 pls. [In Russian. Mentions several worms.]
412. SCOTT, J. *Bilharzia hæmatobia* in Persia. Brit. Med. J. 1904, i, p. 725.
413. SCOTT, A. Some parasites found on fishes in the Irish Sea. P. Liverp. biol. Soc. xviii, pp. 113-125.
414. SCRIBAN, J. A. Contribution à la faune des Hirudinées d'eau douce de Roumanie. Ann. Univ. Jassy iii, pp. 17-20.
415. SEKERA, E. O původu zelené baroy u některých ploštěnek. Vestník. Klub. Prostejove vii, pp. 93-107.
Mentions *Convoluta roscoffensis* and *Mesostoma viviparum*.
416. SELOUS, C. F. Simultaneous occurrence of *Filaria* and malarial parasites in the blood. Lancet 1904, ii, pp. 1284 & 1285; Brit. Med. J. 1904, ii, p. 1248.
417. SFAMENI, P. Les vésicules de la môle hydatigène ne représentent pas des villosités choriales altérées, mais une néoproduction exclusivement épithéliale. La môle vésiculaire et le chorio-épithélioma malin sont histologiquement identiques. Arch. ital. Biol. xl, pp. 219-246.
418. SKORIKOW, A. S. Recherches sur le plancton de la Néva. Trudui Kharkov. Univ. xxxix, pp. 87-106, 1 pl.
419. —. Über das Sommer-Plankton der Newa und aus einem Teile des Ladoga-Sees. Biol. Centrbl. xxiv, pp. 353-366. [List of *Rotifera* pp. 356 & 362.]
420. SMALLWOOD, W. M. The maturation, fertilization and early cleavage of *Haminea solitaria*. Bull. Mus. Harvard xlv, No. 4, pp. 261-309, 13 pls. [Unimportant for *Vermes*.]
SMITH, A. J. [See LOEB & SMITH (271).]
421. SMITH, J. C. *Synchaeta bicornis*: a new Rotifer from the brackish waters of Lake Pontchartrain, Louisiana. Tr. Amer. micr. Soc. xxv, pp. 121-126, pl. xviii.
422. SMITH, F. & BARRETT, J. T. The vascular system and blood flow in *Diplocardia communis* Garman. Science xix, p. 216.
423. SMYČKA, F. Novější nálezy v čelechovském devonu. Vestník. Klub. Prostejove 1905, vii, pp. 53-72, 1 pl. [*Vermes*, p. 62.]
424. SOBOLEW, D. Zur Stratigraphie des oberen Mitteldevons im polnischen Mittelgebirge. Zeitschr. Deutsch. geol. Ges. lvi, 3, pp. 63-72.
425. SOLLMANN, T. Structural changes of ova in anisotonic solutions and saponin. Amer. J. Phys. xii, pp. 99-115, 46 figg.
426. SOULIER, A. Revision des Annélides de la region de Cette. (Part III.) Mem. Ac. Montpell. (2), iii, pp. 319-374, 12 text-figg.
427. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante. Zapiski Kiev. Obshch. xviii, pp. i-xiii; 1-487; 1-216+iv pls. [In Russian.]

428. SPENGLER, J. W. Neue Beiträge zur Kenntniss der Enteropneusten. I. *Ptychodera flava* von Laysan. Zool. Jahrb. Anat. xviii, pp. 271–326, pls. xxiv–xxix.
429. —. II. *P. flava* von Funafuti (Ellice-Gruppe). Op. cit. xx, pp. 1–18, pls. i & ii.
430. —. III. Eine neue Enteropneustenart aus dem Golf von Neapel, nebst Beobachtungen über den postbranchialen Darm der Ptychoderiden. T. c. pp. 315–362, pls. xx–xxii.
431. —. IV. *Ptychodera erythræa*. T. c. pp. 413–428.
432. —. Einige weitere Beobachtungen an *Ptychodera erythræa*. Annuar. Mus. Univ. Napoli i, No. 1, 3 pp., 2 figg.
433. —. [Review of PUNNETT. The Enteropneusta. Fauna Geogr. Maldive Laccadive ii, 2, pp. 631–680, pls. xxxvii–xlii.] Zool. Zentrbl. xi, pp. 254–260.
434. SPIESS, C. Recherches anatomiques et histologiques sur l'appareil digestif de l'Aulostome (*Aulostoma gulo*). Rev. Suisse Zool. xii, pp. 585–647, pls. x & xi.
435. —. Sur les différenciations épithéliales du tube digestif d'*Hæmopsis sanguisuga*. C.R. Soc. Biol. lvi, pp. 698 & 699.
436. STEVENS, N. M. Further studies on the ovogenesis of *Sagitta*. Zool. Jahrb. Anat. xxi, pp. 242–252, pl. xvi.
437. —. On the germ cells and the embryology of *Planaria simplissima*. P. Ac. Philad. lvi, 1, pp. 208–220, pls. xiii–xvi & 5 text-figg.
438. ZUR STRASSEN, O. L. *Anthraconema* eine neue Gattung freilebender Nematoden. Zool. Jahrb. Suppl. vii, 1904, pp. 301–346, 2 pls., 9 figg. Review, GOLDSCHMIDT, Zool. Zentrbl. xi, pp. 380–382.
439. SZYMÁŃSKI, M. Contribution à l'helminthologie. Bull. Ac. Cracovie 1904, 10, pp. 733 & 734, pl. xvi.
440. TÁLIEW, W. Sur la limite des forêts et des steppes dans le district de Wálki dans le gouvernement de Charkow. Trudui Kharkov. Univ. xxxvi, pp. 3–55.
441. TANIGUCHI, N. Ueber *Filaria bankrofti* Cobbold. Centrbl. Bakter. xxxv, pp. 492–500, 3 figg.
442. TEMPÈRE, J. Les parasites internes de l'homme et des animaux domestiques. Microgr. prep. xii, 1, pp. 25–27, xii, 3, pp. 117–120, xii, 4, pp. 212–214, pls.
443. TERRIEN, F. Cysticerque sous-conjonctival. C.R. Soc. Biol. lvii, pp. 103–105, 2 figg.
444. THEOBALD, F. V. Preventive against liver fluke (*Distomum hepaticum*) in sheep. 2nd Rep. Econ. Zool. Brit. Mus. 1904, p. 133.
445. —. *Enchytræus* worms. T. c. p. 152.
THOMAS, R. A. [See HALDANE & THOMAS (182).]
446. TIRABOSCHI, G. Gli animali propagatori della peste bubbonica. I ratti e i loro ectoparassiti. Boll. Soc. zool. Ital. (2), ii, pp. 88–97.
447. TORREY, J. C. The early embryology of *Thalassema mellita* (Conn.). Ann. N. York Ac. xiv, 3, pp. 165–244, 3 pls.
448. TOULA, F. Geologische Beobachtungen auf einer Reise in die Gegend von Silistria und in die Dobrudscha im Jahre 1892. Jahrb. geol. Reichsanst. liv, pp. 1–46, 3 pls., 19 figg.

449. TRETJAKOFF, D. 'Die Bildung der Richtungskörperchen in den Eiern von *Ascaris megaloccephala*. Arch. mikr. Anat. lxx, 2, pp. 358-383, pl. xxi.
450. ——. Die Spermatogenese bei *Ascaris megaloccephala*. T. c. pp. 383-438, pls. xxii-xxiv, 1 fig.
451. TRUMBULL, J. *Allolobophora cyanea* in Ireland. Irish Natural. xiii, p. 155.
452. UDE, H. Review of MICHAELSEN, Die Geographische Verbreitung der Oligochaeten. Berlin, 1903, 186 pp., 11 pls. Zool. Zentrbl. xi, pp. 560-587.
453. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg. Verh. Ver. Hamburg. naturw. xi, pp. 1-24, 1 pl.
454. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, 2, pp. 1-359, 3 pls.
455. VALLENTIN, R. Notes on the Falkland Islands. Mem. Manchester Soc. xlviii, No. 23.
Vermes mentioned pp. 8 & 9.
456. VAN BENEDEN, E. Ou demande de nouvelles recherches sur l'organisation et le développement d'un *Phoronis*, en vue d'élucider les rapports existant entre les animaux de ce genre, les genres *Rhabdopleura* et *Cephalodiscus*, et le groupe des Enteropneustes. Bull. Ac. Belgique 1903, pp. 1216-1232.
457. VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeitschr. Ges. Erd. Berlin 1904, pp. 362-370, 11 figg.
458. VERDON, E. S. A case of Filariasis at Fez, Morocco. J. trop. Medicine vii, p. 197.
459. VERRILL, A. E. Additions to the *Turbellaria*, *Nemertina* and *Annelida* of the Bermudas with revisions of some New England genera and species. Tr. Connect. Ac. x (2), pp. 595-671, pl. lxx.
460. ——. Additions to the fauna of the Bermudas from the Yale Expedition of 1901, with notes on other species. Op. cit. xi (1), pp. 15-62, pls. i-xi.
461. ——. The Bermuda Islands. Op. cit. xi (2), pp. 413-913.
462. *VIGENER, J. Über drei kantige Bandwürmer aus der Familie der Taeniiden. Jahrb. nassau. Ver. lvi, 1903, pp. 115-177, 8 figg., and Zool. Zentrbl. xi, pp. 445 & 446.
463. VOELTZKOW, A. Bericht über eine Reise nach Ostafrika zur Untersuchung der Bildung und des Aufbaues des Riffe und Inseln des westlichen indischen Ozeans. III. Mafia und Sansibar. IV. Die Comoren. Zeitschr. Ges. Erd. Berlin 1904, pp. 274-301.
Review by MAY, Zool. Zentrbl. xi, pp. 435-437.
464. WALLACE, W. The oocyte of *Tomopteris*. Rep. Brit. Ass. 1903-1904, pp. 282-288.
465. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Denk. Ges. Jena 1904, pp. 133-214, pls. viii & 21 figg. [*Vermes*, pp. 167 & 168 ; lists of spp.]
466. WEIGELT, C. L'assainissement et le repeuplement des rivières. Mem. Cour. Ac. Belgique lxiv. [*Vermes*, pp. 514-516, figg. 79-82, 84 & 85.]

467. WELLMAN, F. C. Protozoal and entozoal infection of natives of Benguella, Angola, West Africa. J. trop. Medicine vii, p. 123.
468. —. Brief conspectus of the tropical diseases common in the highlands of West Central Africa. T. c. pp. 52–56. [A new *Filaria*.]
469. *WESENBERG-LUND, C. Studier over de Danske Soers Plankton. Specielle Del, 223 pp., Copenhagen, 1904. [English résumé.] [*Rotifera* and *Nematoda*.]
Review by ZSCHOKKE, Zool. Zentrbl. xi, pp. 680–687.
470. WILLEY, A. Littoral *Polychæta* from the Cape of Good Hope. Tr. Linn. Soc. London (2), ix, 6, pp. 255–268, pls. xiii & xiv.
— [See also CASTELLANI & WILLEY (73).]
471. WILSON, E. B. Mosaic development in the Annelid egg. Science xx, pp. 748–750.
472. WOLLEMAN, A. Ein Aufschluss im Mukronatensenon bei Roten-Kamp, nordwestlich von Königslutter. XIII. Jahresber. Ver. Braunschweig, pp. 40–42. [*Serpula*.]
473. WOLTERECK, R. Beiträge zur praktischen Analyse der Polygordius-Entwicklung nach dem "Nordsee" und dem "Mittelmeertypus." I. Der für beide Typen gleichverlaufende Entwicklungsabschnitt: vom Ei bis zum jüngsten Trochophora-Stadium. Arch. Entwicklmech. xviii, pp. 377–403, pls. xxii & xxiii, 11 figg.
474. WOLTERSTORFF, W. Beiträge zur Fauna der Tucheler Heide. Bericht über eine zoologische Bereisung der Kreise Tuchel und Schwetz im Jahre 1900. Schr. Ges. Danzig xi, 1 & 2, pp. 140–234, 1 pl., 1904.
475. WOOD, T. J. Hydatid Cyst. Lancet 1904, i, p. 29.
476. WOOD, ELVIRA. Marcellus (Stafford) limestones of Lancaster, Erie Co. N. Y. Rep. N. York Mus. lv, pp. 139–181. [*Annelida*, p. 155.]
477. WORTH, E. H. *Bilharzia hæmatobia*. Lancet 1904, i, p. 611.
478. YAKHONTOV, G. Communication de l'excursion sur le lac Baical, faite en été de l'année 1902 par G. Yakhontov. Protok. Kazan. Univ. 1902–1903, No. 212, 11 pp. [List of spp. p. 3.]
479. YATSU, N. Experiments on the development of egg fragments in *Cerebratulus*. Biol. Bull. vi, pp. 123–136, 5 figg.
ZEDERBAUER, E. [See BREHM & ZEDERBAUER (49).]
480. ZELENY, C. Studies in compensatory regulation. Science xix, p. 215.
481. ZIMMERMANN, A. Untersuchungen über tropische Pflanzenkrankheiten. I. Ber. Land. Forstw. Deutsch-Ostafrika ii, 1904, pp. 11–36, pls. i–iv.
482. ZSCHOKKE, F. Review of VOIGT, Die Rotatorien und gastrotrichen der Umgebung von Plön. Forschber. Plön xi, 1904, pp. 1–180, 7 pls., and Zool. Zentrbl. xi, pp. 373–378.
483. —. Review of LAUTERBORN, Die Formenkreis von *Anurea cochlearis*. Ein Beitrag zur Kenntnis der Variabilität bei Rotatorien. I. Morphologische Gliederung des Formenkreises. Verh. Ver. Heidelb. vi, 5, 1900, 442–448 pp., pl. x. II. Diecyklische temporale variation von *Anurea cochlearis* vii, 4, 1903, pp. 529–621. [See Zool. Rec. XL, VERMES, No. 234.]
Zool. Zentrbl. xi, pp. 786–793.

484. [ZSCHOKKE, F.] Die Darmcestoden der amerikanischen Beuteltiere. Centrbl. Bakter. xxxvi, pp. 51-61, 1 pl.

II. SUBJECT-INDEX.

VERMES.

GENERAL SUBJECT (Vermes collectively or more than one division).

[The following memoirs relate to the general subject or are collective:—BOVERI (40, 41), CAULLERY & MESNIL (77), GINESTE (164), HUBRECHT (204), HUDLESTON (205), LAUTERBORN (244), LUTHER (285), MICHAELSEN (306).]

Relationships to other invertebrate phyla, HUBRECHT (204).

Affinities of worms discussed, MICHAELSEN (306).

†Origin of halolimnic fauna of Lake Tanganyika, HUDLESTON (205).

Affinities of *Actinomyxide* to *Vermes*, CAULLERY & MESNIL (77).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (164).

Constitution of chromatin in the nucleus, BOVERI (40, 41).

Subterranean fauna, Puits de Padirac, VIRÉ, C.R. Ac. Sci. cxxxviii, p. 827.

Finland, plankton collections, LUTHER (285).

Upper Rhine, collections, LAUTERBORN (244).

ANNELIDA.

GEPHYREA.

[The following memoirs relate to *Gephyrea*:—GEROULD (155, 156), HÉRUBEL (194, 195), IKEDA (207), KUNSTLER & GRUVEL (238), LADREYT (239, 240), RETZIUS (371), TORREY (447), VERRILL (460, 461).]

GENERAL BIOLOGY.

On the so-called "urns" in *Sipunculus*, they are not phagocytes, and not parasites, LADREYT (239).

Three forms of pigment in *Sipunculus nudus*, LADREYT (240).

Early embryology of *Thalassema mellita*, TORREY (447).

On the development of the body cavity elements in *Sipunculus*, KUNSTLER & GRUVEL (238).

Development of *Sipunculus nudus*, GEROULD (155).

Embryonal development and its homologue, GEROULD (156).

DISTRIBUTION.

Scandinavian forms, morphology, HÉRUBEL (194, 195).

Japan, n. spp., IKEDA (207).

Bermudas, n. spp., VERRILL (460).

Bermudas, collections, VERRILL (461).

SYSTEMATIC.

- Aspidosiphon truncatus*, *A. steenstrupii*, Japan, IKEDA, J. Coll. Tokyo xx, 4, pp. 38, 40, figg. 66 & 67.
- A. misakiensis*, p. 41, figg. 9, 68-72, *A. uniscutatus*, p. 43, figg. 10, 73-77, *A. angulatus*, p. 45, figg. 11, 78-80, *A. spinalis*, p. 47, figg. 12, 81-85, Japan, IKEDA, t. c.; *A. spinulosum*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 670, **n. spp.**
- Bonellia minor*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 72, figg. 23, 101 & 102.
- B. miyajimai*, p. 73, *B. misakiensis*, p. 74, figg. 24, 103-105, Japan, IKEDA, t. c. **n. spp.**
- Clæosiphon japonicum*, Japan, IKEDA, t. c. p. 49, figg. 13, 86-89, **n. sp.**
- Dendrostoma blandum*, *D. signifer*, pp. 53-57, figg. 14 & 15, 90 & 91, Japan, IKEDA, t. c.
- D. minor*, Japan, IKEDA, t. c. p. 57, figg. 16, 92-95, **n. sp.**
- Golfingia elongata*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 670, **n. sp.**
- Phascolion rectus*, p. 15, figg. 45-49, *P. artificiosus*, p. 18, figg. 6, 50-55, Japan, IKEDA, J. Coll. Tokyo xx, 4, **n. spp.**
- Phascolosoma vulgare*, *P. gouldii*, embryology, GEROULD, Mark Anniv. Vol. pp. 439-452, pl. xxxii; *P. strombi*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 11, pl. iv, figg. 1-9.
- P. nigrum*, p. 3, figg. 1, 25-27, *P. japonicum*, p. 5, figg. 2, 28 & 29, *P. misakianum*, p. 7, figg. 3, 30-33, *P. okinoseanum*, p. 9, figg. 4, 34-38, *P. owstoni*, p. 12, figg. 5, 39-44, Japan, IKEDA, J. Coll. Tokyo xx, 4, **n. spp.**
- Phymosoma onomichianum*, p. 26, figg. 7, 56-58, *P. nahense*, p. 29, figg. 8, 59-62, Japan, IKEDA, t. c. **n. spp.**
- Priapulus caudatus*, Scandinavia, varieties; localities where found; morphology, HÉRUBEL, Bull. Soc. zool. France xxix, 5, pp. 100-109, 2 figg., pp. 126-129.
- Thalassema kokotoniense*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 60, fig. 17; *T. mellita*, early embryology and cell lineage, TORREY, Ann. N. York Ac. xiv, 3, pp. 165-244, 3 pls.
- T.*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 40, pl. v, fig. 9; *T. owstoni*, p. 62, figg. 18, 96 & 97, *T. tanioides*, p. 63, *T. elegans*, p. 65, *T. gogoshimense*, p. 66, fig. 19, *T. mucosum*, p. 68, figg. 20 & 98, *T. fuscum*, p. 69, figg. 21 & 99, *T. inansense*, p. 71, figg. 22 & 100, Japan, IKEDA, J. Coll. Tokyo xx, 4, **n. spp.**
- Sipunculus nudus*, embryonal development and its homologue, GEROULD, Mark Anniv. Vol. pp. 439-452, pl. xxxii; *S. nudus*, development, GEROULD, Amer. Natural. xxxviii, p. 493; *S. nudus*, "urns," LADREY, C.R. Ac. Sci. cxxxix, 2, pp. 370 & 371; *S. nudus*, three forms of pigment, LADREY, C.R. Soc. Biol. lvi, pp. 850-852; *S. nudus*, body cavity elements, KUNSTLER & GRUVEL, Pr-verb. Soc. Sci. Bordeaux 1896, pp. 57-60; *S. cumanensis*, Japan, IKEDA, J. Coll. Tokyo xx, 4, p. 32, fig. 63.
- S. amaniensis*, Japan, IKEDA, t. c. p. 36, figg. 64 & 65, **n. sp.**

POLYCHAETA.

[The following memoirs relate to *Polychæta*:—ALLEN (7, 8), ASHWORTH (14), BOHN (30-34), BOLTON (35), BRASIL (44-46), BROWNE (54), BULLOT (58), CARAZZI (70), CAULLERY & MESNIL (79), EHLERS (130), FAUVEL (137, 138), FOX (147), FOX-STRANGWAYS (148), GIARD (159, 160), GILSON (163), GIRTY (165), GRAVIER (172), HOLM (198), HOLMES (200), HORST

(202), HUBRECHT (203, 204), IWANOW (213), JOHNSON (220), JORDAN (222), JUKES-BROWNE (224), KOROTNEFF (234), LÉGER (253, 254), LINVILLE (269), LOMMEN (273), MADSEN (288), MARTIN (296), MAXWELL (300), MONTGOMERY (310), MOORE & BUSCH (317), MOORE (313, 314), MUNTHE (326), NOBRE (333, 334), NUSBAUM (337), ORLANDI (340), PARKINSON (345), REMEŠ (368), RETZIUS (371), RICHE (373), ROVERETO (384), ROWE (385), SCHEPOTIEFF (398, 399), SCHRÖDER (405), SOLLMANN (425), SOULIER (426), VERRILL (459-461), WALLACE (464), WALTHER (465), WEIGELT (466), WILLEY (470), WILSON (471), WOOD (476), ZELENY (480).]

GENERAL BIOLOGY.

Habits, anatomy, histology, development and parasites of *Arenicola*, ASHWORTH (14).

Anatomy, metamerism of the nervous system in *Arenicola cristata*, LOMMEN (273).

Histology, digestive apparatus *Polychæta*, BRASIL (45).

Otocysts, FAUVEL (138).

Digestive apparatus, BRASIL (45).

Comparative study of muscular tonus, MAXWELL (300).

Morphology of *Chaetopterus*, GRAVIER (172).

Structure of the setæ-pouches, SCHEPOTIEFF (398).

Oocyte of *Tomopteris*, WALLACE (464).

Sense organs of *Eunice viridis* (Palolo worm), SCHRÖDER (405).

†Anatomy of n. spp., ROVERETO (384).

A new generic type of *Polygordida*, MOORE (316).

Affinities and systematic position, HUBRECHT (204).

Natural history of some tube-forming species, LINVILLE (269).

†Survey, collections, HOLMES (200).

Structural changes of ova in anisotonic solutions and saponin, SOLLMANN (425).

Development and structure of the larva of *Paragordius*, MONTGOMERY (310).

Embryology and cytology of the egg of *Myzostoma glabrum*, CARAZZI (70).

Artificial parthenogenesis and regular segmentation in *Ophelia*, BULLOT (58).

Movements of *Hediste diversicolor*, BOHN (30).

Respiratory movements, BOHN (33, 34).

Regeneration, IWANOW (213).

Regeneration experiments, NUSBAUM (337).

Regeneration of the head in *Clymene* spp., ORLANDI (340).

Compensatory regulation in *Hydroides* and *Apomatus*, ZELENY (480).

DISTRIBUTION.

†Tomsk, collections, POLÉNOFF (352).

†Krakau, Devonian species, GÜRICH (178).

†England, upper chalk, Cretaceous forms, JUKES-BROWNE (224).

†Lancashire coal measures, spp. found, BOLTON (35).

†Yorkshire, white chalk spp. ROWE (385).

†Scarborough, oolitic and Cretaceous forms, FOX-STRANGWAYS (148).

†Cornwall, north coast forms, FOX (147).

Plymouth, n. sp., ALLEN (8).

Lake Baical, collections, KOROTNEFF (234).

†Gotland, list of Silurian forms, MUNTHE (326).

Cape de la Hague, a new parasite on *Polycirrus hematodes*, CAULLERY & MESNIL (79).

- Pas-de-Calais, River Ambleteuse, fauna, n. sp., GIARD (161).
 +South Germany, collections, PARKINSON (345).
 +Solenhofen, fossil fauna, WALTHER (465).
 +Eastern Bohemia, chalk fossils, JAHN (215).
 +Corniche Alps, paleozoic fossils, D'OSSAT (342).
 +Bolderberg, collections, DEWALQUE (124).
 +Dalmatia, Eocene fauna, DAINELLI (111).
 +Silistria, collections, TOULA (448).
 +Grès Vosgien, Epinal, fossil fauna, NOËL (335).
 Cette, collections, SOULIER (426).
 North and South Portugal, marine fauna, synonymy, bibliography, NOËRE (333, 334).
 +East-Greenland, Jurassic *Serpulæ*, MADSEN (288).
 +Kansas, lower coal measures, BEEDE & ROGERS (23).
 +Tennessee and Kentucky forms from the Silurian and Devonian Limestones, FOERSTE (144).
 +Maryland, n. sp., MARTIN (296).
 +Colorado, Carboniferous forms, GIRTY (165).
 Massachusetts, n. sp., MOORE (314).
 Massachusetts, 2 n. spp., MOORE (313).
 California, n. gen. & n. sp., JOHNSON (220).
 California, n. spp., MOORE (315).
 Senegal, spp., FAUVEL (137).
 Cape of Good Hope, littoral forms, WILLEY (470).
 Malay, palolo and wawo worms, not identical, HORST (202).
 Hawaii, n. sp., JOHNSON (220).
 Bermudas, n. spp., VERRILL (459).
 Bermudas, collections, VERRILL (460).
 Japan, n. spp., MOORE & BUSCH (317).
 +New South Wales, Cretaceous forms, n. spp., ETHERIDGE (133).
 New Zealand, n. spp., EHLERS (130).

SYSTEMATIC.

- Ammotrypane aulogaster*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 9, pl. iii, figg. 6-10.
Amphiglene mediterranea, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
Amphitrite ornata, natural history, LINVILLE, Mark Anniv. Vol. pp. 227-235.
Aphroditiide, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186; *A. aculeata*, physiology and morphology of the digestive organs, JORDAN, Zeitschr. wiss. Zool. lxxviii, pp. 165-195, pl. x.
Arabella maculosa, Bermuda, VERRILL, Tr. Connect. Ac. x (2), p. 651, n. sp.
Arenicola, habits, anatomy, histology, development and parasites, ASHWORTH, P. Liverp. biol. Soc. xviii, pp. 209-326, 7 pls.; *A. cristata*, metamerism of the nervous system, LOMMEN, Biol. Bull. vi, pp. 321 & 322; *A. marina*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 9, pl. iii, figg. 11-20.
Aricia setosa, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 651; *A. chevalieri*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 83, figg. 23-28 : n. spp.
Armandia intermedia, Casamance River, Senegal, anatomy, FAUVEL, t. c. p. 86, figg. 29 & 30, n. sp.
Audouinia tentaculata, Luc-sur-Mer, parasitised by a coccid, *Angeiocystis audouinii*, n. sp., BRASIL, C.R. Ac. Sci. cxxxix, 2, pp. 645 & 646.
Autolytus (Proceræa) simplex, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 630, n. sp.

- Axiothella* **n. subgen.** for *A. catenata*, VERRILL, t. c., p. 657.
- Brada villosa*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, pp. 7-11.
- Branchiomma suspiciens*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 62, pl. ix, figg. 1-6, **n. sp.**
- Branchiosyllis lamellifera*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 624, **n. sp.**
- Carobia microphylla* (**n. n.** for *Eulalia* Schmarda) New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 16, pl. ii, figg. 8 & 9; *C. ochracea*, New Zealand, EHLERS, t. c., p. 15, pl. ii, figg. 5-7, **n. sp.**
- Chaetopterus*, morphology, GRAVIER, C.R. Ac. Sci. cxxxix, 2, pp. 545 & 546.
- Chrysopetalum elegans*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 668, **n. sp.**
- Cirratus*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4, pp. 254-261. [German résumé, pp. 307-309.]
- C. spirabranchus*, p. 492, pl. xxxviii, figg. 26 & 27; *C. luxuriosus*, p. 493, figg. 28-31, California, structure, MOORE, P. Ac. Philad. lvi, *C. (Audouinia) capillaris*, p. 653, *C. websteri*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Clymene collaris*, regeneration of the head, ORLANDI, Atti Soc. Ligustica xiv, p. 161, figg. A & B; *C. palermitana*, regeneration of the head, ORLANDI, t. c. p. 162, fig. c.
- C. monilis*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 89, figg. 31-41, **n. sp.**
- Clymenella* (*Axiothella*) *somersi*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 658, **n. sp.**
- C. insecta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 54, pl. vii, figg. 16-19, pl. viii, figg. 1-5, **n. sp.**
- Dasychone lucullana*, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
- Desmosyllis* **n. gen.** for *D. longisetosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 626 & 635, **n. sp.**
- Diopatra neapolitana*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 62, figg. 1 & 2; *D. cuprea*, natural history, LINVILLE, Mark Anniv. Vol. pp. 227-235.
- D. californica*, California, structure, MOORE, P. Ac. Philad. lvi, 2, p. 484, pl. xxxvii, figg. 1-9, **n. sp.**
- Drieschia pellucida*, Massachusetts, MOORE, op. cit. lv, 3, p. 794, pl. lv, **n. sp.**
- Euchone alicaudata*, Japan, MOORE & BUSCH, op. cit. lvi, p. 165, pl. xi, fig. 14-16, pl. xii, fig. 43, **n. sp.**
- Euclymene* **n. n.** for *E. coronata* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. x(2), p. 655.
- Eulalia megalops*, Bermudas, VERRILL, t. c. p. 601, **n. sp.**
- Eunice*, **spp.**, structure of setæ-pouches, SCHEPOTIEFF, Zeitschr. wiss. Zool. lxxvii, pp. 586-605, pl. xxvi-xxviii; *E. viridis* (Palolo worm) sense organs, SCHRÖDER, Zeitschr. wiss. Zool. lxxix, pp. 132-150.
- E. biannulata*, California, structure, MOORE, P. Ac. Philad. lvi, p. 487, pl. xxxvii, figg. 10-18, pl. xxxviii, fig. 42, **n. sp.**
- Euphrosyne capensis*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 256, figg. 1-3.
- Eupolymnia* **n. n.** (with **n. subgen.** *Polymniella*) for **n. sp.** *E. aurantiaca*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 661.
- Eurymedusa picta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 21, pl. iii, figg. 5-9.
- Eusyllis* (**n. subgen.** *Synsyllis*) *viridula*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 622 & 635, **n. sp.**
- Exotokas brevipēs*, Cete, synonymy, anatomy, SOULIER, Mem. Ac. Montpellier. (2) iii, p. 345, fig. 7.

- Flabelligera lingulata*, p. 47, pl. vii, figg. 1-5, *F. semiannulata*, p. 49, figg. 6-10, New Zealand, EHLERS, Abh. Ges. Gotting. iii, **n. spp.**
- Glycera africana*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 75, figg. 14-17; *G. alba*, spermatozoa, male reproductive organs, RETZIUS, Biol. Untersuch. xi, p. 7, pl. 1, figg. 8-12.
- Glycinde*, spermatozoa, RETZIUS, t. c. p. 7, pl. 1, figg. 13-18.
- Goniada (Glycinde) dorsalis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 38, pl. v, figg. 12-17, **n. sp.**
- Grubea pusilla*, *G. limbata*, Cette, anatomy, synonymy, SOULIER, Mem. Ac. Montpell. (2) iii, pp. 333-342, figg. 4 & 5.
- Grubeosyllis n. n.* (= *Grubea* Quatr.) *nitidula*, *G. rugulosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 629-633, **n. spp.**
- Haplosyllis cephalata*, p. 613, *H. palpata*, p. 615, Bermudas, VERRILL, t. c. **n. spp.**
- Hediste diversicolor*, movements, BOHN, C.R. Soc. Biol. lvii, pp. 297 & 298, 3 figg.
- Hemilepidia erythrotania*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2), ix, 6, p. 258, figg. 6-26.
- Hemisyllis n. gen.* for *H. dispar n. sp.*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 619.
- Heteromorphysa n. gen.* for *H. tenuis n. sp.*, Bermudas, VERRILL, t. c. p. 637.
- Hypsicomus lyra*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 161, pl. xi, figg. 7-13, pl. xii, fig. 42, **n. sp.**
- Lagis koreni*, digestive apparatus, BRASIL, Arch. Zool. exp. Hist. Nat. (4) ii, xxxii, pp. 91-255.
- Laonome ceratodaula (n. n. for Sabella Schmarda)* New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, p. 64.
- L. tridentata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 164, pl. xii, fig. 44, **n. sp.**
- Leodice elegans*, p. 640, *L. stigmatura*, p. 641, *L. concinna*, p. 643, *L. tenuicirrata*, p. 643, *L. unifrons*, p. 644, *L. margaritacea*, p. 644, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Lepidonotus polychroma*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 7, pl. i, figg. 1-6; *L. squamatus*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, fig. 1-6; *L. clava semitectus*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 256, fig. 4.
- Leprea haplochæta*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 59, pl. viii, figg. 13-18, **n. sp.**
- Lipobranchus capensis*, Cape of Good Hope, structure, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 266, figg. 23 & 24, **n. sp.**
- Loimia medusa*, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 94, figg. 43-45.
- L. bermudensis*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 664; *L. viridis*, Massachusetts, MOORE, P. Ac. Philad. lv, p. 723, pl. xl, figg. 11-14 : **n. spp.**
- Lumbriconereis*, structural changes of ova in anisotonic solutions and saponin, SOLLMANN, Amer. J. Physiol. xii, pp. 99-115, 46 figg.; *L. sphærocephala* (= *Notocirrus Schmarda*) p. 33, pl. v, figg. 3-11, *L. brevicirra*, p. 35, pl. iv, figg. 13-20, pl. v, figg. 1 & 2, New Zealand, EHLERS, Abh. Ges. Gotting. iii.
- L. erecta*, California, structure, MOORE, P. Ac. Philad. lvi, p. 490, pl. xxxvii, figg. 19-22, pl. xxxviii, figg. 23-25; *L. nasuta*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 651 : **n. spp.**
- Lycastis hawaiiensis*, Hawaii, JOHNSON, Mark Anniv. Vol. 1903, p. 210, figg. 11-13, 17-23, **n. sp.**
- Lycastoides n. gen.* for *L. alticola n. sp.*, Lower California, JOHNSON, t. c. p. 212, figg. 14-16, 24-27.

- Lysidice bilobata*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 645, **n. sp.**
- Maldane disparidentata*, California, structure, MOORE, P. Ac. Philad. lvi, p. 494, pl. xxxviii, figg. 32-35, **n. sp.**
- Maldanopsis* **n. gen.** for *M. elongata*, VERRILL, Tr. Connect. Ac. x (2), p. 659.
- Murphysa corallina*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 31, pl. iv, figg. 8-12.
- M. purcellana*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2), ix, 6, p. 263, fig. 17; *M. regalis*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 636 : **n. spp.**
- Myzostoma glabrum*, embryology and cytology of the egg, CARAZZI, Monit. Zool. ital. xv, pp. 62-78, pl. iv, pp. 87-100.
- Neanthes capensis*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 261, figg. 9 & 10, pl. xiv, **n. sp.**
- Nematonereis hebes*, p. 647, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. sp.**
- †*Neomicroborbis* **n. gen.** for *N. bavaricus*, *N. obretitus*, *N. zitteli*, Kressenberg, ROVERETO, Pal. Ital. x, pp. 50 & 51, pl. iv, figg. 27-29, **n. spp.**
- Nephthys* sp. male reproductive glands, RETZIUS, Biol. Untersuch. xi, p. 5, pl. i, figg. 1-7.
- N. lyrochæta*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 72, figg. 9-13, **n. sp.**
- Nereidiidae*, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186; *Nereis*, comparative study of muscular tonus, MAXWELL, Science xix, p. 249; *Nereis* spp. structure of setæ-pouches, SCHEPOTIEFF, Zeitschr. wiss. Zool. lxxvii, pp. 586-605, pls. xxvi-xxviii; *N. australis*, New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, pl. 26, pl. iii, figg. 16-20, pl. iv, figg. 1 & 2; *N. cultifera*, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
- N. gravieri*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 66, figg. 3-8; *N. arenaceodentata*, Massachusetts, MOORE, P. Ac. Philad. lv, p. 720, pl. xl, figg. 1-10; *N. ruficeps*, p. 24, pl. iii, figg. 10-15, *N. cricognatha*, p. 29, pl. iv, figg. 3-7, New Zealand, EHLERS, Abh. Ges. Gotting. iii; *N. limnicola*, Lake Merced, JOHNSON, Mark Anniv. Vol. 1903, New York, p. 208, figg. 1-10 : **n. spp.**
- Nerine cirratulus*, regeneration, NUSBAUM, Bull. Ac. Cracovie 1904, 9, pp. 401-409.
- N. perrieri*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 79, figg. 18-21, **n. sp.**
- Nicolea modesta*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 663, **n. sp.**
- Notomastus latericius*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 10, pl. iii, figg. 21-23.
- Odontosyllis enopla*, *O. nitidula*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), pp. 627 & 628, **n. spp.**
- Oncoscolex dicranochaetus* (= *O. homochaetus* Schmarda), New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 51, pl. vii, figg. 11-15.
- Ophelia* [probably **n. sp.** but unnamed], artificial parthenogenesis and regular segmentation, BULLOT, Arch. Entwicklmech. xviii, pp. 161-170, 13 figg.; *O.*, artificial parthenogenesis and regular segmentation, BULLOT, Univ. Calif. Publ. Physiol. i, 19, pp. 165-174, 8 figg.
- Ophiodromus vittatus*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 8, pl. ii, figg. 12-17.
- Opisthosyllis nuchalis*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 620, **n. sp.**
- Pallasia murata*, Plymouth, ALLEN, J. Mar. Biol. Ass. vii, 2, pp. 299-304, pl. x, **n. sp.**
- Paragordius varius*, development and structure of the larva, MONTGOMERY, P. Ac. Philad. lvi, 3, pp. 738-755, pls. xlix & l.

- Paramorphysa obtusa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 647, **n. sp.**
- Parmenis capensis*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 258, figg. 7 & 8, 27-29, **n. sp.**
- Pectinaria (Lagis) australis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 56, pl. viii, figg. 6-12; *P. regalis*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 38, pl. viii, figg. 6 & 7, **n. spp.**
- Phyllochætopterus*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4, pp. 254-261. [German résumé, pp. 307-309.]
- Phyllodocidæ*, respiratory movements, BOHN, C.R. Soc. Biol. lvi, pp. 185 & 186.
- Phyllodoce bermudæ*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 600, **n. sp.**
- Physalidonotus* **n. gen.** for *Aphrodite squamosa* Quatrefages, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 9.
- +*Placostegus luteolus*, Kressenberg, ROVERETO, Pal. Ital. x, p. 40, pl. iv, fig. 20, **n. sp.**
- Pæcilochætus*, anatomy, ALLEN, Quart. J. Micr. Sci. xlviii, 1904, pp. 79-151, pls. vi-xii.
- Polycirrus caliendrum*, p. 363, fig. 10, *P. aurantiacus*, p. 369, fig. 11, *P. denticulatus*, p. 370, fig. 12, Cete, synonymy, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii.
- P. corallicola*, *P. pennulifera*, *P. luminosus*, pp. 665 & 666, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Polydora*, regeneration, IWANOW, Protok. St. Peterb. Obshch. xxxv, 1904, 4 [German résumé, pp. 307-309] pp. 254-261; *P. monilaris*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 43, pl. vi, figg. 5-14, **n. sp.**
- Polygordidæ*, a new generic type, MOORE, Amer. Natural. xxxviii, pp. 519 & 520.
- Polynoe macrolepidota*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 8, pl. 1, figg. 7-9; *P. scolopendrina*, Cape of Good Hope, anatomy, WILLEY, Tr. Linn. Soc. London (2) ix, 6, p. 257, figg. 5-25.
- Pomatocerus strigiceps*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 67, pl. ix, figg. 11-19.
- P. auritubis*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 174, pl. xi, fig. 20, pl. xii, figg. 33-37, **n. sp.**
- Potamilla laciniosa*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 66, pl. ix, figg. 7-10, **n. sp.**; *P. casamancensis*, Casamance River, Senegal, anatomy, FAUVEL, Bull. Soc. Normand. (5) v, p. 101, figg. 46-53, **n. sp.**; *P. acuminata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 159, pl. xi, figg. 3-6, pl. xii, fig. 41, **n. sp.**
- Protodrilus symbioticus*, River Ambleteuse, Pas-de-Calais, GIARD, C.R. Soc. Biol. lvi, pp. 295-298, fig. 2, **n. sp.**
- Protothelpus* **n. gen.** for *P. tenuis* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 663.
- Protula geniculata*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 168, pl. xi, figg. 17 & 18, pl. xii, fig. 38, **n. sp.**; +*P. pseudolonganon*, p. 47, *P. septaria*, p. 47, pl. ii, fig. 5, *P. vincenti*, Dieghem, p. 48, pl. iv, fig. 23, *P. xeniolum*, Sassello, p. 48, pl. ii, fig. 3, ROVERETO, Pal. Ital. x, **n. spp.**
- Pterocirrus brevicornis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 17, pl. ii, figg. 10-12, **n. sp.**
- Pygospio elegans*, Cete, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii, p. 320, fig. 1.
- Sabella japonica*, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, p. 157, pl. xi, figg. 1 & 2, pl. xii, figg. 39 & 40, **n. sp.**
- Sabellaria spinulosa*, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 9, pl. iii, figg. 1-5.

- Scoloplos cylindrifera*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 45, pl. vi, figg. 16-19, **n. sp.**
- +*Serpula athesiana*, Verona, p. 7, pl. ii, fig. 3, *S. cariosa*, p. 7, pl. iv, fig. 13, *S. confecta*, Grignon, p. 9, pl. iii, fig. 2, *S. coralliophila*, Sassello, p. 9, pl. i, fig. 6, *S. fiosa*, Loire et Cher, p. 13, pl. iv, fig. 14, *S. herpestica*, p. 15, pl. ii, fig. 15, *S. remiorum*, p. 18, pl. iv, fig. 25, *S. sabatia*, Savona, p. 19, pl. iii, fig. 5, *S. supernecta*, p. 21, pl. iv, fig. 22, *S. (Pomatocerus) complicata*, p. 37, pl. iv, fig. 24, *S. saccoi*, p. 38, pl. i, fig. 1, *S. vivida*, p. 39, pl. iv, fig. 18, ROVERETO, Pal. Ital. x, **n. spp.**
- Spermosyllis torulosa*, Cette, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii, p. 342, fig. 6.
- Sphærosyllis hystrix*, Cette, anatomy, SOULIER, t. c. p. 325, figg. 2 & 3.
- Spio aequalis*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 40, pl. v, figg. 18-21, pl. vi, figg. 1-4, **n. sp.**
- +*Spirorbis calvertensis*, Maryland, MARTIN, Maryland geol. Surv. 1904, p. 430, pl. cxviii, figg. 18, **n. sp.**; *S. argutus*, p. 175, figg. a, b, *S. foraminosus*, p. 176, figg. b, c, d, e, *S. bellulus*, p. 177, figg. f, g, h, *S. dorsatus*, p. 178, Japan, MOORE & BUSCH, P. Ac. Philad. lvi; +*S. catagraphus*, p. 53, pl. iv, fig. 2, *S. lovisatoi*, p. 60, fig. 1, *S. revianii*, p. 60, fig. 1 a & b, ROVERETO, Pal. Ital. x, **n. spp.**
- Stauronereis n. n.* (= *Anisoceras* Gr.), for *S. melanops*, p. 648, *S. erythrops*, p. 649, *S. polydonta*, p. 650, Bermudas, VERRILL, Tr. Connect. Ac., **n. spp.**
- Sthenelais semitecta*, New Zealand, anatomy, EHLERS, Abh. Ges. Gotting. iii, p. 10, pl. i, figg. 10-12, pl. ii, figg. 1-4, **n. sp.**
- S. setosa*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 666, **n. sp.**
- Streblosoma (n. subgen. Eugrymæa) polybranchia n. sp.*, Bermudas, VERRILL, t. c. p. 662.
- Syllis closterobranchia*, New Zealand, EHLERS, Abh. Ges. Gotting. iii, p. 19, pl. iii, figg. 1-4; *S. gracilis*, p. 349, fig. 8, *S. cornuta*, p. 357, fig. 9, Cette, synonymy, anatomy, SOULIER, Mem. Ac. Montpell. (2) iii.
- S. (Typosyllis) corallicola*, p. 603, *S. grandigularis*, p. 604, *S. (Typosyllis) catenula*, p. 604, *S. jugularis*, p. 606, *S. (Typosyllis) diplomorpha*, p. 606, *S. annularis*, p. 608, *S. cincinnata*, p. 609, *S. exigua*, p. 611, *S. (Ehlersia) nitida*, p. 612, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Terebella (Schmardanella) californica*, California, structure, MOORE, P. Ac. Philad. lvi, pp. 496-401, pl. xxxviii, figg. 36 & 37, **n. sp.**
- Tomopteris*, oocyte, WALLACE, Rep. Brit. Ass. 1903-1904, pp. 282-288.
- Trypanosyllis attenuata*, p. 615, *T. fertilis*, p. 616, *T. tenella*, p. 617, Bermudas, VERRILL, Tr. Connect. Ac. x (2), **n. spp.**
- Vermilia ctenophora*, p. 169, pl. xii, figg. 21-25, *V. pluriannulata*, p. 171, pl. xi, fig. 19, pl. xii, figg. 26-32, 45, Japan, MOORE & BUSCH, P. Ac. Philad. lvi, **n. spp.**

OLIGOCHÆTA.

[The following memoirs relate to *Oligochæta* :—APATHY (11), BORTOLLOTTI (37), BOVARD (39), BRETSCHER (51, 52), CAJAL (63), CAULLERY & MESNIL (78), COGNETTI (92-99), DITLEVSEN (126), ENTZ (132), FAUVEL (139), GOLDSCHMIDT (166), GUNGL (176), HANEL (185), HARPER (186), HOLMGREN (201), HUBRECHT (203), ISSEL (209), KORSCHULT (235), MALAQUIN (290), MICHAELSEN (306, 307), MOREIRA (318), MORGAN (321), NUSBAUM (338), PIERANTONI (351), RAYMOND & FULLER (365), REEKER (366), ROSA (377, 378, 379), SANDOR (394), SCHNEE (401), SMITH & BARRETT (422), THEOBALD (445), TRUMBULL (451), UDE (452), VERRILL (461).]

GENERAL BIOLOGY.

- Morphology : head, as metamere, MALAQUIN (290).
 Anatomy and histology of the blood system, GUNGL (176).
 Blood flow in *Diplocardia Communis*, SMITH & BARRETT (422).
 On the existence of a tubular apparatus in the nervous tissue of the earthworm, CAJAL (63).
 Psychology, HANEL (185).
 Distribution of sense organs in *Microscolex elegans*, BOVARD (39).
 Affinities and systematic relationships, HUBRECHT (203).
Actinomyxide as parasites of *Tubificide*, CAULLERY & MESNIL (78).
 Variation and correlation, *Lumbricus*, dimensions and number of somites, RAYMOND & FULLER (365).
 Roots of garden plants damaged by *Enchytræus* worms, at Nottingham, THEOBALD (445).
 Regeneration in *Enchytræide*, NUSBAUM (338).
 Regeneration, MORGAN (321).
 Regulation in *Stylaria lacustris*, HARPER (186).
 Double formations in *Lumbricidæ*, KORSCHOLT (285).
 Development of earthworms, REEKER (366).
 Faunistic, ENTZ (132).

DISTRIBUTION.

- Geographical distribution, UDE (452).
 Ireland, *Allolobophora cyanea*, TRUMBULL (451).
 Switzerland, fauna, localities, lists, BRETSCHER (51).
 Switzerland, n. spp., BRETSCHER (52).
 Italy, n. spp., COGNETTI (92, 94).
 Italy, n. sp., *Allolobophora*, ROSA (379).
 Bologna, earthworms, BORTOLOTTI (37).
 Gulf of Naples, n. spp., PIERANTONI (351).
 Modena, n. sp., *Allolobophora*, ROSA (379).
 Modena, n. spp., ISSEL (209).
 Modena, cave forms, n. spp., COGNETTI (99).
 Ecuador, n. spp., COGNETTI (96).
 Costa Rica, n. spp., COGNETTI (93, 97).
 Brazil, lists of spp. with characters [no plates], MOREIRA (318).
 Chili, n. sp., COGNETTI (98).
 Patagonia, n. sp., ROSA (377).
 Bermudas, VERRILL (461).
 Ceylon, n. spp., MICHAELSEN (307).
 Ceylon, Earthworms, *Spolia Zeylan.* i, 4, pp. 113 & 114.
 Central Ceylon, n. sp., MICHAELSEN (307).

SYSTEMATIC.

- Oligochæta* of Ceylon, *Spolia Zeylan.* i, 4, pp. 113 & 114.
Allolobophora cyanea, Ireland, TRUMBULL, Irish Natural. xiii, p. 155 ;
A. subrubricunda, *A. terrestris*, *A. trapezoides*, double formations,
 KORSCHOLT, Zool. Jahrb. Suppl. vii, 1904, pp. 257-300, 2 pls.
A. spelæa, Italy, anatomy, ROSA, Atti Soc. Modena (4) iv, 35, pp. 36-39 ;
A. (Eophila) nematogena, Modena, anatomy, ROSA, op. cit. (4) v, 36,
 p. 11 : n. spp.
Andiodrilus biolleyi, Costa Rica, COGNETTI, Boll. Mus. Torino xix, No. 462,
 p. 4, n. sp.

- Aptodrilus* **n. gen.** for *A. excelsus*, *A. festæ*, *A. ruvidus*, **n. spp.**, Ecuador, COGNETTI, t. c. No. 474, p. 16, **n. spp.**
- Bryodrilus sulphureus*, Switzerland, BRETSCHER, Rev. Suisse Zool. xii, p. 262, **n. sp.**
- Criodrilus alfari*, Costa Rica, COGNETTI, Boll. Mus. Torino, No. 478, p. 4, **n. sp.**
- Dichogaster saliens*, p. 13, fig. 5, *D. parva*, p. 15, Ceylon, MICHAELSEN, SB. Bohmisch. Ges. 1903, xl.
- D. hilaris*, Costa Rica, COGNETTI, Boll. Mus. Torino xix, No. 462, p. 2; *D. andina*, Ecuador, COGNETTI, t. c. No. 474, p. 4 : **n. spp.**
- Diplocardia communis*, Illinois, blood flow and vascular system, SMITH & BARRETT, Science xix, p. 216.
- Diporochata profuga*, Ecuador, COGNETTI, Boll. Mus. Torino xix, No. 474, p. 4, **n. sp.**
- Eisenia fetida*, Bermudas, VERRILL, Tr. Connect. Ac. xi (2), p. 846, fig. 236.
- Enchytræideæ* damaging roots of garden plants, THEOBALD, 2nd Rep. Econ. Zool. 1904, p. 152; *Enchytræideæ* of Switzerland, BRETSCHER, Biol. Centrbl. xxiv, pp. 501-513.
- Eremodrilus chilensis*, Chili, COGNETTI, Bull. Mus. Torino xix, No. 481, 2 pp., **n. sp.**
- Eutrigaster* **n. gen.** for *E. orædivitis* **n. sp.**, Costa Rica, COGNETTI, t. c. No. 478, p. 2.
- Fridericia ratzelei*, regeneration, NUSBAUM, Arch. polon. ii, 3, pp. 233-258, figg. 2-13.
- F. cognetti*, *F. bedoti*, Switzerland, BRETSCHER, Rev. Suisse Zool. xii, pp. 264-266; *F. paroniana*, *F. viridula*, Modena, anatomy, ISSEL, Atti Soc. Ligustica xv, i, p. 31, figg. 1-8 : **n. spp.**
- Glossoscolex excelsus*, *G. perrieri*, also **n. subsp. meridionalis**, Ecuador, COGNETTI, Boll. Mus. Torino xix, No. 474, pp. 16 & 17, **n. spp.**
- Helodrilus* (*Allolobophora*) *virei* **n. sp.**, COGNETTI, Atti Soc. Modena (4) v, 36, p. 5; *H. (Allolobophora) longus* **n. subsp. occulta**, Italy, COGNETTI, Boll. Mus. Torino xix, No. 466, p. 2; *H. (Eophila) alzonæ*, Italy, COGNETTI, t. c. No. 459, p. 2; *H. (Allolobophora) borellii*, p. 2, *H. paradoxus*, p. 3, *H. gavarnicus*, p. 5, *H. doderi*, p. 6, *H. pyrenaicus*, p. 7, *H. sardonicus*, p. 9, Pyrenees, COGNETTI, t. c. No. 476; *H. (Allolobophora) latens*, anatomy, COGNETTI, Atti Soc. Modena (4) v, 36, p. 7 : **n. spp.**
- Henlea leptodera*, regeneration, NUSBAUM, Arch. polon. ii, 3, pp. 233-258, figg. 1, 3-11, 14.
- Holoscolex* **n. gen.** for *H. nemorosus* **n. sp.**, Ecuador, COGNETTI, Boll. Mus. Torino, No. 474, p. 17.
- Hyodrilus palustris*, *I. filiformis*, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, p. 408, fig. 1-5, **n. spp.**
- Limnodriloides* **n. gen.** for *L. appendiculatus*, p. 187, fig. 1, *L. roseus*, p. 188, fig. 2, *L. pectinatus*, p. 190, fig. 3, **n. spp.**, Gulf of Naples, PIERANTONI, Boll. Soc. Napoli (1) xvii.
- Lumbricidæ*, structure of blood system, GUNGL, Arb. Inst. Wien xv, 2, pp. 155-183, 1 pl.; *Lumbricidæ* of Bologna, classification, BORTOLOTTI, Boll. Naturalista xxiv, pp. 16-18.
- Lumbriculus*, regeneration, MORGAN, Science xx, pp. 742-748.
- Lumbricus*, on the existence of a tubular apparatus in the nervous tissue, CAJAL, Bol. Soc. espan. iii, pp. 395-398, 2 figg.; *Lumbricus*, SÁNDOR, Allatt. Kozl. Magyar Tars. i, 1902, p. 107, fig. 5; *L. rubellus*, APÁTHY, op. cit. iii, 1904, 1, pp. 76-82, 6 figg.; *L. friendi* **n. n.** for *L. papillosus* Friend, COGNETTI, Boll. Mus. Torino xix, No. 476, p. 10.
- Marionina volkarti*, Switzerland, BRETSCHER, Rev. Suisse Zool. xii, p. 262, **n. sp.**

- Mesenchytræus parvus*, anatomy, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, p. 440, figg. 46-48, **n. sp.**
- Microscolex elegans*, distribution of sense organs, BOVARD, Univ. Calif. publ. Zool. i, pp. 269-286, pl. xxiv-xxv.
- Monopylephorus trichochætus*, *M. parvus*, p. 427, figg. 21-26, anatomy, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, **n. spp.**
- Nais eliguis*, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 516, fig. 82.
- Nematogenia josephina*, Costa Rica, COGNETTI, Boll. Mus. Torino, No. 478, p. 3, **n. sp.**
- Notiodrilus georgianus* **var. n. lævis**, Buenos Ayres, ROSA, Atti Soc. Modena (4) iv, 35, p. 9.
- N. silvestrii*, Rio Santa Cruz, anatomy, ROSA, t. c. p. 7, **n. sp.**
- Ocneroдрilus (Ilyogenia) simplex*, Costa Rica, COGNETTI, Boll. Mus. Torino, No. 478, p. 3, **n. sp.**
- Pachydrilus claparèdeanus*, anatomy, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, p. 431, fig. 28, **n. sp.**
- Perionyx ceylanensis*, Ceylon, detailed anatomy, MICHAELSEN, SB. Bohmisch. Ges. 1903, xl, pp. 6-11, 2 figg., **n. sp.**
- Plutellus uzeli*, Peradeniya, Ceylon, in *Notoscolex*, MICHAELSEN, t. c. p. 4, 3 fig., **n. sp.**
- Psammoryctes illustris*, *P. fossor*, pp. 416-419, fig. 15-20, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, **n. spp.**
- Stylaria lacustris*, regulation, HARPER, Biol. Bull. vi, pp. 173-190, 16 figg.
- Thamnodrilus benhami*, p. 6, *T. ophioides*, p. 6, *T. nemoralis*, p. 7, *T. micrurus*, p. 8, *T. beddardi*, p. 8, *T. tuberculata*, p. 9, *T. magnus*, p. 10, *T. acanthinurus*, p. 10, *T. agricola*, p. 11, *T. validus*, p. 12, *T. gravis*, p. 12, *T. tutus*, p. 13, *T. rigeophilus*, p. 13, *T. euzonus*, p. 14, *T. agilis*, p. 14, Ecuador, COGNETTI, Boll. Mus. Torino xix, No. 474, **n. spp.**
- Trichodriloides* **n. gen.** for *T. intermedius* **n. sp.**, Orne, FAUVEL, C.R. Ass. Franc. xxxii 1, p. 221.
- Trinephrus kræpelini*, Central Ceylon, anatomy, MICHAELSEN, Mt. Mus. Hamburg xxi, p. 128, 1 fig., **n. sp.**
- Tubificidæ* parasitised by *Actinomyxidæ*, CAULLERY & MESNIL, C.R. Soc. Biol. lvi, pp. 408-410; *Tubifex*, parasites of, LÉGER, C.R. Soc. Biol. lvi, pp. 844-846, 4 figg.; *Tubifex*, Marschall Island, SCHNEE, Zool. Jahrb. Syst. xx, pp. 387-412; *T. tubifex*, parasitised, LÉGER, C.R. Soc. Biol. lvi, pp. 846-848.
- T. marinus*, p. 421, fig. 9 & 10, DITLEVSEN, Zeitschr. wiss. Zool. lxxvii, **n. sp.**

HIRUDINEA.

[The following memoirs relate to *Hirudinea*:—APATHY (11), ARNESEN (13), AZOULAY (16), BILLET (25), BRUMPT (55), FAGE (134), HEMINGWAY (191), HOLMGREN (201), KERSHAW (230), LIVANOW (270), NOBRE (333, 334), PÉREZ & GENDRE (348, 349), SCHARFF (396), SCHUBERG (407), SCHUBERG & SCHRÖDER (406), SCRIBAN (414), SPIESS (434, 435), YAKHONTOV (478).]

GENERAL BIOLOGY.

Morphology, LIVANOW (270).

Anatomy and histology of the digestive organs of *Aulostoma*, SPIESS (434).

Histology of digestive epithelium in *Hæmopsis sanguisuga*, SPIESS (435).

Muscle fibres of *Branchellion*, PÉREZ & GENDRE (349).

- Histology of cylindrical epithelial cells, HOLMGREN (201).
 Histology of brain and nerve cord of *Placobdella pediculata*, HEMINGWAY (191).
 Histology of nerve fibres in the digestive tube of the leech, AZOULAY (16).
 Histology of the blood system of the *Rhynchobdellidæ*, ARNESEN (13).
 Three forms of light cells, APÁTHY (11).
 Leech as a sight restorer, CLARKE (86).
 Ergastoplasmic functions, nephridia, *Hirudo*, FAGE (134).
 Ovogenesis of *Branchellion*, PÉREZ & GENDRE (348).
 Gregarines parasitising *Hirudinea*, BRUMPT (55).

DISTRIBUTION.

- Lake Baical, list of spp. found, YAKHONTOV (478).
 Sligo, freshwater leeches, SCHARFF (396).
 Roumania, Hirudinidæ; SCRIBAN (44).
 North and South Portugal, marine fauna, NOBRE (333, 334).
 Constantine, Algeria, a Trypanosome in *Helobdella algira*, BILLET (25).
 Victoria, a freshwater leech, KERSHAW (230).

SYSTEMATIC.

- Leech, structure of nerve fibres in the digestive canal, AZOULAY, C.R. Soc. Biol. lvi, pp. 465-468, 2 figg.
Aulostoma gulo, anatomy and histology of digestive organs, SPIESS, Rev. Suisse Zool. xii, pp. 585-647, pls. x & xi.
Branchellion torpedinis, muscle fibres, PÉREZ & GENDRE, C.R. Soc. Biol. lvii, pp. 113-115; ovogenesis, PÉREZ & GENDRE, t. c. pp. 605 & 606.
Clepsine striata to *Glossosiphonia*, characters, SCRIBAN, Ann. Univ. Jassy iii, p. 18.
Hæmopsis sanguisuga, histology of digestive epithelium, SPIESS, C.R. Soc. Biol. lvi, pp. 698 & 699; *H. sanguisuga*, parasitised by Gregarines, BRUMPT, op. cit. lvii, pp. 165-167.
Helobdella algira, at Constantine, parasitised by a Trypanosome, BILLET, C.R. Ac. Sci. cxxxix, 2, pp. 574-576.
Hemiclepsis marginata, parasitised by Gregarines, BRUMPT, C.R. Soc. Biol. lvii, pp. 165-167.
Hirudo medicinalis, cylindrical epithelial cells, HOLMGREN, Arch. mikr. Anat. lxx, 2, pp. 280-297, pls. xviii & xix, 5 figg.; morphology, LIVANOW, Zool. Jahrb. Anat. xix, pp. 29-91, xx, pp. 153-226, pls. ii-vi, ix-xi.
Limnobdella quinquestriata, Victoria, freshwater form, KERSHAW, Victorian Natural. xx, 9, Zoology, pp. 122-125.
Nephele vulgaris (= *Herpobdella atomaria* Carena), parasitised by a new Nematode, SCHUBERG, Verh. Ver. Heidelb. vii, pp. 629-632.
Placobdella catenigera, parasitised by Gregarines, BRUMPT, C.R. Soc. Biol. lvii, pp. 165-167; *P. pediculata*, brain and nerve cord, HEMINGWAY, Science xix, p. 218.
Proclepsis tessellata, morphology, LIVANOW, Zool. Jahrb. Anat. xix, pp. 29-91, xx, pp. 153-226, pls. ii-vi, ix-xi.
Rhynchobdellidæ, histology of the blood system, ARNESEN, Jena. Zeitschr. xxxviii, 4, pp. 771-806, pls. xxvi-xxviii.

PLATYHELMINTHES.

NEMERTINEA.

[The following memoirs relate to *Nemertinea*:—BERGENDAL (24), BURGER (61), JOUBIN (223), RETZIUS (371), VERRILL (459), WILSON (471), YATSU (479).]

GENERAL BIOLOGY.

Monograph, BURGER (61).

Structure of *Carinoma oudemans*, BERGENDAL (24).

Experiments on the development of egg fragments in *Cerebratulus*, YATSU (479).]

DISTRIBUTION.

Azores, n. sp., JOUBIN (223).

SYSTEMATIC.

Nemertini, monograph, BURGER, Tierreich xx, 1904, 151 pp., 15 figg.

Carinoma oudemans, *C. armandi*, structure, BERGENDAL, Acta Univ. Lund. xxxix, 86 pp., 2 pls., 25 text-figg.

Cerebratulus lacteus, experiments on the development of egg-fragments, YATSU, Biol. Bull. vi, pp. 123–136, 5 figg.

Lineus albocinctus, *L. albonasus*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 598, pl. lxx, figg. 1 & 2, n. spp.

Malacobdella grossa, male reproductive organs, RETZIUS, Biol. Untersuch. xi, p. 12, pl. iv, figg. 20–27.

Nectonemertes grimaldii, Azores, JOUBIN, Bull. Mus. Monaco 1904, No. 20, 6 pp., 2 figg., n. sp.

Teniosoma curtum, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 597, pl. lxx, fig. 3.

TURBELLARIA.

[The following memoirs relate to *Turbellaria*:—BOHN (31, 32), BRESSLAU (50), CHILD (84), ENTZ (132), GIARD (161), GRAFF (170), HUBRECHT (204), KEEBLE (228), KERSHAW (230), KOROTNEFF (234), LAIDLAW (241), LUTHER (284), MARKOW (293), MARPMANN (295), MATTIESEN (299), MELL (303, 304), MORGAN (319–322), MORGAN & SCHIEDT (323), MRÁZEK (325), NELSON (328, 329), NEPII (330), SABUSSOW (388), SÁNDOR GORKA (394), SCHULTZ (408, 409), STEVENS (437), VERRILL (459), WEIGELT (466), YAKHONTOV (478).]

GENERAL BIOLOGY.

Monograph on the *Eumesostomidae*, LUTHER (284).

Histology of Planarians, MARPMANN (295).

Movements, BOHN (31, 32).

Appearance of hunger in *Planaria lactea*, SCHULTZ (408).

Regeneration in *Planaria lugubris*, SCHULTZ (409).

Regeneration, MORGAN (319).

Regeneration in *Phagocata gracilis*, MORGAN & SCHIEDT (323).

Form-regulation, CHILD (84).

Control of heteromorphosis in *Planaria maculata*, MORGAN (320).

Polarity and axial heteromorphosis in *Planaria* spp., MORGAN (322).

Spermatogenesis and embryology of *Planaria simplissima*, STEVENS (437).

Cell-lineage and early development of *Dinophilus*, NELSON (329).

Early development of *Dinophilus* as compared with that of Annelids, NELSON (328).

Embryology of Dendrocoeleles, MATTIESEN (299).

Development of Rhabdocoeles, BRESSLAU (50).

Fauna of salt water, continental, ENTZ (132).

Bionomics of *Convoluta roscoffensis*, and its green cells, KEEBLE (228).

Affinities and systematic position, HUBRECHT (204).

DISTRIBUTION.

Lake Baical, collections, KOROTNEFF (234).

Lake Baical, n. spp., SABUSSOW (388).

Lake Baical, spp. found, YAKHONTOV (478).

Kharkow and Poltava, n. spp., MARKOW (293).

Pas-de-Calais, faunistic, GIARD (161).

Montenegro, n. sp., MRÁZEK (325).

European Coasts and Orotava, n. spp., marine forms, GRAFF (170).

North East Africa, n. spp., MELL (303).

East Africa, n. spp., NEPPI (330).

Madagascar, n. spp., MELL (304).

Thursday Island, n. sp., LAIDLAW (241).

Bermudas, n. spp., VERRILL (459).

Victoria, 5 land Planarians, KERSHAW (230).

New Zealand, n. spp., NEPPI (330).

SYSTEMATIC.

Amblyplana nigrescens, p. 472, figg. 1-3, *A. aberana*, p. 476, figg. 4-8, *A. neumanni*, p. 480, figg. 9-12, North East Africa, anatomy, MELL, Zool. Jahrb. Syst. xx; *A. kükenthali*, Madagascar, MELL, Abh. Senckenb. Ges. xxvii, 2, p. 224, pl. xxx, figg. 13-16 : n. spp.

Amphicheerus virescens, *A. langerhansi*, pp. 231 & 232, pl. xi, figg. 1-10, 21-23, pl. xii, figg. 1-13, GRAFF, Zeitschr. wiss. Zool. lxxviii.

Aphanostoma rhomboides, anatomy, GRAFF, t. c. p. 219, pl. xi, figg. 11-20.

Bipalium woodworthi, p. 209, pl. xxxi, fig. 4, *B. voighti*, p. 212, pl. xxxii, fig. 5, *B. kelleri*, p. 213, pl. xxx, figg. 1 & 2, pl. xxxii, fig. 6, *B. ferrugineum*, p. 216, pl. xxxii, fig. 7, anatomy, MELL, Abh. Senckenb. Ges. xxvii, 2.

B. tau, p. 218, pl. xxx, figg. 3-6, *B. brauni*, p. 219, figg. 7 & 8, *B. grandidieri*, p. 220, figg. 9 & 10, *B. marenzelleri*, p. 222, figg. 11 & 12, Madagascar, anatomy, MELL, t. c. n. spp.

Bothromesostoma essenii, p. 249, figg., *B. personatum*, p. 253, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii; *B. personatum*, p. 44, fig. 40, MARKOW, Trudui Kharkov. Univ. xxxix.

Castrada segne, p. 177, figg., *C. cuénoti*, p. 186, figg., *C. neocomiensis*, p. 192, figg., *C. hofmanni*, p. 196, figg., *C. viridis*, p. 205, pl. viii, fig. 2, *C. intermedia*, p. 209, fig. 7, *C. armata*, p. 212, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii; *C. radiata*, *C. chlorea*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, pp. 46 & 47, figg. 42 & 43.

C. stagnorum, p. 183, figg., *C. sphagnetorum*, p. 202, figg., LUTHER, Zeitschr. wiss. Zool. lxxvii, n. spp.

Cestoplana, form-regulation, CHILD, Smithson. Collect. xlv, pp. 134-143.

- Cicerina tetradactyla*, Pas-de-Calais, River Ambleteuse, GIARD, Microgr. prep. xii, 3, p. 107, fig. 1.
- Cæloplana*, affinities, HUBRECHT, Jena. Zeitschr. xxxix, 1, pp. 151-176.
- Convoluta roscoffensis*, movements of, BOHN, Bull. Mus. Paris 1903, pp. 352-364, 4 figg., 397-399; *C. schultzei*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 106, fig. 4; *C. roscoffensis*, bionomics, green cells, KEEBLE, Rep. Brit. Ass. 1903-1904, p. 691; *C. sordida*, *C. hipparchia*, pp. 227 & 228, pl. xiii, figg. 21-29, GRAFF, Zeitschr. wiss. Zool. lxxviii.
- C. uljanini*, p. 223, pl. xiii, figg. 18-20, *C. confusa*, p. 225, figg. 1-7, Orotava, GRAFF, t. c. n. spp.
- Ctenoplana*, affinities, HUBRECHT, Jena. Zeitschr. xxxix, 1, pp. 151-176.
- Dendrocalida*, embryology, MATTIESEN, Zeitschr. wiss. Zool. lxxvii, pp. 274-361, pls. x-xiii.
- Dendrocalum lacteum*, regeneration, MORGAN, Biol. Bull. vi, pp. 159-172.
- Derostoma unipunctata*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 60, fig. 56.
- Dinophilus*, early development as compared with that of Annelids, NELSON, Amer. Natural. xxxviii, p. 500; early development and cell-lineage, NELSON, P. Ac. Philad. lvi, 3, pp. 687-737, pls. xliii-xlvi, 4 charts, 6 figg.
- Discocelis binoculata*, *D. cyclops*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), pp. 43 & 44, pl. v, figg. 1, 3 & 4, n. spp.
- Dolichoplana voeltzkowi*, Madagascar, anatomy, MELL, Abh. Senckenb. Ges. xxvii, 2, p. 224, pl. xxxv, figg. 8-11.
- Gyrator notops*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 49, fig. 45.
- Leptoplana tremellaris*, form-regulation, CHILD, Smithson. Collect. xlv, pp. 134-143; *L. lactoalba* n. var. *tincta*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 46, pl. v, fig. 8.
- L. lactoalba*, Bermudas, VERRILL, op. cit. x (2), p. 595, fig. 9; *L. australis*, Port Phillip, LAIDLAW, Mem. Manchester Soc. xlviii, No. 15, p. 3, n. sp.
- Mesostoma viridatum*, *M. lanceola*, *M. punctatum*, *M. rostratum*, *M. lingua*, *M. productum*, *M. ehrenbergi*, *M. craci*, Kharkov, MARKOW, Trudui Kharkov. Univ. xxxix, pp. 34-44, figg. 30-39; *M. productum*, p. 218, *M. lingua*, p. 222, *M. ehrenbergi*, p. 227, *M. mutabile*, p. 235, *M. craci*, p. 241, *M. tetragonum*, p. 244, many figures, LUTHER, Zeitschr. wiss. Zool. lxxvii.
- M. lacteum*, East Africa, NEPPI, Zool. Jahrb. Syst. xxi, p. 303, pl. ix, figg. 1-6, n. sp.
- Opistoma schultzeanum*, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 61, fig. 57.
- Otocelis rubropunctata*, anatomy, GRAFF, Zeitschr. wiss. Zool. lxxviii, p. 216, pl. xiii, figg. 8-17.
- Pelmatoplana mahéensis*, p. 194, pl. xxxi, fig. 1 and text-figg. 1 & 2, *P. braueri*, p. 202, fig. 2, Madagascar, structure, MELL, Abh. Senckenb. Ges. xxvii, 2.
- Perocephalus ravenalæ*, Madagascar, anatomy and histology, MELL, t. c. p. 205, pl. xxxi, fig. 3, text-fig. 3.
- Phagocata gracilis*, regeneration experiments, MORGAN & SCHIEDT, Biol. Bull. vii, pp. 160-165; regeneration, MORGAN, Biol. Bull. vi, pp. 159-172.
- Planaria lactea*, fig. 60-64, *P. polychora*, p. 67, fig. 63, MARKOW, Trudui Kharkov. Univ. xxxix, 1; *P. lactea*, reductions, SCHULTZ, Arch. Entwicklmech. xviii, pp. 555-577, pl. xxxiv; *P. lugubris*, *P. maculata*, polarity and axial heteromorphosis, MORGAN, Amer. Natural. xxxviii, pp. 502-505; *P. lugubris*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *P. maculata*, control of heteromorphosis, MORGAN,

- Arch. Entwickmech. xvii, pp. 683-695, 1 fig.; *P. maculata*, regeneration, MORGAN, Biol. Bull. vi, pp. 159-172; *P. angarensis*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, 6, p. 26, fig. 12; *P. simplissima*, spermatogenesis and embryology, STEVENS, P. Ac. Philad. lvi, 1, pp. 208-220, pls. xiii-xvi, 5 text-figg.; *P. torva*, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 514, fig. 79.
- P. armata*, p. 28, fig. 13, *P. sibirica*, p. 30, fig. 14, *P. grubii*, p. 31, fig. 15, *P. dybowski*, p. 33, fig. 16, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi; *P. montenigrina*, Montenegro, MRÁZEK, SB. Bohmisch. Ges. 1903, xxxiii, 43 pp., 2 pls.; *P. neumanni*, East Africa, *P. schauinslandi*, New Zealand, pp. 309-324, pl. ix, figg. 7-12, pl. x, figg. 13-16, NEPPI, Zool. Jahrb. Syst. xxi: **n. spp.**
- Planocera graffi*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 105, fig. 3. *Platydemus montanus*, North East Africa, MELL, Zool. Jahrb. Syst. xx, p. 484, figg. 13-18, **n. sp.**
- Procotyla baicalensis*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, p. 23, fig. 11, **n. sp.**
- Proporus venenosus*, Sebastopol, GRAFF, Zeitschr. wiss. Zool. lxxviii, p. 215, pl. xiii, figg. 30 & 31.
- Pseudoceros superbus*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 596, pl. lxx, fig. 5.
- P. bicolor*, *P. aureolineata*, Bermudas, VERRILL, op. cit. xi (1), p. 42, pl. v, figg. 5 & 6; *P. pardalis*, Bermudas, VERRILL, op. cit. x (2), p. 596, pl. lxx, fig. 6: **n. spp.**
- Rhynchomesostoma* **n. gen.** for *R. rostratum* (= *Fasciola* Müller), LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 158, figg.
- Rimaccephalus punctatus*, Lake Baical, SABUSSOW, Trudui Kharkov. Univ. xxxvi, p. 5, **n. sp.**
- Sorocelis nigrofasciata*, p. 7, figg. 1 & 2, *S. hepatizon*, p. 9, fig. 3, *S. tigrina*, p. 11, fig. 4, *S. guttata*, p. 20, figg. 9 & 10, Lake Baical, SABUSSOW, t. c.
- S. fungiformis*, p. 13, fig. 5, *S. lineata*, p. 15, fig. 6, *S. leucocephala*, pp. 17-19, fig. 8, Lake Baical, SABUSSOW, t. c. **n. spp.**
- Stenostoma caudata*, Kharkow, MARKOW, Trudui Kharkov. Univ. xxxix, 1, p. 31, fig. 27, **n. sp.**
- Strongylostoma radiatum*, structure, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 149, pl. iii, figg. 14-27, pl. vii, figg. 4-9, pl. ix, fig. 22.
- Stylochus vigilax*, Thursday Island, LAIDLAW, Mem. Manchester Soc. xlviii, No. 15, p. 2; *S. bermudensis*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 43, **n. sp.**
- Tetracelis marmorosum*, anatomy, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 166, figg.
- Thysanozoön griseum*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 4, pl. v, fig. 7, **n. sp.**
- Trigonoporus microps*, Bermudas, VERRILL, t. c. p. 45, pl. v, fig. 2, **n. sp.**
- Typhloplana minima*, anatomy, LUTHER, Zeitschr. wiss. Zool. lxxvii, p. 174, figg.
- Vortex hellus*, p. 52, fig. 48, *V. sexdentatus*, p. 53, fig. 49, *V. pictus*, p. 54, fig. 50, *V. hallezi*, p. 55, fig. 51, *V. millportianus*, p. 56, fig. 52, *V. truncatus*, p. 56, *V. grafi*, p. 58, fig. 54, MARKOW, Trudui Kharkov. Univ. xxxix, 1.
- V. kharkowiensis*, MARKOW, t. c. p. 58, **n. sp.**

CESTODA.

[The following memoirs relate to *Cestoda* :—BARBAGALLA & DRAGO (18), BILLINGHURST (26), DE BUYSSON (62), CARL (71), CHILD (83), COHN (100), CULLINGWORTH & CLUTTON (107), CURTIS (108), DÉVÉ (121, 122, 123), EDEN (129), ENTZ (132), FUHRMANN (149, 151), GALBRAITH (152), GIARD (158), GUCCINI (174), GUIART (175), HALL (183), HERDMAN (193), ISTVÁN RÁTZ (210–212), JAMMES & MANDOUL (216), JANICKI (217), KOWALEWSKI (236), KÜNSEMULLER (237), LEON (256), LINSTOW (260–268), MILLER (308), ODHNER (339), PONOMAROFF (353), RANSOM (362), RÁTZ (363), RICCI (372), RIGBY (374), ROSSETER (382), SCHNEIDER (403, 404), SFAMENI (417), SZYMANSKI (439), TEMPÈRE (442), TERRIEN (443), VIGENER (462), WOOD (475), ZSCHOKKE (484).]

GENERAL BIOLOGY.

Anatomy of various forms, LINSTOW (260).
 Amitosis in cells of *Moniezia*, CHILD (83).
 Marsupial parasites, ZSCHOKKE (484).
 Parasites of man and domestic animals, TEMPÈRE (442).
 Fish parasites, SCHNEIDER (404).
 Sub-conjunctival *Cysticercus*, TERRIEN (443).
 Infection of dog by *Dibothriocephalus latus*, RÁTZ (363).
 Chicken tapeworm, RANSOM (362).
 Parasites of higher animals, mode of infection, parts attacked, symptoms; anatomy and biology of parasite, HALL (183).
 Practical demonstrations of parasitology, GUIART (175).
 Domestic cat as final host for *Tenia echinococcus*, DÉVÉ (122).
 Human parasites, BILLINGHURST (26).
 Tracheal *Tenia echinococcus*, DÉVÉ (121).
 Prophylaxis for *Tenia echinococcus*, transmission, hosts, prevention, DÉVÉ (123).
 Origin of pearls, GIARD (158).

DISTRIBUTION.

Russia, n. spp., LINSTOW (267).
 Finland, fish parasites, SCHNEIDER (403).
 Roumania, frequent occurrence of *Bothriocephalus*, LEON (256).
 Hungarian spp., ISTVÁN RÁTZ (211).
 Galicia, n. sp. from *Podiceps auritus*, KOWALEWSKI (236).
 Ticino, fish parasites, GUCCINI (174).
 Sicily, fish parasites, BARBAGALLO & DRAGO (18).
 Caspian Sea, n. sp., LINSTOW (267).
 Nile, n. sp., LINSTOW (267).
 West Africa, n. spp., LINSTOW (264).
 Peru, n. sp., LINSTOW (267).
 Ceylon, pearl formation, HERDMAN (193).
 Singapore, n. sp., LINSTOW (268).
 Australia, mammalian parasites, FUHRMANN (151).

SYSTEMATIC.

Amphilina foliacea, anatomy and histology, HEIN, Zeitschr. wiss. Zool. lxxvi, pp. 400–438, pls. xxv & xxvi; anatomy, COHN, t. c. pp. 367–387, pl. xxiii.

- Anoplocephala plicata*, p. 118, pl. xiii, figg. 1 & 2, *A. perfoliata*, figg. 3 & 4, *A. mamillana*, figg. 5 & 6, in the horse, TEMPÈRE, Microgr. prep. xii, 3.
- Anthobothrium tortum* from *Phoca barbata*, LINSTOW, Centrbl. Bakter. xxxvii, p. 682, figg. 7 & 8, **n. sp.**
- Aploparaksis fringillarum*, LINSTOW, Arch. Naturg. 1904, i, p. 305, figg. 21 & 22.
- Bertia forcipata*, Peru, from the intestine of *Lagidium peruanum cuvieri*, LINSTOW, Centrbl. Bakter. xxxvii, p. 681, figg. 5 & 6, **n. sp.**
- Bothriocephalus* in Roumania, LEON, Bull. Soc. Bucarest xiii, pp. 286 & 287; *B. latus*, larva and adult, ISTVÁN RÁTZ, Termes. Kozl. Magyar Tars. 1904, pp. 22-28, 5 figg.; *B. latus*, p. 212, pl. xxi, figg. 1-10, *B. davaine*, p. 213, pl. xxi, figg. 11 & 12, *B. cordatus*, figg. 13 & 14, in man, TEMPÈRE, Microgr. prep. xii, 5; *B. nigropunctatus* in *Sebastes norvegicus*, Murman Coast, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 293, figg. 35 & 36.
- B. ratticola*, Singapore, from *Mus rattus*, LINSTOW, Centrbl. Bakter. xxxvii, p. 862, fig. 9, **n. sp.**
- Bothriomonus pachycephalus*, structure and affinities, LINSTOW, Arch. Naturg. 1904, i, p. 307, figg. 26-29; *B. nylandicus*, Finland, in *Pleuronectes flesus*, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3, p. 5, fig. 1.
- Bothriotenia rugosa*, Finland, anatomy, SCHNEIDER, t. c. p. 7, fig. 2.
- Cittotenia denticulata*, note on occurrence in rabbit, DU BUYSSON, Rev. Sci. Bourbonnais xvii, p. 130.
- C. quadrata*, Peru, from intestine of *Lagidium peruanum cuvieri*, LINSTOW, Centrbl. Bakter. xxxvii, p. 680, figg. 3 & 4, **n. sp.**
- Cænurus cerebralis*, Karlsruhe, in cattle, KARL, Mt. Badisch. Zool. Ver. 17, pp. 111-120; *C. cerebralis*, *C. serialis*, anatomy, KUNSEMÜLLER, Inaug. Diss. (Tübingen) Jena 1904, 32 pp., 3 pls.
- Cysticercus bovina*, experiments, RICCI, Boll. Naturalista xxiv, pp. 85-87; *C. inermis*, Karlsruhe, in cattle, CARL, Mt. Badisch. Zool. Ver. 17, pp. 111-120.
- Davainea echinobothrida* (= *Tænia botrioplites*), *D. tetragona*, in chickens, history, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. 60, pp. 55-72, figg. 41-52.
- Dibothriocephalus latus*, mode of infecting the dog, RÁTZ, Centrbl. Bakter. xxxvi, pp. 384-387.
- Dioicocestus aspera*, *D. acotylus*, anatomy of male and female, FUHRMANN, Zool. Jahrb. Syst. xx, pp. 131-150.
- Diorchis parviceps*, anatomy, LINSTOW, Arch. Naturg. 1904, i, p. 306, figg. 23-25.
- Diplocotyle coherens* from *Pleuronectes flesus*, Murman Coast, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 291, figg. 30-34, **n. sp.**
- Drepanidotenia pachycephala*, LINSTOW, Arch. Naturg. 1904, i, p. 305, figg. 17-20; *D. lanceolata*, *D. setigere*, p. 120, pl. xiii, figg. 10-13, TEMPÈRE, Microgr. prep. xii, 3.
- Echinococcus* in the abdominal cavity of a rabbit, PONOMAROFF, Centrbl. Bakter. xxxiv, p. 623.
- Hymenolepis* sp., a cestode without a genital pore, JANICKI, Centrbl. Bakter. xxxvi, p. 222, 1 fig.; *H. nana*, *H. diminuta*, in man in France, p. 119, pl. xiii, figg. 7-9, TEMPÈRE, Microgr. prep. xii, 3; *H. (Drepanidotenia) clandestina*, COHN, Arch. Naturg. 1904, i, p. 243, figg. 9-12; *H. decipiens*, *H. acuta*, *H. scalaris*, *H. bacillaris*, pp. 302-305, figg. 10-16, LINSTOW, Arch. Naturg. 1904, i.
- H. (Drepanidotenia) podicipina*, from *Podiceps auritus*, SCYMÁNSKI, Bull. Ac. Cracovie 1904, 10, p. 733, pl. xvi, **n. sp.**
- Ichthyotenia perca*, Finland, anatomy, synonymy, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3, p. 13, figg. 3-8.

- I. skorikowi*, from *Acipenser stellatus*, Caspian Sea, LINSTOW, Annuaire Mus. St. Petersb. ix, p. 18, figg. 4-6; *I. skorikowi*, from *Acipenser stellatus*, LINSTOW, Arch. mikr. Anat. lxi, 3, p. 494, figg. 21 & 22, **n. spp.**
- Ligula simplicissima*, ENTZ, Termes Kozl. Magyar Tars. 1904, p. 626, 2 figg.; *L. simplicissima*, in *Tinca vulgaris*, anatomy, BARBAGALLO & DRAGO, Atti Acc. Gioen. xvii, No. 3, p. 11.
- Linstowia jheringi*, from *Peramys*, South America, ZSCHOKKE, Centrbl. Bakter. xxxvi, p. 52, 1 pl. **n. sp.**
- Mesocostoides lineatus*, *M. litteratus*, *M. perlatus*, *M. nigropunctatus*, ISTVÁN RÁTZ, Allatt. Kozl. Magyar Tars. 1904, iii, 2, pp. 116-119.
- Moniezia*, amitosis, CHILD, Anat. Anz. xxv, pp. 545-558, 11 figg.; *M. expansa*, in oxen and sheep, anatomy, TEMPÈRE, Microgr. prep. xii, 1, p. 25, pl. iv, figg. 1-4, *M. benedeni*, p. 26, fig. 5, *M. alba perroncito*, p. 26, fig. 6.
- Physaloptera dispar*, West Africa, from *Erinaceus albiventris*, LINSTOW, Centrbl. Bakter. xxxvi, p. 380, figg. 1 & 2, **n. sp.**
- Stilesia centripunctata*, Algeria, in sheep, TEMPÈRE, Microgr. prep. xii, 1, p. 27, pl. iv, fig. 11.
- Tænia*, bacterial properties, JAMMES & MANDOU, C.R. Ac. Sci. cxxxix, 2, pp. 329-331; *T. echinococcus*, hosts, transmission, prevention, DÉVÉ, C.R. Soc. Biol. lvii, pp. 261 & 262; *T. echinococcus*, domestic cat as final host, DÉVÉ, t. c. pp. 262-264; *T. echinococcus*, in trachea, DÉVÉ, t. c. pp. 136-138; *T. laticollis* from *Felis lynx*, Russia, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 288, fig. 23; *T. multiformis*, COHN, Arch. Naturg. 1904, i, p. 246, figg. 13-16; *T. sinuosa*, genital organs, ROSSETER, J. Quekett Club ii, No. 55, pp. 81-90, pl. v.; *T. solium* as *Cysticercus cellulosæ*, in tumours, very rare, TERRIEN, C.R. Soc. Biol. lvii, pp. 103-105, 2 figg.; *T. solium*, *T. cænurus*, *T. crassicollis*, anatomy, VIGENER, Jahrb. nassau. Ver. lvi, pp. 115-177, 8 figg.
- T. voluta*, p. 381, figg. 5 & 6, West Africa, from *Erinaceus albiventris*. *T. (Hymenolepis) voluta*, p. 382, figg. 7-10, from *Anas boschas*, LINSTOW, Centrbl. Bakter. xxxvi; *T. hominis*, from *Homo sapiens*, Aschabad, p. 286, figg. 17-19, *T. hoplites*, from *Ardea*, p. 288, figg. 20-22, *T. dahurica*, from *Corvus dahuricus*, Siberia, p. 290, figg. 24 & 25, *T. retracta*, from *Canis ekloni*, p. 291, figg. 26-29, LINSTOW, Annuaire Mus. St. Petersb. viii, **n. spp.**
- Tetrabothrius* (= *Tænia* Krefft) *forsteri*, Australia (Port Jackson), in *Delphinus forsteri*, p. 745, figg. 1-5, *T. triangulare*, p. 748, figg. 6-11, FUHRMANN, Centrbl. Bakter. xxxv.
- Tetrarhynchobothrium fluviatile*, Nile, from *Malapterurus electricus*, LINSTOW, Centrbl. Bakter. xxxvii, p. 683, figg. 10 & 11, **n. sp.**
- Tatria* **n. gen.** for *T. biremis* **n. sp.**, from *Podiceps auritus*, Galicia, structure, KOWALEWSKI, Bull. Ac. Cracovie 1904, 7, pp. 367-368, pls. ix & x.
- Thysanosoma actinoïdes* in sheep, United States of America, p. 26, pl. iv, figg. 7 & 8, *T. rivolta* in sheep, p. 26, figg. 9 & 10, TEMPÈRE, Microgr. prep. xii, 1.
- Urogonoporos armatus* Lühe, 1902, the ripe proglottides of *Trilocularia gracilis* Olsson, 1869, systematic position, ODHNER, Arch. parasit. viii, pp. 465-471.

TREMATODA.

[The following memoirs relate to *Trematoda*:—AUDEN (15), BARBAGALLO & DRAGO (18), BILLINGHURST (26), BOUTAN (38), BRIOT (53), COHN (101), CONYNGHAM (104), DYÉ (128), ENTZ (132), FISCHODER (141, 142), FUHRMANN (150), GRAHAM (171), GUCCINI (174), GUIART (175), HALL (183), HEIN (189), ISTVÁN RÁTZ (210), JÄGERSKIÖLD (214), JOHNSTON (221), KAMENSKY (225), KATHARINER (227), LANDER (243), LEBOUR (251), LE DANTEC (252),

LINSTOW (260, 267), MACCALLUM (286), MACLAREN (287), MIRANDA RIBEIRO (309), OSBORN (341), PRATT (357), PRENANT (358), RENDALL (370), ROSS (381), RUGE (387), SCHNEIDER (402), SCOTT (412), THEOBALD (444), WORTH (477).]

GENERAL BIOLOGY.

- Anatomy and histology, of several forms, MACLAREN (287).
 Anatomy of n. genera and spp., COHN (101).
 Anatomy of n. spp., PRATT (357).
 Structure and n. sp., ISTVÁN RÁTZ (210).
 Histology of epithelial cells of the intestine of *Distomum hepaticum*, PRENANT (358).
 Fish parasites, SCHNEIDER (402).
 Parasitic Trematode in *Cardium edule*, LEBOUR (251).
 Parasites of higher animals, mode of infection, organs attacked, symptoms; anatomy and biology of parasite, HALL (183).
 Practical demonstrations of parasitology, GUIART (175).
 Parasites of the *Culicidae*, DYÉ (128).
 Parasitic in man, n. sp., CONYNGHAM (104).
 Human parasites, BILLINGHURST (26).
Anopheles maculipennis as host to a *Distomum*, RUGE (387).
 Liver fluke in sheep, preventives, THEOBALD (444).
 Bird-living *Distomum*, MIRANDA (309).
 Oyster parasite, GRAHAM (171).
 Origin of pearls, BOUTAN (38).
 Development of *Gyrodactylus elegans*, KATHARINER (227).

DISTRIBUTION.

- Russia, n. spp., LINSTOW (267).
 Boulogne, n. sp. on *Trachinus draco*, BRIOT (53).
 Ticino, fish parasites, GUCCINI (174).
 Sicily, fish parasites, BARBAGALLO & DRAGO (18).
 Red Sea form, anatomy of reproductive organs, JÄGERSKIÖLD (214).
 Natal, a case of *Bilharzia*, LE DANTEC (252).
 Cochin China, n. spp., FISCHÖEDER (142).
 Torres Straits, n. sp., LINSTOW (267).
 South America, n. spp., FUHRMANN (150).
 Rio Janeiro, bird parasitised by *Distomum*, MIRANDA RIBEIRO (309).
 Australia, bird parasites, JOHNSTON (221).

SYSTEMATIC.

- Amphistomum watsoni* in man, CONYNGHAM, Brit. Med. J. 1904, ii, p. 663, Lancet 1904, ii, p. 464, n. sp.
Bilharzia hæmatobia, notes on, AUDEN, Lancet 1904, i, p. 1235, RENDALL, pp. 755 & 756, WORTH, p. 611, ROSS, p. 687, SCOTT (412); *Bilharzia*, Natal, LE DANTEC, C.R. Soc. Biol. lvii, pp. 399 & 400.
Bothriogaster n. gen. for *B. variolaris* n. sp., South America, from the intestine of *Rostrhamus sociabilis*, FUHRMANN, Centrbl. Bakter. xxxvii, p. 59, figg. 1 & 2.
Cotylaspis insignis, Lake Chautauqua, New York, habits and structure, OSBORN, Zool. Jahrb. Anat. xxi, 2, pp. 201-242.
Dicrocoelium lanceolatum in the dog, KAMENSKY, Trudui Kharkov. Univ. xxxvi, pp. 59-64.
Diplectanum æquans, anatomy and histology, MACLAREN, Jena. Zeitschr. xxxviii, 3, pp. 573-618, pls. xx-xxii.

- Distomum* sp. in *Anopheles maculipennis*, RUGE, Centrbl. Bakter. xxxv, p. 258; *Distomum* spp., epithelium, HEIN, Zeitschr. wiss. Zool. lxxvii, pp. 546-585, pls. xxiii-xxv; *D. margaritarum*, causing pearls, BOUTAN, Arch. Zool. exp. Hist. Nat. (4) ii, xxxii, pp. 47-90, pl. iii.; *B. hepaticum*, histology of epithelial cells of the intestine, PRENANT, C.R. Soc. Biol. lvi, pp. 523-525; *D. hepaticum* in sheep, preventives, THEOBALD, 2nd Rep. Econ. Zool. p. 133; *D. lucipetum*, from *Larus maculipennis* MIRANDA, Arch. Mus. Rio Janeiro xii, pp. 137 & 138.
- D. armatissimum* from *Iguana*, Zool. Garden, St. Petersburg, p. 280, fig. 15; *D. reinhardi*, from *Astacus leptodactylus*, Russia, p. 280, fig. 16, LINSTOW, Annuaire Mus. St. Petersb. viii, **n. spp.**
- Echinostomum garzettæ*, at Benakat, in *Garzetta nigripes*, MACCALLUM, Zool. Jahrb. Syst. xx, pp. 541-548, 1 fig.
- E. armatum*, South America, from the intestine of *Rostrhamus sociabilis*, p. 61, fig. 3, *E. inerme*, Java, from the stomach of *Lutra*, p. 63, fig. 4, LINSTOW, Centrbl. Bakter. xxxvii, **n. spp.**
- Erpocotyle circularis*, from *Acipenser ruthenus*, LINSTOW, Arch. mikr. Anat. lxi, 3, p. 493, figg. 18-20; *E. circularis* from *Acipenser ruthenus*, Saratov, LINSTOW, Annuaire Mus. St. Petersb. ix, p. 17, 1-3 figg., **n. spp.**
- Eucotyle nephritica* (= *Monostomum* Creplin), COHN, Arch. Naturg. 1904, i, p. 237, fig. 4.
- Hemistomum triangulare* from *Dacelo gigas*, p. 108, figg. 1-6; *H. intermedium* from *Cygnus atratus*, p. 109, figg. 7-10, New South Wales, JOHNSTON, P. Linn. Soc. N. S. Wales xxix, 1, **n. spp.**
- Hemiurus crenatus*, anatomy, LANDER, Bull. Mus. Harvard xlv, No. 1, pp. 1-27, 4 pls.
- Holostomum hillii*, from *Larus novæ-hollandiæ*, p. 110, pl. vi, figg. 1-8; *H. simplex*, from *Ardea novæ-hollandiæ*, p. 112, pl. vii, figg. 1-3; *H. musculosum*, from *Sterna bergii*, p. 112, pl. vii, figg. 4-9, New South Wales, JOHNSTON, P. Linn. Soc. N. S. Wales xxix, 1, **n. spp.**
- Gasterostomum* sp., parasitising the oyster, *Bucephalus cuculus*, GRAHAM, Science xix, p. 247.
- Gastrothylax* spp., in new hosts, Cochin China, Annam, Madagascar, FISCHÖEDER, Centrbl. Bakter. xxxv, pp. 600 & 601.
- Gyrodactylus elegans*, ENTZ, Termes. Kozl. Magyar Tars. 1904, p. 628, fig.; *G. elegans*, development, KATHARINER, Zool. Jahrb. Suppl. vii, pp. 519-550, pls. xxv-xxviii, 10 figg.
- Microcotyle draconis*, Boulogne, on *Trachinus draco*, BRIOT, C.R. Soc. Biol. lvi, p. 126.
- Nemathobothrium molæ*, in flesh of *Orthogoriscus mola*, MACLAREN, Jena. Zeitschr. xxxviii, pp. 593-618, pls. xx-xxii, **n. sp.**
- Opisthodiscus* **n. gen.** for *O. diplodiscoides* **n. sp.**, COHN, Arch. Naturg. 1904, i, p. 240, figg. 6-8.
- Opisthotrema pulmonale*, Torres Straits, from the lung of *Halicore australis*, LINSTOW, Centrbl. Bakter. xxxvii, p. 678, figg. 1 & 2, **n. sp.**
- Opisthorchis tenuicollis*, structure, ISTVÁN RÁTZ, Allatt. Kozl. Magyar Tars. 1903, ii, 2, p. 84, pl. x, fig. 1.
- O. nazi* in *Ardea purpurea*, structure, ISTVÁN RÁTZ, t. c. p. 86, pl. x, fig. 2, **n. sp.**
- Ostiolum* **n. gen.** for *O. formosum* **n. sp.** from a frog, PRATT, Mark Anniv. Vol. 1903, p. 34, figg. 6-8.
- Paramphistomum explanatum*, p. 454, pl. xv, figg. 1-3; *P. epicitum*, p. 458, figg. 4-6; *P. scolicoelium*, p. 463, pl. xvi, figg. 7-11, FISCHÖEDER, Zool. Jahrb. Syst. xx.
- P. epicitum*, *P. scolicoelium*, Cochin China, from *Bos bubalus*, FISCHÖEDER, Centrbl. Bakter. xxxv, p. 599, **n. spp.**
- Polystomum integerimum*, ENTZ, Termes. Kozl. Magyar Tars. 1904, p. 627, fig.

- Pronopharynx* n. gen.¹ for *P. nematoides* n. sp., COHN, Arch. Naturg. 1904, i, p. 238, fig. 5.
Renicola pinguis n. gen. for *Monostomum* Creplin, COHN, t. c. p. 232, figg. 2 & 3.
Renifer variabilis (= *Distomum* Leidy), PRATT, Mark Anniv. Vol. 1903, p. 31, fig. 5.
Renifer n. gen. for *R. ellipticus*, *R. elongatus* n. spp., PRATT, t. c. pp. 25-30, figg. 1-5.
Scaphanocephalus expansus (= *Monostomum* Creplin), Red Sea, JÄGERS-KIÖLD, Res. Swed. Zool. Exp. Egypt i, pp. 1-16, 1 pl., 3 figg.
Typhlocælum flavum, COHN, Arch. Naturg. 1904, i, p. 230, fig. 1.

NEMATHELMINTHES.

NEMATODA (incl. GORDIACEA).

[The following memoirs relate to *Nematoda*:—ALESSANDRINI (6), ANNANDALE (10), APÁTHY (11), BANCROFT (17), BARBAGALLO & DRAGO (18), BASTIAN (19, 20, 21), BILLINGHURST (26), BLANCHARD (27, 28), BOYCOTT (42), BRAULT & LOEPER (47), BRUMPT (56, 57), CARAGEAN & MAROTEL (69), CAMERANO (64-68), CASTELLANI & WILLEY (73), CASELLA (72), CHALMERS (81), CONTE & BONNET (103), COSENTINO (105), DADAY (109), DALEAU (112), DYÉ (128), ENTZ (132), GEMMILL (154), GOLDSCHMIDT (167, 168), GUIART (175), HALDANE (180, 181, 182), HALL (183), HUBRECHT (204), JAMMES & MANDOUL (216), JANOWSKY (218), KENNARD (229), LINSTOW (260, 261, 267, 268), LOEB & SMITH (271), LOIR (272), LOOSS (275, 276), LOW (279, 280, 281), MAN (291), MONTICELLI (311), MOSSERI (324), PORTA (354), RAGAZZI (359), RANSOM (362), REMLINGER (369), ROHDE (376), SALA (390), SALMON (391, 392), SCHLEIP (400), SCHNEIDER (402, 404), SCHUBERG (407), SCHUBERG & SCHRÖDER (406), SELOUS (416), STRASSEN (438), TANIGUCHI (441), TRETJAKOFF (449, 450), VERDON (458), WELLMAN (467, 468), WOLTERECK (473), ZIMMERMANN (481).]

GENERAL BIOLOGY.

- Anatomy of various forms, LINSTOW (260).
 Anatomy of *Filaria loa* and *F. diurna*, BRUMPT (57).
 Anatomy of several spp., CAMERANO (64-68).
 Anatomy of male and female *Ichthyonema grayi*, GEMMILL (154).
 Anatomy, occurrence and hosts of *Filaria bancrofti*, TANIGUCHI (441).
 Anatomy of the developing *Ancylostomum duodenale*, LOOSS (276).
 Structure of epithelium of the ovarian and spermatid ducts of *Ascaris*, SALA (390).
 Histology of the ganglion cells in *Ascaris*, GOLDSCHMIDT (168).
 Histology of Nematodes, GOLDSCHMIDT (167).
 Structure of the cell, ROHDE (376).
 Practical demonstrations of parasitology, GUIART (175).
 Parasites of higher animals, organs attacked, mode of infection, symptoms, anatomy and biology of parasite, HALL (183).
 Fish parasites, SCHNEIDER (404).
 New parasite from a pigeon, SALMON (392).
 Arabs infected with *Filaria*, spp., REMLINGER (369).
 Parasites in the eyes of birds, RANSOM (362).
 Parasites of the *Culicidae*, DYÉ (128).
 Human parasites, BILLINGHURST (26).
 Child invaded by *Ascaris lumbricoides* at Budapest, CLARKE (87).

Mode of infection, KENNARD (229).

Mode of infection by *Filaria perstans*, BASTIAN (19, 20, 21).

A leech parasitised by a n. gen. and sp. of Nematode, SCHUBERG (407).

Tea crops damaged by *Tylenchus* in Java and Ceylon, ZIMMERMANN (481).

Life-history of *Filaria immitis*, BANCROFT (17).

Toxicity of *Ascaridæ*, COSENTINO (105).

Tumours caused in dogs by *Spiroptera*, PORTA (354).

Ankylostomiasis in Cornish miners, HALDANE (180, 181, 182).

Diagnosis of *Ankylostoma* infection, BOYCOTT (42).

Sleeping sickness in Uganda, treatment, CLARKE (85).

Typhoid fever, rôle of *Trichocephalus*, BLANCHARD (28).

Early development of *Polygordius*, WOLTERECK (473).

Glycogen and development of Cestodes and Nematodes, BRAULT & LOEPER (47).

Spermatogenesis and oogenesis in *Ascaris*, TRETJAKOFF (449, 450).

Simultaneous occurrence of *Filarie* and malarial parasites in the blood, SELOUS (416).

Faunistic, ENTZ (132).

Affinities, and relationships, HUBRECHT (204).

DISTRIBUTION.

Russia, n. spp., LINSTOW (267).

Saratov, n. spp., LINSTOW (267).

Birmingham, infection by Nematodes, CLARKE (88).

Gulf of Triest, *Polygordius* larvæ, JANOWSKY (218).

Homberg, epidemic of Trichinosis, SCHLEIP (400).

Naples, n. gen., STRASSEN (438).

Sicily, fish parasites, BARBAGALLO & DRAGO (18).

Africa, cases of human filariasis, BRUMPT (56).

Fez, case of filariasis, VERDON (458).

Egypt, plant gall diseases caused by *Heterodera radicola*, MOSSERI (324).

Congo, sleeping sickness, CLARKE (85).

Uganda, in a monkey, LOW (281).

West Central Africa, *Filaria*, n. sp., ? a new *Ascaris*, WELLMAN (468).

Buluwayo, dog parasitised by *Ascaris canis*, LOIR (272).

Turkestan, n. spp., DADAY (109).

North America, n. sp., LINSTOW (267).

United States, n. sp. in a pigeon, SALMON (392).

Guatemala, n. sp., CAMERANO (64).

Patagonia, n. sp., MAN (291).

Ceylon, n. spp., LINSTOW (268).

Ceylon, n. sp. in man, CASTELLANI & WILLEY (73).

Ceylon, man attacked by *Ascaris lumbricoides*, CHALMERS (81).

SYSTEMATIC.

Angiostoma helcis, in *Helix aspersa*, CONTE & BONNET, Ann. Soc. Linn. Lyon 1, pp. 63-68, 11 figg., n. sp.

Angiostomum serpenticola, North America, from the lung of *Heterodon platyrhinus*, LINSTOW, Centrbl. Bakter. xxxvii, p. 678, n. sp.

Ankylostoma causing anæmia in Cornish miners, HALDANE, Tr. Inst. Mining Eng., 6 pp., 8 figg., Rep. Sec. Home Dep. 1903, 13 pp., 1904, 104 pp.; *Ankylostoma* infection, BOYCOTT, Rep. Sec. Home Dep. 1904, 12 pp.; *A. caninum*, LOEB & SMITH, Centrbl. Bakter. xxxvii, pp. 93-98; *A. duodenale*, anatomy, LOOSS, Centrbl. Bakter. xxxv, pp. 752-762;

- A. (Uncinaria) duodenale*, development, ALESSANDRINI, Boll. Soc. zool. Ital. (3) v, pp. 147-166, 3 figg.; *A. duodenale*, parasiting the higher animals, mode of attack, anatomy and biology, HALL, Centrbl. Bakter. xxxv, pp. 145-156.
- Anthraconema*, **n. gen.**, Naples, STRASSEN, Zool. Jahrb. Suppl. vii, pp. 301-346, pls. xv & xvi, 9 figg.
- Aprocta cylindrica*, *A. orbitalis*, in eyes of birds, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, pp. 40 & 41, fig. 32-34.
- Ascaris*, histology of ganglion cells, GOLDSCHMIDT, Biol. Centrbl. xxiv, pp. 173-182, 2 figg.; *Ascaris*, bacterial properties, JAMMES & MANDOUL (216); *Ascaris* spp., histology, GOLDSCHMIDT, Zool. Jahrb. Anat. xxi, pp. 49-140, pls. iii-viii, 16 figg.; *A. canis*, Buluwayo, in a dog, LOIR, Arch. parasit. vii, p. 483; *A. lumbricoides*, structure of cells in the male and female organs, SALA, Rend. Ist. Lombardo xxxvii, 16, pp. 874-887, 1 pl.; in a child at Budapest, CLARKE, Homeopathic World xxxviii, pp. 475 & 476; in liver and pancreas of man, in Ceylon, CHALMERS, Spolia Zeylan. ii, 5, pp. 47-49, 2 figg.; *A. megalocephala*, var. *univalens*, var. *bivalens*, oogenesis, spermatogenesis, TRETJAKOFF, Arch. mikr. Anat. lxv, 2, pp. 358-383, pl. xxi, pp. 383-438, pls. xxii-xxiv, 1 fig.; *A. mystax*, in man, RAGAZZI, Ann. Med. Navale (9) ii, pp. 509-520.
- A. lunata*, Honduras, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 493, fig. 17; *A. rotundicaudata*, from *Calotes ophiomachus*, p. 92, pl. 1, fig. 1, *A. ceylanica* from *Haliastur indus*, fig. 2, *A. brachyura* from *Calotes versicolor*, p. 93, fig. 3, *A. quadrata* from *Crocodilus porosus*, fig. 4, Ceylon, LINSTOW, Spolia Zeylan. i, 4; *A. centridermichthys* from *Centridermichthys uncinatus*, p. 275, *A. euxina* from *Pelecanus minor*, p. 270, fig. 1, *A. septangularis* from *Aquila nobilis*, p. 271, fig. 2, *A. pallasii* from *Acipenser stellatus*, p. 271, fig. 3, *A. clupei-pontica* from *Clupea pontica*, p. 275, fig. 4, Russia, LINSTOW, Annuaire Mus. St. Petersb. viii : **n. spp.**
- Ceratospira vesiculosa*, *C. ophthalmica*, p. 30, figg. 23-25, in eyes of birds, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx.
- Chordodes skorikovi*, anatomy, CAMERANO, Boll. Mus. Torino xix, No. 469, 3 pp.
- C. gestri*, Guatemala, CAMERANO, Ann. Mus. Genova (3) i, pp. 93 & 94; *C. betularius*, Caspian Sea, anatomy, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 492, fig. 16 : **n. spp.**
- Chromadora dubiosa*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, p. 481, pl. xxvii, figg. 4 & 5, **n. sp.**
- Otenocephalus* **n. gen.** for *C. tiara* (= *Ascaris* Linstow) from *Varanus bengalensis*, Horana, LINSTOW, Spolia Zeylan. i, 4, p. 102, pl. ii, figg. 23-27.
- Cystoospora acipenseris*, anatomy and affinities, LINSTOW, Arch. Naturg. 1904, i, p. 297, figg. 1-6.
- Filaria*, case in Fez, VERDON, J. trop. Medicine vii, p. 197; *F. bancrofti*, *F. immitis*, *F. perstans*, *F. demarquayi*, parasites of the *Culicidae*, DYÉ, Arch. parasit. ix, pp. 46-57, 4 figg.; *F. bancrofti*, anatomy, occurrence, hosts, TANIGUCHI, Centrbl. Bakter. xxxv, pp. 492-500, 3 figg.; *F. campanulata*, *F. obtuso-caudata*, pp. 34 & 35, figg. 26-30, in eyes of birds, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx; *F. perstans*, connection with genus *Tylenchus*, Low, Lancet 1904, 1, p. 420 & 421, 4 figg., and p. 752; *F. perstans*, probable mode of infection by, and probability that it belongs to genus *Tylenchus*, BASTIAN, t. c. pp. 286 & 287, 1 fig., anatomy, pp. 643-645; *F. perstans*, *F. diurna*, *F. nocturna*, in Africa, in man, BRUMPT, C.R. Soc. Biol. lvi, pp. 758-760; *F. loa*, anatomy, LOOSS, Zool. Jahrb. Syst. xx, pp. 549-574, pl. xix; *F. loa*, *F. diurna*, anatomy, BRUMPT, C.R. Soc. Biol. lvi, pp. 630-632;

- F. medinensis*, *F. loa*, hosts, mode of attack, anatomy and biology, HALL, Centrbl. Bakter. xxxv, pp. 145-156; *F. sanguinis hominis*, *F. loa*, *F. immitis*, in Arabs, REMLINGER, C.R. Soc. Biol. lvii, pp. 76 & 77; *F. immitis*, life-history, BANCROFT, Brit. Med. J. 1904, 1, pp. 822 & 823, 2 figg.
- F. anthicola* from *Anthus richardi*, North China, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 272; *F. blini*, in the aorta of *Buffalus indicus*, CARAGEAN & MAROTEL, Rev. Gen. Med. vet. 1903, viii, pp. 447-454; *F. mansoni*, in man, Ceylon, CASTELLANI & WILLEY, Spolia Zeylan. ii, 6, p. 79; *F. celum*, Cameroon, from *Cephalobus*, p. 299, fig. 8, *F. quiscali* from *Quiscalus versicolor*, LINSTOW, Arch. Naturg. 1904, i, p. 300; *F. rossii*, Uganda, in a monkey, LOW, J. trop. Medicine vii, p. 2; *F. vivipara* from *Corvus splendens*, Colombo, LINSTOW, Spolia Zeylan. i, 4, p. 103, **n. spp.**
- Gongylonema ingluvicola* from a pigeon, SALMON, Bull. U. S. Dep. Agric. Animal Ind. lxiv, 3 pp., 2 figg., **n. sp.**
- Gordius cognettii*, anatomy, CAMERANO, Boll. Mus. Torino xix, No. 468, **n. sp.**
- Heterakis vesicularis*, in the dog, DALEAU, Pr.-verb. Soc. Linn. Bordeaux lix, p. lxvii.
- H. trilabium* from *Centropus sinensis*, Horana, p. 97, pl. i, fig. 9, *H. anomala* from *Tropidonotus piscator*, Colombo, p. 97, figg. 10 & 11, LINSTOW, Spolia Zeylan. i, 4, **n. spp.**
- Heterodera radicola*, Egypt, causing plant gall-diseases, MOSSERI, Bull. Inst. Egypt iv, i, pp. 5-35, 7 figg.
- Ichthyonema grayi*, anatomy, GEMMILL, Tr. Soc. Glasgow vi (3), pp. 299-301.
- Kalicephalus willei* in *Vipera russelli*, Colombo, LINSTOW, Spolia Zeylan. i, 4, p. 99, pl. 1, figg. 14-18, **n. sp.**
- Leptosomatium papillatum*, Behring Island, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 276, figg. 9 & 10, **n. sp.**
- Lintonia papillosa*, anatomy, MONTICELLI, Arch. Zool. ii, 1, pp. 117-124, pl. vii.
- Mermis piscinalis*, Saratow, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 490, **n. sp.**
- Monkhystera labiata*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, p. 480, pl. xxvii, figg. 1-3, **n. sp.**
- Myenchus* **n. gen.** for *M. bothryophorus* **n. sp.** in muscle cells of *Nephelis vulgaris* (= *Herpobdella atomaria* Carena), anatomy, SCHUBERG, Verh. Ver. Heidelb. vii, pp. 629-632; *M. bothryophorus*, in muscle of *Nephelis*, SCHUBERG & SCHRÖDER, Zeitschr. wiss. Zool. lxxvi, pp. 409-421, pl. xxx : **n. spp.**
- Neomermis* **n. gen.** for *N. macrolaimus* **n. sp.**, Saratow, LINSTOW, Arch. mikr. Anat. lxix, 3, p. 491, figg. 13-15.
- Oxyspirura mansonii* of chickens, symptoms, treatment, anatomy, life history and development, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, 25 pp., 18 figg.; *O. anacanthura*, p. 21, figg. 10 & 11, *O. anolabiata*, fig. 12, *O. brevipennis*, p. 22, fig. 13, *O. brevisubulata*, p. 23, *O. cephaloptera*, p. 23, figg. 14 & 15, *O. heteroclita*, p. 24, *O. mansonii*, p. 25, fig. 1-9, *O. ophthalmica*, p. 26, fig. 16-18, *O. papillosa*, p. 27, figg. 19 & 20, *O. siamensis*, p. 28, fig. 21, *O. stereura*, p. 29, *O. sygmoidea*, fig. 22, in eyes of birds, anatomy, synonymy, RANSOM, t. c.
- Oxyuris vermicularis*, occurrence, SCHNEIDER, Centrbl. Bakter. xxxvi, pp. 550-554; *O. tuberculata*, Australia, LINSTOW, Arch. Naturg. 1904, i, p. 300, fig. 9; *O. poculum* in horses, *O. acanthura* from *Calotes versicolor*, Ceylon, LINSTOW, Spolia Zeylan. i, 4, p. 101, pl. ii, fig. 19-22, **n. spp.**

- Parachordodes wolterstorffii*, *P. pleskei*, anatomy, CAMERANO, Boll. Mus. Torino xix, No. 470.
- Phyllodactylus europeus*, variations, CAMERANO, op. cit. No. 471, 28 pp.
- Physaloptera acuticauda*, *P. sp.* Parona, in eyes of birds, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, pp. 42 & 43, figg. 35-37.
- P. caucasica* in *Homo sapiens*, Caucasus, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 273, figg. 6-8, **n. sp.**
- Plectus (Plectoïdes) patagonicus*, Patagonia, anatomy, MAN, Ber. Senckenberg. Ges. 1904, pp. 41-46, 6 figg, **n. sp.**
- Polygordius* larvæ, Gulf of Triest, JANOWSKY, Arb. Inst. Wien xv, 2, pp. 197-212, 2 pls.
- P. neapolitanus*, Naples, *P. lacteus*, Helgoland, development, from egg to youngest trochophore stage, WOLTERECK, Arch. Entwicklmech. xviii, pp. 377-403, pls. xxii & xxiii + 11 figg.
- Rictularia paradoxa* in *Lemmus*, *Erinaceus* etc., LINSTOW, Annuaire Mus. St. Petersb. viii, p. 272, fig. 5, **n. sp.**
- Spiroptera tenuicauda* in eyes of *Crax tomentosa*, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, p. 39, fig. 31; *S. sanguinolenta* causing tumours in dogs, PORTA, Atti Soc. Modena (4) iv, 35, p. 40.
- S. abdominalis*, Madagascar, in *Otis melanogaster*, LINSTOW, Arch. Naturg. 1904, i, p. 299, fig. 7; *S. dentata* from *Sus cristatus* Cnilaw, p. 95, pl. i, figg. 5-7, *S. triangulum* from *Calotes ophiomachus*, Colombo, p. 96, fig. 8, LINSTOW, Spolia Zeylan. i, 4, **n. spp.**
- Strongylus gigas* in the kidney of a dog, CASELLA, Parma. Zerbini 1903, 3 pp.
- S. pigmentatus* from *Lepus nigricollis*, Ceylon, LINSTOW, Spolia Zeylan. i, 4, p. 98, pl. i, figg. 12 & 13; *S. quadriradiatus*, United States, in a pigeon, SALMON, Bull. U. S. Dep. Agric. Animal Ind. xlvii, 6 pp., 10 figg. : **n. spp.**
- Syngamus lari*, in eyes of birds, anatomy, RANSOM, Bull. U. S. Dep. Agric. Animal Ind. lx, p. 43, fig. 38-40.
- Tanqua* **n. gen.** for *Ctenocephalus* Linstow, BLANCHARD, Arch. parasit. viii, p. 478.
- Trichina*, at Homberg, epidemic, SCHLEIP, Verh. Ges. deutsch. Naturf. 1904, ii, pp. 59-62.
- Trichocephalus* in typhoid fever, BLANCHARD, Arch. parasit. ix, pp. 122-128.
- Tylenchus bioculatus*, on tea plants, Java and Ceylon, ZIMMERMANN, Ber. Land. Forstw. Deutsch. Ostafrika ii, pp. 11-36, pls. i-v.

ACANTHOCEPHALA.

[The following memoirs relate to *Acanthocephala*:—GIARD (158), LINSTOW (264, 267), LÜHE (282, 283), MARVAL (298), ROHDE (376), SCHNEIDER (403, 404).]

GENERAL BIOLOGY.

- Anatomy of *Echinorhynchus*, spp., LÜHE (283).
 Structure of the cell, ROHDE (376).
 Fish parasites, SCHNEIDER (404).
 Frogs parasitised by *Echinorhynchus hæruca*, GIARD (158).

DISTRIBUTION.

- North Russia, **n. sp.**, LINSTOW (267).
 Finland, fish parasites, SCHNEIDER (403).
 West Africa, **n. sp.**, LINSTOW (264).

SYSTEMATIC.

- Echinorhynchus* spp. described, LÜHE, Zool. Ann. i, 2, pp. 139–250; *E.* spp. anatomy and occurrence, LÜHE, t. c. pp. 139–250; *E. globulosus*, *E. acus*, p. 22, *E. angustatus*, p. 23, fig. 9, *E. clavula*, p. 27, *E. strumosus*, p. 29, Finland, anatomy, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3; *E. hæruca*, in frogs, GIARD, Feuille Natural. (4) xxxiv, p. 108.
- E. phoenix*, Finland, anatomy, SCHNEIDER, Acta Soc. Faun. Fenn. xxvi, No. 3, p. 25, fig. 10; *E. cestodicola*, from *Sebastes norvegicus*, Murman Coast, LINSTOW, Annuaire Mus. St. Petersb. viii, p. 278, figg. 11–14; *E. cestodiformis*, West Africa, from *Erinaceus albiventris*, LINSTOW, Centrbl. Bakter. xxxvi, p. 380, figg. 3 & 4 : **n. spp.**
- Gigantorhynchus mirabilis*, in birds, MARVAL, Rev. Suisse Zool. xii, pp. 573–583, **n. sp.**

CHÆTOGNATHA.

[The following memoirs relate to *Chætognatha*:—APÁTHY (11), BROWNE (54), FOWLER (146), HERDMAN (192), PAULSEN (346), STEVENS (436).]

GENERAL BIOLOGY AND DISTRIBUTION.

- Phosphorescence phenomenon in the Indian Ocean, HERDMAN (192).
 Ovogenesis of *Sagitta*, STEVENS (436).
 Iceland, plankton, PAULSEN (346).
 Bay of Biscay forms, FOWLER (146).

SYSTEMATIC.

- Krohnia hamata*, Bay of Biscay, FOWLER, Nature lxix, p. 381.
- Sagitta*, connected with phosphorescence phenomenon in the Indian Ocean, HERDMAN, Rep. Brit. Ass. 1903–1904, pp. 695 & 696; *S. elegans*, *S. bipunctata*, ovogenesis, STEVENS, Zool. Jahrb. Anat. xxi, pp. 242–252, pl. xvi; *S. serratodentata*, Bay of Biscay, FOWLER, Nature lxix, p. 381.
- Spadella*, Iceland, PAULSEN, Medd. Komm. Havund. i, p. 40; *S.*, Scilly Isles, BROWNE, J. Inst. Cornwall xvi, 1, pp. 120–132.

ROTIFERA.

[The following memoirs relate to *Rotifera*:—BEAUCHAMP (22), BREHM & ZEDERBAUER (49), CHANCEY (82), COLLIN (102), DADAY (109), GARRARD (153), HURRELL (206), ISSEL (208), JENNINGS (219), LINDER (259), LORD (278), MEISSNER (302), MURRAY (327), SKORIKOV (418, 419), SMITH (421), WEIGELT (466), YAKHONTOV (478), ZSCHOKKE (482, 483).]

GENERAL BIOLOGY.

- Asymmetry and its biological significance, JENNINGS (219).
 Summer plankton of the Neva, SKORIKOV (419).
 Bibliography for 1896, COLLIN (102).

DISTRIBUTION.

- River Neva, lists of spp. found, SKORIKOV (419).
 Lake Baical, list of spp. found, YAKHONTOV (478).

- Scotland, collections, MURRAY (327).
 Manchester, n. sp., LORD (278).
 Norfolk, ponds, collections, HURRELL (206).
 Paris, n. sp., BEAUCHAMP (22).
 Lac de Bret, n. spp., LINDER (259).
 Plön, collections, ZSCHOKKE (482).
 Geneva, n. sp., parasitic in *Trichodrilus*, ISSEL (208).
 Louisiana, n. sp., SMITH (421).

SYSTEMATIC.

- Balatro anguiformis*, genera, from *Trichodrilus*, ISSEL, Arch. Zool. ii, 1, pp. 1-9, pl. 1, **n. sp.**
Bdelloida, Scotland, collections, MURRAY, Ann. Scott. Nat. Hist., No. 51, 1904, pp. 160-166.
Cælopus inermis, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 240, fig. 9, **n. sp.**
Diaptomus denticornis in Alpine lakes, BREHM & ZEDERBAUER, Verh. Ges. Wien 1904, p. 54.
Diaschiza crassipes, Manchester, LORD, Tr. Manchester Micr. Soc. 1903, pp. 78-80, fig. 3, **n. sp.**
Drilophaga delagei, Paris, BEAUCHAMP, Bull. Soc. zool. France xxix, pp. 157-160, 3 figg., **n. sp.**
Gastropus bretensis, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 237, fig. 5, **n. sp.**
Mastigocera blanci, Lac de Bret, LINDER, t. c. p. 238, fig. 7, **n. sp.**
Melicerta ringens, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 517, fig. 85.
Notops falcipes, Lac de Bret, LINDER, Rev. Suisse Zool. xii, p. 238, fig. 6, **n. sp.**
Rattulidæ, biological significance of asymmetry, JENNINGS, Mark Anniv. Vol. pp. 317-337.
Rotifer vulgaris, WEIGELT, Mem. Cour. Ac. Belgique lxiv, p. 517, fig. 84.
Synchæta bicornis, Louisiana, anatomy, SMITH, Tr. Amer. Micr. Soc. xxv, pp. 121-126, pl. xviii, **n. sp.**

GASTROTRICHA.

[The following memoirs relate to *Gastrotricha*:—COLLIN (102), GIARD (159, 160), ZSCHOKKE (482).]

GENERAL BIOLOGY AND DISTRIBUTION.

- Bibliography for 1896, COLLIN (102).
 Plön, collections, ZSCHOKKE (482).
 France, Pas-de-Calais, n. sp., GIARD (159).
 France, Pas-de-Calais, n. genera and spp., GIARD (160).

SYSTEMATIC.

- Chætonotus marinus*, River Ambleteuse, Pas-de-Calais, GIARD, C.R. Soc. Biol. lvi, p. 1062, figg. 1-3, **n. sp.**
Philosyrtis **n. gen.** for *P. monotoides* **n. sp.**, River Ambleteuse, Pas-de-Calais, GIARD, t. c. p. 1065, fig. 2.
Zelinkia **n. gen.** for *Z. plana* **n. sp.**, River Ambleteuse, Pas-de-Calais, GIARD, t. c. p. 1063, fig. 1.

MESOZOA.

NERESHEIMER (331).

Lohmannella catenata, at Villafranca, NERESHEIMER, Zeitschr. wiss. Zool. lxxvi, pp. 137-166, pls. x & xi.

HEMICHORDA.

[The following memoirs relate to *Hemichorda*:—BENEDEN (456), BROWNE (54), CAULLERY & MESNIL (76), LONGCHAMPS (274), RITTER & DAVIS (375), SCHEPOTIEFF (398), SCHULTZ (409), SPENGEL (428-433).]

GENERAL BIOLOGY.

Anatomy of *Ptychodera* spp., SPENGEL (428-433).

Ecology, morphology, and speciology of the young of some Western North American Enteropneusta, RITTER & DAVIS (375).

Regeneration in *Phoronis*, SCHULTZ (409).

Development and anatomy, VAN BENEDEN (456).

DISTRIBUTION.

Heligoland, *Phoronis* n. sp., LONGCHAMPS (274).

SYSTEMATIC.

Actinotrocha branchiata, p. 33, *A. pallida*, p. 45, LONGCHAMPS, Wiss. Meeresuntersuch. vi, 1.

Asymmetron orientale, *A. macricaudatum*, Florida, PARKER, Bull. Mus. Harvard xlv, 2, pp. 46 & 47, pl. i, fig. 4, pl. ii, fig. 7, **n. spp.**

Branchiostoma pelagicum, Florida, PARKER, t. c. p. 40, pl. i, figg. 1 & 2, **n. sp.**

Glossobolanus elongatus, Gulf of Naples, SPENGEL, Zool. Jahrb. Anat. xx, pp. 315-362, pls. xx-xxii, **n. sp.**

Heteropleuron agassiz, *H. parvum*, pp. 43 & 44, pl. ii, figg. 5 & 6, Florida, PARKER, Bull. Mus. Harvard xlv, 2, **n. spp.**

Phoronis, development, VAN BENEDEN, Bull. Ac. Belgique 1903, pp. 1216-1232; *P.*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *P.*, Scilly Isles, BROWNE, J. Inst. Cornwall xvi, pp. 120-132; *P. gracilis*, anatomy, LONGCHAMPS, Wiss. Meeresuntersuch. vi, 1, p. 25.

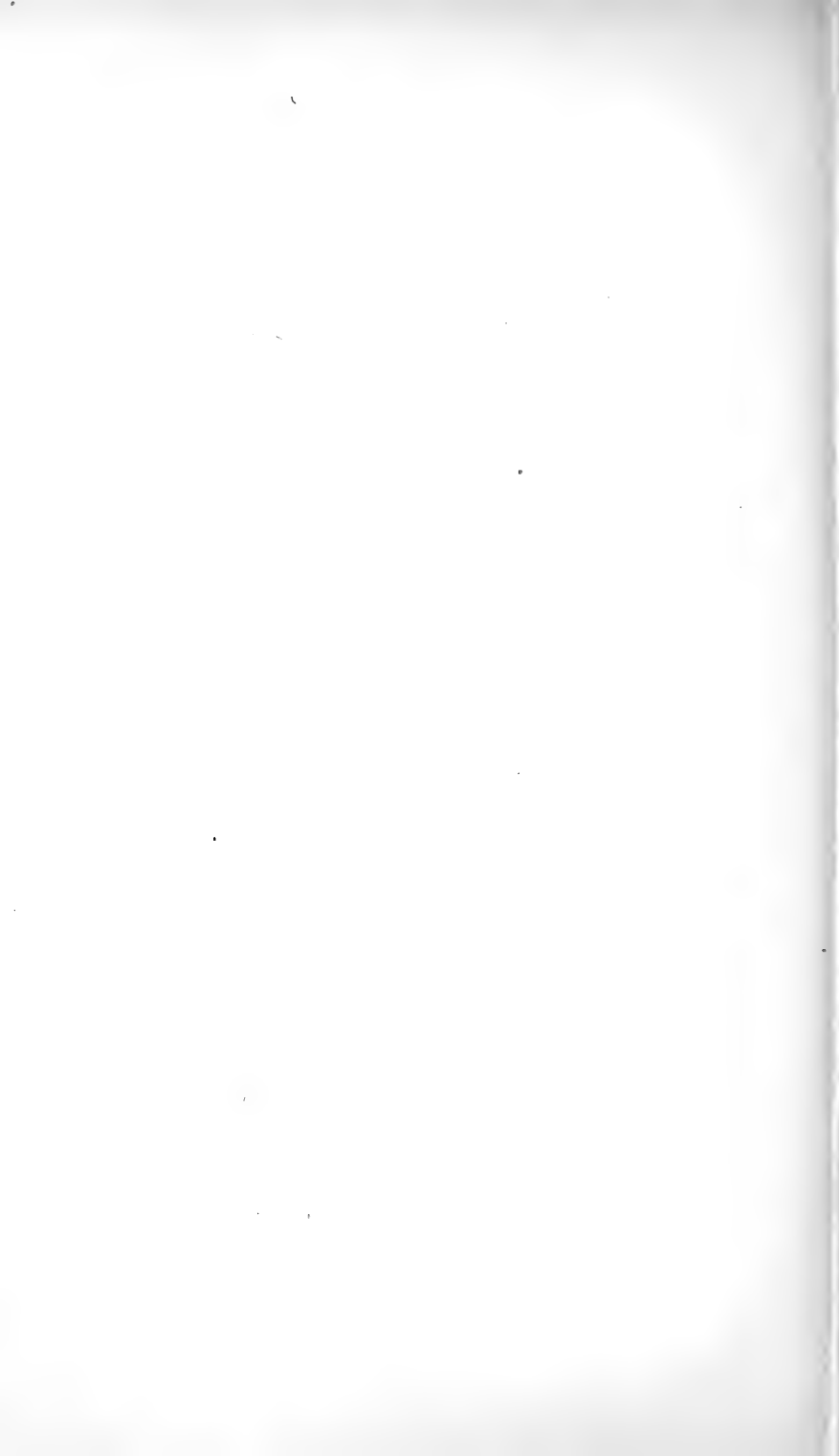
P. mülleri, Heligoland, LONGCHAMPS, t. c. p. 9, pl. i, **n. sp.**

Protobalanus **n. n.** for *Bolanocephalus koehleri* Caull. and Mesn., CAULLERY & MESNIL, Zool. Jahrb. Anat. xx, pp. 227-256, pls. xii & xiii.

Ptychodera flava, *Pt. erythræa*, anatomy, SPENGEL, Zool. Jahrb. Anat. xviii, pp. 271-326, pls. xxiv-xxix, xx, pp. 1-18, pls. i-ii, pp. 413-428, pp. 315-362, pls. xx-xxii.

Tornaria ritteri Spengel, Western North America, morphology, ecology, RITTER & DAVIS, Univ. Calif. Publ. Zool. i, 5, pp. 171-198, pls.

T. hubbardi, Western North America, morphology and ecology, RITTER & DAVIS, t. c. p. 198, pls., **n. sp.**



XVI. CŒLENTERATA.

By

ALICE L. EMBLETON, B.Sc., F.L.S.

CONTENTS.

| | Page | | Page |
|--|------|---|------|
| INTRODUCTION | 1 | IV. SCYPHOZOA :— | |
| TITLES | 3 | A. Subject Index :— | |
| I. GENERAL (= <i>Cœlenterata</i> collectively) | 15 | General Biology | 24 |
| Subject Index :— | | Geography | 24 |
| General Biology | 16 | B. Systematic | 24 |
| Geography | 16 | | |
| II. HYDROMEDUSAE (including <i>Hydrocorallina</i> and <i>Siphonophora</i>) :— | | V. ANTHOZOA (including <i>Alcyonaria</i> and <i>Zoantharia</i>) :— | |
| A. Subject Index :— | | A. Subject Index :— | |
| General Biology | 16 | General Biology | 25 |
| Geography | 17 | Geography | 25 |
| B. Systematic | 17 | B. Systematic | 26 |
| III. GRAPTOLITHIDA :— | | VI. CTENOPHORA :— | |
| A. Subject Index :— | | A. Subject Index :— | |
| General Biology | 22 | General Biology | 35 |
| Geography | 22 | Geography | 35 |
| B. Systematic | 22 | B. Systematic | 35 |

INTRODUCTION.

THE output of Cœlenterate literature this year is thoroughly satisfactory both as regards the number of memoirs and also from the point of view of the interest of the work published. There are ten more titles recorded this year than last, and most branches of the subject are well represented.

There are several very good morphological contributions this year by DUERDEN (49-52); he discusses septal sequence in the *Madreporaria*, and also the development and relationships of the rugose corals. The

Craspedote medusa, *Olindias*, and some of its allies forms the subject of a paper by GOTO (79), and GRAVIER (81) describes a pelagic *Cerianthe* from the Gulf of California, *Dactylactis benedeni* n. sp. HARGITT (94) adds to Hydroids a new species from Long Island Sound; in a second paper he deals with some *Hydromedusæ* from the Bay of Naples. There is a monograph by JUNGENSEN (125) on the *Pennatulidæ*, and JANOVER (122) has devoted much work to the study of the genus *Solenocaulon*. NUTTING'S (170) monograph on the *Sertularidæ* of America has appeared during the year, and TORREY (209, 210) has reported on the *Hydroids* and *Otenophora* of the San Diego region. Additions are made by VERRILL (220-225) to the *Anthozoa* and *Hydrozoa* of the Bermudas, West Indies and Brazil; he also has published some notes on the genus *Acropora*. The faunistic work of the year includes MAYER'S (155) paper on the *Medusæ* of the Bahamas, and McMURRICH'S (157) on the *Actiniæ* of the Plate Collection. HINDE (104) writes on the structure and affinities of the genus *Porosphaera*, and KINGSLEY (128) on *Cerianthus borealis*. From Japan (KISHINOUE (130)) we have some useful notes on the natural history of corals, and KITAHARA (131) reports on the coral fishery of Japan. The results of the dredging operations on the West Coasts of Central America and California have been given by MARENZELLER (152), and include a description of a new species of symbiotic Hydrocoralline. SWENANDER (206) describes the athecous Hydroids from Drontheim Fiord, and THOMSON (210) has a note on the gonostyles of two Antarctic *Siphonophora*. Hydroids collected in various parts of the world (outside Europe) are described by JÄDERHOLM (118) from the Swedish National Museum; he also has written on the Hydroids collected by the Swedish Antarctic Expedition of 1901-1903. DENNANT'S (35-38) four papers are descriptive of Australian recent and fossil forms; he gives many new species from the Australian Tertiaries.

There is a physiological paper by PRATT (177) on the assimilation and distribution of nourishment in *Aleyonium digitatum*. KREMPF (136) has noticed a transformation of the tentacle apparatus in certain species of *Madreporaria*. A chapter on Coral-reefs occurs in BRANNER'S (17) work on the stone corals of Brazil, while CROSSLAND (29) has studied the coral formations of Zanzibar and East Africa.

Matters of a wider biological interest are to be found in HUBRECHT'S (109, 110) papers on the relationships of various invertebrate phyla, of Annelids and Chordates, of Ctenophores and Platyhelminths. This is also touched upon by MICHAELSEN (159), and JENNINGS (123) work is upon asymmetry in certain lower organisms and its biological significance.

There are many papers again on regeneration and regulation. BORING (16) writes upon the closure of the longitudinally split Tubularian stems. CARLGREN'S (20) work on the correlation between regeneration and symmetry in *Actiniæ* is perhaps some of the most important that has appeared in this field of work this year. CHILD (24, 25) has written on form-regulation in *Cerianthus*, and GODLEWSKI (75) in *Tubularia mesembryanthemum*, while KING (127) did somewhat similar experiments on *Tubularia crocea*. HARGITT (93, 95) has published a note on regeneration in *Scyphomedusæ* and also on the budding tentacles of *Gonionemus*. It has been found, by LOEB (144), that sea-water has much influence on the regeneration and growth of Tubularians. MORGAN (162, 163) continues his work on regeneration and gives an analysis of organic polarity. YERKES (238) writes on the reaction time of *Gonionemus murbachii*. SCHULTZ (200, 201) also writes on regeneration. TORREY'S (208) work is on the habits and reactions, regeneration and non-sexual reproduction of *Sagartia davisii*. BILLARD (12) contributes to the study of multiplication, regeneration, grafting and variations in Hydroids, and DAVENPORT (34) discusses the variation in the stripes on the sea-anemone *Sagartia lucia*.

Cytologists will be interested in GORICH'S (76) memoir on spermatogenesis in Sponges and *Cælayerata*. GUENTHER (84) has carried on an allied enquiry in *Hydra viridis*; RETZIUS (183) too has worked on this subject. SCHNEIDER (199) has written an interesting note on the origin of the genital cells of Ctenophores.

Paleontological contributions are numerous. BOGATIREW (14) adds a new genus and six new species of Devonian forms from the Ural district. ELLES & WOOD (54) have now added another part to their monograph on British Graptolites. Graptolites from Sweden are described by HOLM (105, 106) and some new species from New York are recorded by RUEDEMANN (196), while HALL (87, 88) reports on those of Victoria. Swedish geological notes by HUENE (112) include a description of a medusa from the lower Silurian. FELIX (58-61) has given three memoirs on fossils from Egypt and also from the Jura region. Paleozoic corals are discussed by GRABAU (80).

Embryology is represented by some very good work this year. Students of this subject will be interested in HARGITT'S (91, 92) papers on the early development of *Eudendrium* and *Pennaria tiarella*. RUEDEMANN (195) describes the mode of growth and development of *Goniograptus thureaui*, and WOLTERECK (233) has followed the development of *Veella*.

ERRATA.

In Zool. Rec. 1903, p. 19, for *Turbularia* read *Tubularia*.

I. TITLES.*

1. [ANON.] Classification. Natural. Canad. xxxi, pp. 210-218. [*Cælayerata*, pp. 216-218, 4 figg.]
2. [ANON.] Marine Biological Association. Plymouth marine invertebrate fauna, being notes of the local distribution of species occurring in the neighbourhood. Compiled from the records of the laboratory of the Marine Biological Association. J. Mar. Biol. Ass. vii, 2, pp. 155-298, 1 chart. [*Cælayerata*, pp. 187-206.]
3. [ANON.] Use of Coral. Note in Tr. Woolhope Club 1900-1902, p. 102.
4. [ANON.] Borings into a coral reef. Nature lxi, pp. 582-585, 2 figg. Review of the report of the coral reef committee of the Royal Society. "The Atoll of Funafuti," 428 pp., 19 maps.
5. ABRIC, P. Sur le fonctionnement des nématocystes des Cælayerés. C.R. Soc. Biol. lvi, pp. 1008-1010.
6. —. Sur les nématoblastes et les nématocystes des Eolidiens. Op. cit. lvii, pp. 7-9.
7. ANNANDALE, N. *Porpita* in the Indian Seas. Nature lxx, p. 531.
8. ARKHANGHELSKII, A. D. Paleotzenovliza otlozheniya Saratovskagho Povolzhya i ikhzh fauna. Mat. Gheol. Rossii xxii, 1. *Cælayerata*, p. 61.
9. BANCROFT, FRANK W. Note on the galvanotropic reactions of the Medusa *Polyorchis penicillata* A. Agassiz. Univ. Calif. publ. Physiol. ii, pp. 43-46, 4 text-figg.

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Journal or Work referred to.

10. BEEDE, J. W. & ROGERS, A. J. Coal measure faunal studies, III. Lower Coal Measures. Kansas Univ. Sci. Bull. ii, 15, pp. 459-473.
11. BEMMELEN, v. J. F. Het ontstaan en de geaardheid van Koraalriffen en -eilanden. Bull. kol. Mus. Haarlem 1904, No. 30, p. 37.
12. BILLARD, A. Contribution à l'étude des Hydroides (multiplication, régénération, greffes, variations). Ann. Sci. nat. (8) xx, pp. 1-236, 6 pls.
13. —. Développement de l'hydranthe des *Campanulariidae* et des *Plumulariidae*. C.R. Ac. Sci. cxxxix, 2, pp. 1038-1040.
14. BOGATIREW, N. Korallen der devonischen Schichten im Ural. Trudui Kazan. Univ. xxxii, 5, 71 pp., 1 pl.
15. BOLTON, H. The palæontology of the Lancashire Coal Measures. Tr. Manchester Geol. Soc. xxviii. I. pp. 378-420. II. pp. 578-650. III. pp. 668-689.
16. BORING, ALICE M. Closure of longitudinally split Tubularian stems. Biol. Bull. vii, pp. 154-159.
17. BRANNER, J. C. The stone reefs of Brazil, their geological and geographical relations, with a chapter on the coral reefs. Bull. Mus. Harvard xlv, 285 pp., 97 pls.
18. BROWNE, E. T. & VALLENTIN, R. On the marine fauna of the Isles of Scilly. I. The pelagic fauna, E. T. BROWNE, pp. 120-128. II. The shore fauna, R. VALLENTIN, pp. 128-132. J. Inst. Cornwall xvi, 1.
19. CAPEDE, G. Sulla *Paronipora penicillata*, nuovo genere di corallario fossile, appartenente alla famiglia delle Favositidi. Riv. ital. Pal. x, 1, dp. 58-61, pls. ii & iii.
20. CARLGREN, O. Studien über Regenerations- und Regulationserscheinungen I. Über die Korrelationen zwischen der Regeneration und der Symmetrie bei den Actiniariern. Svenska Ak. Handl. xxxvii, No. 8, 105 pp., 11 pls., 23 text-figg.
21. —. Jahresbericht über die Anthozoen für das Jahr 1894. Arch. Naturg. 1897, ii, 3 [published in 1904].
22. CARY, L. R. Notes on a peculiar Actinozoan larva. Biol. Bull. vii, pp. 75-78, 4 figg.
23. CAULLERY, M. & MESNIL, F. Sur les affinités des Actinomyxides. C.R. Soc. Biol. lvi, pp. 411-413.
24. CHILD, C. M. Form regulation in *Cerianthus*. iv. Biol. Bull. vi, pp. 55-75, 266-287, 7 figg.; part v, vii, pp. 127-154; part vi, vii, pp. 193-215; part vii, vii, pp. 263-280.
25. —. Form-regulation in Cœlentera and *Turbellaria*. Smithsonian Collect. xlv, pp. 134-143.
26. CLARKE, J. M. Limestones of Central and Western New York interbedded with bituminous shales of the Marcellus stage, with notes on the nature and origin of their faunas. Rep. N. York Mus. lv, pp. 115-138. [List of fossils, p. 133.]
27. COOK, F. C. The chemical composition of some Gorgonian corals. Amer. J. Physiol. xii, pp. 95-98.
28. COUFFON, O. Étude critique sur les faluns du Haguineau. Bull. Soc. Angers xxxiii, pp. 35-85. [*Cœlenterata*, p. 40.]
29. CROSSLAND, C. The coral formations of Zanzibar and East Africa. Rep. Brit. Ass. 1903, pp. 685-687.

30. DACQUÉ, E. Beiträge zur Geologie des Somalilandes. I. Untere Kreide. Beitr. Pal. Oesterr.-Ung. xvii, pp. 11-20, pls. ii & iii.
31. DADAY, E. v. Mikroskopische Süßwasserthiere aus Turkestan. Zool. Jahrb. Syst. xxi, pp. 469-554, pls. xxvii-xxx, 5 figg.
32. DAINELLI, G. Contributo allo studio dell' Eocene medio dei dintorni di Ostroviza in Dalmazia. Atti Acc. Lincei (5) xiii, No. 5, pp. 277-282.
33. —. La fauna eocenica di Bribir in Dalmazia. Palæontogr. ital. x, 1904, pp. 141-273, pls. xv-xvii.
- DAINTREE, R. [See GREGORY & DAINTREE (83).]
34. DAVENPORT, GERTRUDE C. Variation in the number of stripes on the sea-anemone *Sagartia lucia*. Mark Anniv. Vol. 1903, New York, pp. 137-146, pl. x.
35. DENNANT, J. Descriptions of new species of corals from the Australian Tertiaries. VII. Tr. R. Soc. S. Austral. xxviii, pp. 52-76, pls. xxii-xxv.
36. —. Recent corals from the South Australian and Victorian coasts. T. c. pp. 1-11, pls. i & ii.
37. —. Catalogues of the described species of fossils (except *Bryozoa* and *Foraminifera*) in the Cainozoic fauna of Victoria, S. Australia and Tasmania. Rec. Geol. Surv. Victoria i, 2, pp. 89-147.
38. —. Report on fossiliferous ironstone conglomerate from Cape Patton. T. c. i, 1, p. 36. [*Anthozoa*.]
39. DESTINEZ, P. Faune et flore des psammites du Condroz (Famennien). Ann. Soc. geol. Belgique xxxi, 3, pp. 247-257. [*Calenterata*, p. 257.]
40. —. Nouvelles découvertes paléontologiques dans le Carboniférien et le Famennien du Condroz. T. c. xxxi, 1, pp. 143-151.
41. —. Fossiles viséens de Seille et de Comblain-au-Pont. Op. cit. 1899, xxvi, pp. cix-cxiii.
42. —. Quelques fossiles de Pair (Clavier), 1897. Op. cit. xxiv, pp. xxxviii & xxxix.
43. —. Troisième note sur les fossiles du marbre noir de Pair, 1898. Op. cit. xxv, pp. xxxiv-xxxvi.
44. —. Quatrième note sur les fossiles du calcaire de Pair, 1899. Op. cit. xxvi, pp. lviii & lix.
45. DEWALQUE, G. Les fossiles du Bolderberg et les fossiles boldériens. Ann. Soc. geol. Belgique xxv, pp. 117-122, 1899.
46. DIENER, C. Himalayan Fossils. I, 5. Permian Fossils of the Central Himalayas. Pal. Ind. xv, 204 pp., pls. i-x. [*Calenterata* pl. ii.]
47. DOLLFUS, G.-F. Faune malacologique du Miocène supérieur de Rennes (Étage Redonien, Gite d'Apigné) (Ille-et-Vilaine). C.R. Ass. Franc. xxxii, pp. 656-663.
48. DREVERMANN, F. Die Fauna der Siegener Schichten von Seifen unweit Dierdorf Westerwald. Palæontogr. l, 6, pp. 229-282.
49. DUERDEN, J. E. Some results on the morphology and development of recent and fossil corals. Rep. Brit. Ass. 1903, pp. 684 & 685. [Appeared also in Mem. Ac. Washington viii.]
50. —. Septal sequence in Coral *Siderastræa*. T. c. p. 687.

51. [DUERDEN, J. E.] The morphology of the *Madreporaria*. v. Septal sequence. Biol. Bull. vii, pp. 79-104, 9 figg.
52. —. The development and relationships of the Rugosa (*Tetracoralla*). Science xix, p. 217.
- 52A. —. The Coral *Siderastrea radians* and its post-larval development. Publ. Carnegie Inst. No. 20, 4to, 130 pp., xi plates.
53. ELLES, GERTRUDE L. Some Graptolite zones in the Arenig Rocks of Wales. Geol. Mag. i, 5, pp. 199-211, 3 figg.
54. — & WOOD, ETHEL M. R. A monograph of British Graptolites, edited by C. Lapworth. Pal. Soc. Mon. lviii, 1904, part iv, pp. liii-lxxii, 135+180, pls. xx-xxv.
55. ENTZ, G. Az édesvizek élete. Termes. Kozl. Magyar Tars. 1904, pp. 616-636, 9 text-figg.
56. ETHERIDGE, R. Determinations of Palæozoic and Mesozoic fossils. Rec. Geol. Surv. Victoria i, 1, pp. 10-12. [*Anthozoa*.]
57. FALKNER, C. & LUDWIG, A. Beiträge zur Geologie der Umgebung St. Gallens. Jahrb. St. Gall. Ges. 1901-1902, pp. 475-620.
58. FELIX, J. Zkřemenělé korály jako valouny v diluvín Slezska a Moravy. Vestník. Klub. Prostějove 1904, vi, pp. 108-116, 2 figg.
59. —. Polypiers du Sénonien Portugais. Commun. geol. Portugal v, 1904, pp. 375-388, 1 pl.
60. —. Studien über tertiäre und quartäre Korallen und Riffkalke aus Ägypten und der Sinaihalbinsel. Zeitschr. Deutsch. geol. Ges. lvi, 2, pp. 168-206, pl. x, 6 text-figg.
61. —. Die fossile Fauna des Libanesischen Jurakalkes. i. Die Anthozoenfauna des Glandarienkalkes. Beitr. Pal. Oesterr.-Ung. xv, pp. 165-183, pls. xvi & xvii.
62. FOERSTE, A. F. The Ordovician-Silurian contact in the Ripley Island area of Southern Indiana, with notes on the age of the Cincinnati geanticline. Amer. J. Sci. (4) xviii, pp. 321-342, 1 pl.
63. —. Silurian and Devonian Limestones of Tennessee and Kentucky. Bull. Geol. Soc. Amer. 1901, xi, pp. 395-444, 8 figg.
64. FORREST, H. E. Corals and Coral-reefs. Tr. Woolhope Club 1900-1902, p. 101.
65. FOURTEAU, R. Contribution à l'étude de la faune Crétacique d'Égypte. Bull. Inst. Égypte iv, 4, pp. 231-349. [*Anthozoa*, pp. 345-347, 4 figg.]
66. FOX, H. Geological notes. II. Supplementary notes on the distribution of fossils on the north coast of Cornwall south of the Camel. Tr. geol. Soc. Cornwall xii (9), pp. 753-759. [*Cæleenterata*, p. 755.]
67. FOX-STRANGWAYS, C. The geology of the Oolitic and Cretaceous rocks south of Scarborough. Mem. geol. Surv. England and Wales 54 & 55, pp. 1-112, xi pls, 12 text-figg.
68. GARDINER, J. S. Fauna...of the Maldive and Laccadive Archipelagoes. II, part 3. *Hydromedusæ* with a revision of the *Williadae* and *Petasiadae*, E. T. BROWNE, pp. 722-749.—*Madreporia*, parts 1 & 2, J. S. GARDINER, pp. 755-790.—*Antipatharia*, C. FORSTER-COOPER, pp. 791-796. [Will be recorded in detail in next year's volume.]
69. —. Coral-reefs of the Indian region. [4th report of the Committee.] Rep. Brit. Ass. 1903, pp. 305-308.

70. [GARDINER, J. S.] The formation of Coral-reefs. Nature lxi, pp. 371-373, 4 figg.
71. —. Corals. Science xx, pp. 765 & 766.
72. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Belgique i, 81 pp.
73. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. Trav. Lab. Arcachon vii, pp. 86-161.
74. Girty, G. H. The Carboniferous formations and faunas of Colorado. Prof. Papers U. S. Geol. Surv. 16, 1903, 546 pp.
75. GODLEWSKI, E., jun. Zur Kenntnis der Regulationsvorgänge bei *Tubularia mesembryanthemum*. Arch. Entwicklmech. xviii, pp. 111-160, pls. viii & ix, 7 figg.
76. GÖRICH, W. Zur Kenntnis der Spermatogenese bei den Poriferen und Cölenteraten nebst Bemerkungen über die Oogenese der ersteren. Zeitschr. wiss. Zool. lxxvi, pp. 522-543, pl. xxxi.
77. GORKA, S. Az állatok psychikai életéről. Allatt. Kozl. Magyar Tars. i, 1902, pp. 62-72.
78. —. Az állatok psychikai életéről. T. c. pp. 104-113, 8 figg.
79. GOTO, S. The craspedote medusa *Olindias* and some of its natural allies. Mark Anniv. Vol. New York, 1903, pp. 3-22, pls. i-iii.
80. GRABAU, A. W. Paleozoic coral-reefs. Bull. Geol. Soc. Amer. xiv, pp. 337-352, pls. xlvii & xlviii.
81. GRAVIER, C. Recherches sur un Cérianthaire pélagique du Golfe de Californie (*Dactylactis benedeni* n. sp.). Ann. Sci. nat. xx, pp. 253-289.
82. —. Sur la Méduse du Victoria Nyanza et la fauna des grands lacs africains. Bull. Mus. Paris 1903, pp. 347-352.
83. GREGORY, A. C. & DAINTREE, R. Fossils from the Carbo-permian of Queensland and Western Australia. P. Soc. Victoria xvi, 2, pp. 313-335.
84. GUENTHER, K. Keimfleck und Synapsis. Studien an der Samenreife von *Hydra viridis*. Zool. Jahrb. Suppl. vii, pp. 139-160, pl. xi.
85. GUPPY, R. J. L. Note on the discovery of corals in the harbour of Port-of-Spain. P. Inst. Trinidad iii, 1899, pp. 168 & 169.
86. GÜRICH, G. Eine Stromatoporidae aus dem Kohlenkalke Galiziens. Beitr. Pal. Oesterr.-Ung. xvii, pp. 1-5, pl. 1.
87. HALL, T. S. Reports on Graptolites. A revision of the species from Eastern Victoria. Rec. geol. Surv. Victoria i, 1, pp. 33-35, 2 figg.
88. —. Reports on Graptolites. T. c. 3, pp. 217-221, 2 figg.
89. HALL, M. A. & PRITCHARD, G. B. The Geology of the Barwon about Inverleigh. P. Soc. Victoria xvi, 2, pp. 292-305.
90. HARGITT, C. W. Notes on some *Hydromedusæ* from the Bay of Naples. Mt. Stat. Neapel xvi, 4, pp. 553-585, pls. xxi & xxii.
91. —. The early development of *Eudendrium*. Zool. Jahrb. Anat. xx, pp. 257-276, pls. xiv-xvi.
92. —. The early development of *Pennaria tiarella* McCr. Arch. Entwicklmech. xviii, pp. 453-488, pls. xxiv-xxviii.
93. —. Regeneration in *Scyphomedusæ*. Amer. Natural. xxxviii, pp. 517-519.

94. [HARGITT, C. W.]¹ Notes on a hitherto undescribed Hydroid from Long Island Sound. Biol. Bull. vii, pp. 251-253, 1 fig.
95. HARGITT, G. T. Budding tentacles of *Gonionemus*. Biol. Bull. vi, pp. 241-250, 9 figg.
96. HARTLAUB, C. Bericht über eine zoologische Studienreise nach Frankreich, Grossbritannien und Norwegen. Wiss. Meeresuntersuch. v, 2, pp. 97-106, 3 text-figg.
97. HAYDEN, H. H. Memoirs of the geological survey of India. Mem. geol. Surv. India xxxvi, i, pp. 1-129.
98. HEDLEY, C. The formation of coral-reefs. Nature lxx, p. 319.
99. HEICKE, A. Ein Beitrag zur Kenntnis der Weichteile der Madreporarier. Arch. Naturg. 1904, i, pp. 253-296, pl. xii.
100. HICKSON, S. J. Polymorphism in the *Pennatulida*. Rep. Brit. Ass. 1903, p. 688 [will be published in extenso in the reports of the Siboga expedition].
101. —. [President's address to the Zoological Section.] Rep. Brit. Ass. 1903, pp. 680-684. [Variation and regeneration in *Cæleenterata*.] New matter.
102. HIND, W. On the homotaxial equivalents of the Lower Culm of North Devonshire. Geol. Mag. i, 8, pp. 397-403.
103. HINDE, G. J. On the zone of Marsupites in the chalk at Beddington, near Croydon, Surrey. Geol. Mag. i, 10, pp. 482-487. [Lists of spp.]
104. —. On the structure and affinities of the genus *Porosphæra* Steinmann. J. R. Micr. Soc. 1904, pp. 1-25, pls. i & ii.
105. HOLM, G. Kinnekulles berggrund. Sveriges geol. Unders. Afh. C. 172, 1901, pp. 1-118, 4 pls. Graptolites, pp. 37-63, figg. 31-59.
106. —. Palæontologiska notiser. Op. cit. 179, 104 pp., 14 pls. Graptolites, pp. 101-104.
107. HOLMES, W. MURTON. List of fossils collected. [Surrey.] P. Croydon Club 1903-1904, pp. 45 & 46.
108. HOLMGREN, E. Zur Kenntnis der zylindrischen Epithelzellen. Arch. mikr. Anat. lxxv, 2, pp. 280-297, pls. xviii & xix, 5 figg.
109. HUBRECHT, A. A. W. On the relationship of various invertebrate phyla. P. Ac. Amsterdam, April 23, 1904, pp. 839-846.
110. —. Die Abstammung der Anneliden und Chordaten und die Stellung der Ctenophoren und Plathelminthen im System. Jena. Zeitschr. xxxix, 1, pp. 151-176.
111. HUDLESTON, W. H. On the origin of the marine (Halolimnic) fauna of Lake Tanganyika. Geol. Mag. i, 7, pp. 337-382, 2 pls.
112. HUENE, F. v. Geologische Notizen aus Oeland und Dalarne sowie über eine Meduse aus dem Untersilur. Centrbl. Mineral. 1904, pp. 450-461, 6 figg.
113. HUNTER, W., junr. Some reactions of *Mnemiopsis leydyi* (A. Ag.). Biol. Bull. vi, p. 324.
114. HUNTER, G. W. Some reactions of *Mnemiopsis leydyi*. Science xix, pp. 219 & 220.
115. HURRELL, H. E. *Polyzoa*. Tr. Norfolk Soc. vii, 5, p. 755. [*Hydra*, p. 756.]

116. HYDE, IDA H. Differences in electrical potential in developing eggs. Amer. J. Physiol. xii, pp. 241-275.
117. ISERLE, J. Zpráva o novém nálezšti fauny v břidlici pásma D-d₁₇, u Rokycan. SB. Bohmisch. Ges. 1903, xxix.
118. JÄDERHOLM, E. Aussereuropäische Hydroiden im schwedischen Reichsmuseum. Arkiv Zool. i (3), pp. 259-312, 4 pls.
119. —. Mitteilungen ueber einige von der Schwedischen Antarctic-expedition 1901-1903 eingesammelte Hydroiden. Arch. zool. exp. Notes (4) iii, pp. i-xiv.
120. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmischem Kreideformation. Jahrb. geol. Reichsanst. liv (1), 1904, pp. 75-90.
121. JANENSCH, W. Über *Heterocœnia provincialis* Mich. sp. eine Hexakoralle vom Habitus der Tubipora. Zeitschr. Deutsch. geol. Ges. lv, 4, pp. 486-493.
122. JANOWER, M. Die Gattung *Solenocaulon*. Rev. Suisse Zool. xii, pp. 495-538, pls. vii & viii.
123. JENNINGS, H. S. Asymmetry in certain lower organisms and its biological significance. Mark Anniv. Vol. 1903, New York, pp. 317-337.
124. JUKES-BROWNE, A. J. The Cretaceous rocks of Britain. The upper chalk of England. Mem. geol. Surv. U. K. iii, 1904, 566 pp. [*Anthozoa* and *Hydrozoa*, lists, pp. 503 & 504.]
125. JUNGENSEN, H. F. E. *Pennatulida*. Danish Ingolf. Exp. v, 1, 95 pp., 3 pls., 3 figg.
126. KARASKASCH, N. I. Note sur la faune contenue dans les galets de Bolschезemelskaïa toundra. Protok. St. Peterb. Obsheh. xxxv, 1904, 3. [French résumé, p. 162], pp. 130-146.
127. KING, H. D. Notes on regeneration in *Tubularia crocea*. Biol. Bull. vi, pp. 287-306, 7 figg.
128. KINGSLEY, J. S. A description of *Cerianthus borealis* Verrill. Tufts Coll. Stud. 1904, No. 8, pp. 345-361, 7 figg.
129. KINKELIN, F. Die Originale der paläontologischen Sammlung im Senckenbergischen Museum und die auf dieselben bezügliche Literatur. Ber. Senckenberg Ges. 1903, pp. 1-88. [*Calenterata*, list, pp. 52 & 53.]
130. KISHINOUE, K. Notes on the natural history of Corals. J. Imp. Fish. Bureau Tokyo xiv, 1, 32, pp., pls. i-ix.
131. KITAHARA, T. On the coral fishery of Japan. J. Imp. Fish. Bureau Tokyo xiii, 3, 14 pp., pls. i-v.
132. KITSON, A. E. Report on the Bryozoan limestone at Flinders. Rec. geol. Surv. Victoria i, 1, pp. 49-51. [List of *Anthozoa*.]
133. KNIPOWITSCH, N. Explorations zoologiques sur le bateau casse-glace "Ermak" en été de 1901. Annuaire Mus. St. Petersb. vi, pp. i-xx, 1 pl.
134. KOFORD, C. A. Biological survey of the waters of Southern California at San Diego. Science xix, pp. 505-508.
135. KOROTNEFF, A. DE. Résultats d'une expédition zoologique au lac Baïkal, pendant l'été de 1902. Arch. Zool. exp. (4) ii, xxxii, pp. 1-26.

136. KREMPF, A. Sur une transformation de l'appareil tentaculaire chez certains espèces de *Madrepora*. C.R. Ac. Sci. cxxxviii, pp. 1518-1521.
137. KÜKENTHAL, W. Ueber einige Korallentiere des Roten Meeres. Denk. Ges. Jena 1904, Hæckel Festschr. pp. 31-58, pls. iv & v.
138. LAMPLUGH, S. W., KILROE, J. R., M'HENRY, A., SEYMOUR, H. J., WRIGHT, W. B., MUFF, H. B. The Geology of the County of Belfast. Mem. geol. Surv. Ireland 1904, 166 pp.
139. *LAUTERBORN, R. Leonhard Baldners Vogel; Fisch- und Tierbuch. Ludwigshafen, 1903, lxvi, 177 pp.
Review by ZSCHOKKE, Zool. Zentrbl. xi, pp. 412-415.
140. —. Beiträge zur Fauna und Flora des Oberrheins und seiner Umgebung. Mt. Pollichia Jahrb. lx, 19, pp. 42-130.
141. LAWSON, A. C. The Orbicular Gabbro at Dehesa, San Diego Co., California. Univ. Calif. publ. Geol. iii, pp. 383-396, pl. 46.
LESPINEUX, G. [See MALAISE & LESPINEUX (150).]
142. LHOMME. Coquilles fossiles trouvées en 1903 dans les sables de Saint-Gobain (Yprésien). Feuille Natural. (4) xxxiv, pp. 103-106.
143. LINDER, C. Étude de la faune pélagique du Lac de Bret. Rev. Suisse Zool. xii, pp. 149-258, pl. iv.
144. LOEB, J. On the influence of the reaction of the sea-water on the regeneration and growth of Tubularians. [Translated from Pflüger's Arch. ci, p. 340, 1904, by J. B. MACCALLUM.] Univ. Calif. Publ. Physiol. i, 15, pp. 139-147.
145. LOPPENS, K. Bryozoaires et Cnidozoaires nouveaux pour la faune Belge trouvés par la plupart pendant l'année 1903. Bull. Soc. zool. Belgique xxxix, pp. xlv-xlvii.
146. —. Sur une variété de *Membranipora membranacea* L. et sur quelques animaux marins vivant dans l'eau saumâtre. Ann. Soc. zool. Belgique xxxviii, Bull. pp. cxlii & cxliii.
LUDWIG, A. [See FALKNER & LUDWIG (57).]
147. LUTHER, A. Planktologiska och hydrofaunistiska studier i Lojo Sjö under sommaren 1901. Medd. Soc. Faun. Fenn. xxviii, A, pp. 52-55.
148. MAAS, O. Revision des Méduses appartenant aux familles des *Cunanthidæ* et des *Æginidæ* et groupement nouveau des genres. Bull. Mus. Monaco, No. 5, 1904, 8 pp.
Abstract of a memoir which will appear in the publications of the scientific expeditions of the Prince of Monaco.
149. MAEHRENTHAL, F. C. v. Entwurf von Regeln der Zoologischen Nomenclatur. Als Grundlage für eine Neubearbeitung der internationalen Regeln der internationalen Nomenclatur. Zool. Ann. i, 2, pp. 89-138.
150. MALAISE, C. & LESPINEUX, G. Découverte de graptolithes à Neuville-sur-Meuse. Ann. Soc. geol. Belgique xxxi, 3, pp. 140 & 141.
151. MARCHAL, P. Recherches sur la biologie et le développement des Hyménoptères parasites. Arch. Zool. exp. xxxii, 3, pp. 257-335, pls. ix-xiii.
Discusses budding in various groups of animals.

152. MARENZELLER, E. v. Reports on the dredging operations of the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz, carried on by the U. S. Fish Comm. Steamer "Albatross," during 1891, Lieut. Comm. Z. L. Tanner, U.S.N. commanding. xxxiii, Stein- und Hydro-Korallen, 3 pls. xxxiv, *Lagisca irritans* sp. nov. ein Symbiont von Hydrokorallen, 1 pl. Bull. Mus. Harvard xliii, Nos. 2 & 3, pp. 75-94.
- 152A. —. Steinkorallen. Wiss. Ergebn. Valdivia vii, Lief. 3, pp. 261-318, pls. xiv-xviii.
153. MARTIN, HARRIETT A. *Verella spiralis* on the Cork coast. Irish Natural. xiii, p. 27.
154. MAYER, A. Medusæ of the Bahamas. Mem. Mus. Brooklyn i, 1, 33 pp., 7 pls.
155. —. Medusa fauna of the Bahamas. Amer. Natural. xxxviii, pp. 511-513.
156. MAXWELL, S. S. Comparative study of muscular tonus. Science xix, p. 249.
157. McMURRICH, J. P. The Actiniæ of the Plate Collection. Fauna Chilensis. Zool. Jahrb. Suppl. iii, 2, 1904, pp. 215-306, pls. xiv-xix, 5 figg.
158. MEISENHEIMER, J. Review of RÖMER & SCHAUDINN'S Fauna Arctica i, 1. Einleitung, Plan des Werkes und Reisebericht. Jena 1900, pp. 1-84, 2 pls. Zool. Zentrbl. xi, pp. 179-183.
MERY, JANET R. [See TORREY & MERY (211).]
MESNIL, N. [See CAULLERY & MESNIL (23).]
159. MICHAELSEN, W. Revision der compositen Styeliden oder Polyzoinen. Mt. Mus. Hamburg xxi, pp. 1-124, 2 pls.
Affinities of *Calenterata* discussed.
160. MOORE, J. E. S. The Victoria Nyanza jelly-fish. Nature lxix, p. 365.
161. MORGAN, J. The structure and growth of corals. Rep. E. Kent Soc. (2) i, pp. 7-14, 4 pls.
162. MORGAN, T. H. Notes on regeneration. Biol. Bull. vi, pp. 159-172.
163. —. An analysis of the phenomena of organic polarity. Science xx, pp. 742-748.
164. MUNTHE, H. Stratigrafiska studier öfver Gotlands Silurlager. Sveriges geol. Unders. Afh. No. 192, 55 pp.
165. NEVEU-LEMAIRE, M. LE. Mission scientifique de MM. G. de Créquimontfort et F. Sénéchal de la Grange dans l'Amérique du Sud. Bull. Soc. zool. France xxix, 4, pp. 82-89.
166. NOBRE, A. Subsídios para o estudo da fauna marinha do norte de Portugal. Ann. Sci. nat. Porto viii, pp. 37-94. [*Calenterata*, pp. 38-51.]
167. —. Subsídios para o estudo da fauna marinha do sul de Portugal. T. c. pp. 153-160. [*Calenterata*, p. 154, 4 spp.]
168. NOËL, C. Sur la faune des lydieunes du grès Vosgien. C.R. Ac. Sci. cxxxviii, pp. 1531-1533.

169. NUTTING, C. C. Preliminary description of a new family of gymno-blastic Hydroids from the Hawaiian Islands. *Science* xix, p. 217. [To be published as a report on the hydroids collected by the *Albatross*, U. S. Bureau of Fisheries.]
170. —. American Hydroids. Part II. The *Sertularidæ*. *Special Bull. U. S. Mus.* 1904, 151 pp., 41 pls.
171. D'OSSAT, DE A. Terza contribuzione allo studio della fauna fossile paleozoica delle Alpi Carniche. *Atti Acc. Lincei* (5) iv, pp. 84–120, 1 pl. [3 n. spp.]
172. PARKINSON, J. H. The zoning of the culm in South Germany. *Geol. Mag.* (5) i, pp. 272–276.
173. PARKES, W. A. A remarkable parasite from the Devonian rocks of the Hudson Bay Slope. *Amer. J. Sci.* xviii, pp. 135–140, 6 figg.
174. PERKINS, H. F. Studies of the morphology of *Hydromedusæ*. *Science* xix, pp. 250 & 251.
175. —. Double reproduction in the Medusa *Hybocodon prolifera*. *Amer. Natural.* xxxviii, p. 516.
176. POLÉNOFF, B. Description géologique de la partie nord-ouest de la 15-me feuille du VIII zone et de la partie sud-ouest de la 15-me feuille du VII zone de la carte générale du gouvernement Tomsk. *Trav. geol. St. Petersb.* iii, 1901, pp. 133–339.
177. PRATT, EDITH M. The assimilation and distribution of nutriment in *Aleyonium digitatum*. *Rep. Brit. Ass.* 1903, pp. 688 & 689.
PRITCHARD, G. B. [See HALL & PRITCHARD (89).]
178. RANSOME, F. L. The geology and ore deposits of the Bisbee Quadrangle, Arizona. *Prof. Papers U. S. Geol. Surv.* xxi, 1904, 112 pp. Lists of spp. pp. 36–38.
179. REGNY, VINASSA DE P. E. Fossili ed impronte del Montenegro. *Boll. Soc. geol. Ital.* xxiii, pp. 307–322, pl. ix.
180. REMEŠ, M. O zkamenělinách bludných balvanů z okolí Příbora. *Vestník. Klub. Prostejove* 1898, i, pp. 5–10.
181. —. Zkameněliny bludných balvanů z okolí Příbora. *Op. cit.* 1904, vi, pp. 107 & 108.
Note on paper of 1898.
182. RENZ, C. Zur Alterbestimmung des Carbons von Budua in Süd-Dalmatien. *Zeitschr. Deutsch. geol. Ges.* lv, pp. 16–22.
183. RETZIUS, G. Zur Kenntnis der Spermien der Evertebraten. *Biol. Untersuch.* xi, pp. 1–32, pls. i–xiii.
184. RICHE, A. Étude stratigraphique et paléontologique sur la zone à *Lioceras concavum* du Mont d'Or Lyonnais. *Ann. Univ. Lyon fasc.* xiv, 252 pp., viii pls. [*Cœlenterata*, p. 21, note of occurrence of *Trochocyathus calcar.*]
185. RICHET, C. Des effets prophylactiques de la thalassine et anaphylactiques de la congestive dans le virus des Actinies. *C.R. Soc. Biol.* lvi, pp. 302 & 303.
186. ROESINGER, G. La mode de vie des Graptolithes. *Arch. Sci. Nat.* xviii, pp. 199 & 200.

187. ROHDE, E. Untersuchungen über den Bau der Zelle. iv. Zum histologischen Wert der Zelle. Zeitschr. wiss. Zool. lxxviii, pp. 1-149, pls. i-vii.
188. ROSENFELD, G. Studien über das Fett der Meeresorganismen. Wiss. Meeresuntersuch. v, 2, pp. 57-85.
189. ROULE, L. Sur la place des Antipathaires dans la systématique, et la classification des Anthozoaires. C.R. Ac. Sci. cxxxviii, pp. 1621 & 1622.
190. —. La place des Antipathaires dans la systématique, et la classification des Anthozoaires. Bull. Mus. Monaco 1904, No. 16, 3 pp.
191. —. Note préliminaire sur quelques formes nouvelles de Cérianthaires. C.R. Ass. Franc. xxxii, pt. 2, pp. 791-793.
Note in pt. 1, p. 226 to same effect.
192. —. Sur un Cérianthaire nouveau. C.R. Ac. Sci. cxxxviii, pp. 708-710.
193. ROUSSEL, M. Tableau stratigraphique des Pyrénées. Bull. Carte geol. France xv, No. 97, pp. 1-116, 3 pls., 66 figg.
194. ROWE, A. W. The zones of the white chalk of the English coast. iv. Yorkshire. P. Geol. Ass. xviii (4), pp. 193-296, pls. xvii-xl. *Anthozoa*, p. 293.
195. RUEDEMANN, R. Mode of growth and development of *Goniograptus thureaui*. Rep. N. York Mus. lv, pp. 576-592, 19 figg.
196. —. The Graptolite (Levis) facies of the Beekmantown formation in Rensselaer Co. N. Y. T. c. pp. 545-575. [Several n. spp. unnamed and undescribed.]
197. —. Paleontologic Papers. II. Trenton conglomerate of Rysedorph Hill, Rensselaer Co., N. Y., and its fauna. T. c. pp. 3-114. [*Cœlenterata*, pp. 10-12.]
198. SCHEPOTIEFF, A. Zur organisation von *Rhabdopleura*. Bergens Mus. Aarbog 1901-2, 21 pp., 3 pls. [*Anthozoa* and *Hydromedusæ* mentioned.]
199. SCHNEIDER, K. C. Histologische Mitteilungen. i. Die Urogenitalzellen der Ctenophoren. Zeitschr. wiss. Zool. lxxvi, pp. 388-399, pl. xxiv.
200. SCHULTZ, E. Über Reduktionen. i. Über Hungererscheinungen bei *Planaria lactea*. Arch. Entwicklmech. xviii, pp. 555-577, pl. xxxiv. [Includes references to *Cœlenterata*.]
201. —. Regenerationsweisen. Biol. Centrbl. xxiv, pp. 310-317.
202. SEKERA, E. O původu zelené barvy u některých ploštěnek. Vestník. Klub. Prostějove vii, pp. 93-107.
203. SMYČKA, F. Novější nálezy v čelechovském devonu. Vestník. Klub. Prostějove 1905, vii, pp. 53-72, 1 pl. [*Cœlenterata*, pp. 54-60.]
204. SOBOLEW, D. Zur Stratigraphie des oberen Mitteldevons im polnischen Mittelgebirge. Zeitschr. Deutsch. geol. Ges. lvi, 3, pp. 63-72.
205. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante. Zapiski Kiev. Obshch. xviii, pp. i-xiii, 1-487, 1-216 + iv pls. [In Russian.]

206. SWENANDER, G. 'Über die athecaten Hydroiden des Drontheimsfjordes. Norske Selsk. Skr. 1903, No. 6, 18 pp., 1 pl.
207. THOMSON, J. A. Scotia collections. Note on the gonostyles of two Antarctic *Siphonophora*. P. Phys. Soc. Edinb. xvi, pp. 19-22.
208. TORREY, H. B. On the habits and reactions of *Sagartia davisi*. Biol. Bull. vi, pp. 203-216.
209. —. The Hydroids of the San Diego region. Univ. Calif. publ. Zool. ii, pp. 1-43, 23 text-figg.
210. —. The *Otenophores* of the San Diego region. T. c. pp. 45-51, pl. i.
211. — & MERY, JANET R. Regeneration and non-sexual reproduction in *Sagartia davisi*. Univ. Calif. publ. Zool. i, 6, pp. 211-226, 9 figg.
212. TOULA, F. Geologische Beobachtungen auf einer Reise in die Gegend von Silistria und in die Dobrudscha im Jahre 1892. Jahrb. geol. Reichsanst. liv, pp. 1-46, 3 pls., 19 figg.
213. TRINCI, G. Notizie sulla gemmazione della "*Dysmorphosa minuta*." A. G. Mayer e sulla biologia delle Margelidæ in generale. Monit. Zool. ital. xv, pp. 304-310.
214. TRUE, R. H. Artificial sea waters as tested in aquaria. Science xix, p. 252.
215. ULMER, G. Zur Fauna des Eppendorfer Moores bei Hamburg. Verh. Ver. Hamburg. naturw. xi, pp. 1-24, 1 pl.
216. ULRICH, E. O. & VAUGHAN, T. W. *Hydrozoa* and *Anthozoa*. Maryland geol. Surv. 1904, pp. 433-447.
217. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, 2, pp. 1-359, 3 pls.
218. VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeit. Ges. Erd. Berlin 1904, pp. 362-370, 11 figg.
219. VAUGHAN, A. Notes on the Corals and Brachiopods obtained from the Avon section and preserved in the Stoddart Collection. P. Bristol Soc. x, 2, pp. 90-134, 2 pls.
- VAUGHAN, T. W. (See ULRICH & VAUGHAN (216).]
220. VERRILL, A. E. Additions to the *Anthozoa* and *Hydrozoa* of the Bermudas. Tr. Connect. Ac. x (2), pp. 551-572, pls. lxvii-lxix.
221. —. Additions to the fauna of the Bermudas from the Yale Expedition of 1901 with notes on other species. Op. cit. xi (1), pp. 15-62, pls. i-xi.
222. —. Comparisons of the Bermudian, West Indian, and Brazilian Coral Faunae. T. c. pp. 168-206, pls. x-xxxv.
223. —. Variations and nomenclature of Bermudian, West Indian, and Brazilian Reef Corals, with notes on various Indo-Pacific Corals. T. c. pp. 63-168.
224. —. The Bermuda Islands. Op. cit. xi (2), pp. 413-913.
225. —. Notes on Corals of the genus *Acropora* (*Madrepora* Lam.) with new descriptions and figures of types, and of several new species. Op. cit. xi (1), pp. 207-266, pls. xxxvi A-xxxvi F.

226. VOELTZKOW, A. Bericht über eine Reise nach Ostafrika zur Untersuchung der Bildung und des Aufbaues des Riffe und Inseln des westlichen indischen Ozeans. III. Mafia und Sansibar. IV. Die Comoren. Zeit. Ges. Erd. Berlin 1904, pp. 274-301.
Review by MAX, Zool. Zentrbl. xi, pp. 435-437.
227. VOLZ, W. Zur Geologie von Sumatra. Beobachtungen und Studien. Geol. Pal. Abh. vi (2) 1904. [*Cælenterata*, pp. 100-110.]
228. WALTHER, J. Die Fauna der Solnhofener Plattenkalke bionomisch betrachtet. Denk. Ges. Jena 1904, pp. 133-214, pl. viii, 21 text-figg. [*Cælenterata*, pp. 161-164, fig. 13.]
230. WHITEAVES, J. F. Description of a new genus and species of rugose corals from the Silurian Rocks of Manitoba. Ottawa Natural. xviii, pp. 113 & 114.
231. WILSON, E. B. Mosaic development in the Annelid egg. Science xx, pp. 748-750. [Includes reference to *Cælenterata*.]
232. WOLLEMAN, A. Ein Aufschluss im Mukronatensenen bei Rotenkamp, nordwestlich von Königslutter. XIII. Jahresber. Ver. Braunschweig, pp. 40-42.
233. WOLTERECK, R. Ueber die Entwicklung der *Velella* aus einer in der Tiefe vorkommenden Larve. Erste Mt. über die Tiefenplankton-Fänge der Zoologischen Station in Villefranche. Zool. Jahrb. Suppl. vii, pp. 347-372, pls. xvii-xix, 6 figg.
234. WOLTERSTORFF, W. Beiträge zur Fauna der Tucheler Heide. Bericht über eine zoologische Bereisung der Kreise Tuchel und Schwetz im Jahre 1900. Schr. Ges. Danzig xi, 1 & 2, pp. 140-234, 1 pl. 1904.
235. WOOD, ELVIRA. Marcellus (Stafford) limestones of Lancaster, Erie Co. N. Y. Rep. N. York Mus. lv, pp. 139-181. [*Cælenterata*, pp. 154 & 155.]
236. WOOD, ETHEL M. R. The Graptolites of the Lower Ludlow Shales. P. Geol. Ass. xviii (9), pp. 446-451.
237. YAKOVLEVA, N. O morfologhii i morfogenhii korallovzh ghruppzhi *Rugosa*. Bull. Lab. St. Petersburg. vii, 2, pp. 87-101, 7 figg.
238. YERKES, R. M. The reaction-time of *Gonionemus murbachii* to electric and photic stimuli. Biol. Bull. vi, pp. 84-95. [Review, p. 324.]
239. YOKOYAMA, M. On some Jurassic fossils from Rikuzen. J. geol. Soc. Tokyo xi, p. 105. [In Japanese.]
240. ZELIZKO, J. V. Notiz über die Korallen des Mittelböhmischen Obersilur aus dem Fundorte "V. Kozle." Verh. geol. Reichsanst. 1904, pp. 304-306.

I. GENERAL

(i.e. works relating to *Cælenterata* collectively).

[The following memoirs refer to *Cælenterata* collectively:—CARLGREN (21), CAULLERY & MESNIL (23), GINESTE (73), HICKSON (101), HUBRECHT (109), HUDLESTON (111), LAUTERBORN (140), LUTHER (147), MICHAELSEN (159), ROHDE (187).]

SUBJECT INDEX (to General).

GENERAL BIOLOGY AND GEOGRAPHY.

Review of literature for 1894, CARLGREN (21).

Histology, structure of the cell, ROHDE (187).

Organogenesis and histogenesis from a phylogenetic point of view, GINESTE (73).

Organogenesis and histogenesis from the point of view of phylogeny, GINESTE (73).

Variation and regeneration, HICKSON (101).

Affinities of *Cœlenterata* discussed, MICHAELSEN (159).

Cœlenterate affinities to the *Actinomysidæ*, CAULLERY & MESNIL (23).

Relationships of invertebrates, HUBRECHT (109).

Finland, plankton collections, LUTHER (147).

Upper Rhine, collections, LAUTERBORN (140).

II. HYDROMEDUSÆ (or HYDROZOA).

[The following memoirs relate to *Hydromedusæ*:—ANNANDALE (7), BANCROFT (9), BILLARD (12, 13), BOGATIREW (14), BORING (16), BROWNE (18), CHILD (24), DADAY (31), GILSON (72), GODLEWSKI (75), GÖRICH (76), GORKA (77), GOTO (79), GRAVIER (82), GUENTHER (84), HARGITT (90-95), HARTLAUB (96), HOLMGREN (108), HURRELL (115), ISELER (117), JÄDERHOLM (118, 119), JENNINGS (123), JUKES-BROWNE (124), KING (127), LOEB (144), LOPPENS (145, 146), MARTIN (153), MAYER (154, 155), MAXWELL (156), MOORE (160), MORGAN (162, 163), NOBRE (166, 167), NUTTING (169, 170), PARKES (173), PERKINS (174, 175), SCHEPOTIEFF (198), SCHULTZ (200, 201), SWENANDER (206), THOMSON (207), TORREY (209), TRUE (214), ULRICH & VAUGHAN (216), VERRILL (220), VOLZ (227), WOLTERECK (233), YERKES (238), MARINE BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY.

Morphology of *Hydromedusæ*, PERKINS (174).

Histology of cylindrical epithelial cells, HOLMGREN (108).

Comparative study of muscular tonus, MAXWELL (156).

Asymmetry and its significance, JENNINGS (123).

Double reproduction in the medusa, *Hybocodon prolifera*, PERKINS (175).

Reaction time of *Gonionemus murbachii* to electric and photic stimuli, Biol. Bull. vi, pp. 84-95 & 324.

Artificial sea-waters as tested on *Gonionemus* in aquaria, TRUE (214).

Regeneration in *Tubularia* and *Hydra*, SCHULTZ (201).

Regeneration, MORGAN (163).

Regeneration in *Tubularia*, MORGAN (162).

Influence of the reaction of sea-water on regeneration and growth of Tubularians, LOEB (144).

Regeneration in *Tubularia crocea*, KING (127).

Closure of longitudinally split stems in *Tubularians*, BORING (16).

Regulation experiments in *Tubularia mesembryanthemum*, GODLEWSKI (75).

Multiplication, regeneration, graftings and variation, BILLARD (12).

Form-regulation, CHILD (24).

- Budding tentacles of *Gonionemus*, HARGITT (95).
 Spermatogenesis in *Hydra*, GUENTHER (84).
 Development of the hydranth, BILLARD (13).
 Development of *Eudendrium*, HARGITT (91).
 Development of *Veleva*, WOLTERECK (233).

GEOGRAPHY.

- Antarctic regions, n. spp., JÄDERHOLM (119).
 Antarctic *Siphonophora*, THOMSON (207).
 Norway, collections, HARTLAUB (96).
 Drontheim, collections, SWENANDER (206).
 Azores, collections, JÄDERHOLM (119).
 †Ural, Devonian forms, BOGATIREW (14).
 †England, upper chalk, Cretaceous forms, JUKES-BROWNE (124).
 Plymouth, n. spp., BROWNE (18).
 Cork coast, *Veleva spiralis*, MARTIN (153).
 Belgium, collections, LOPPENS (145).
 †Bohemia, faunistic, ISELER (117).
 Bay of Naples, n. spp., HARGITT (90).
 North and South Portugal, marine fauna, NOBRE (166, 167).
 Madeira, South Atlantic, South Africa, n. spp., JÄDERHOLM (118).
 Africa, Lakes Tanganyika and Victoria Nyanza, occurrence of jelly-fish, MOORE (160).
 Victoria Nyanza, *Limnocyda* spp., GRAVIER (82).
 American *Sertulariæ*, monograph, NUTTING (170).
 †Maryland, n. spp., ULRICH & VAUGHAN (216).
 †Hudson Bay Slope, Devonian rocks, n. gen., n. sp., PARKES (173).
 Long Island Sound, n. sp., HARGITT (94).
 California, collections, JÄDERHOLM (118).
 San Diego, n. spp., TORREY (209).
 Valparaiso, Brazil, Patagonia, Straits of Magalhaen, collections, JÄDERHOLM (118).
 Indian Seas, occurrence of *Porpita*, ANNANDALE (7).
 Indian Ocean, India, Antilles, Java, n. spp., JÄDERHOLM (118).
 Bahamas, medusæ, n. gen. and sp., MAYER (154).
 Bahamas, the medusa fauna, MAYER (155).
 Bermuda, n. spp., VERRILL (220).
 Japan, n. spp., GOTO (79).
 South Japan, Hongkong, n. sp., JÄDERHOLM (118).
 †Sumatra, n. sp., VOLZ (227).
 Hawaiian Islands, gymnoblastic hydroids, NUTTING (169).

SYSTEMATIC.

- Hydroids*, gynoblastic forms from the Hawaiian Islands, NUTTING, Science xix, p. 217.
Abietinaria abietina, p. 114, pl. xxxii, figg. 1-3, *A. variabilis*, p. 115, figg. 4-7, *A. inconstans*, p. 116, pl. xxxiii, figg. 1 & 2, *A. coli*, p. 117, figg. 3-5, *A. filicula*, p. 117, pl. xxxiv, fig. 1, *A. traski*, p. 118, pl. xxxiii, figg. 6-11, *A. anguina*, p. 119, pl. xxxiv, figg. 5-7, *A. compressa*, p. 120, pl. xxxv, figg. 3 & 4, *A. greenei*, p. 121, pl. xxxvi, figg. 1-8, *A. costata*, p. 122, pl. xxxvi, figg. 9-12, *A. annulata*, p. 122, figg. 13-15, *A. turgida*, pl. xxxvii, figg. 1 & 2, *A. gigantea*, p. 123, figg. 3-5, NUTTING, Special Bull. U. S. Mus. 1904.

- A. amphora*, p. 119, pl. xxxiv, figg. 2-4, *A. alexanderi*, p. 120, pl. xxxv, figg. 5-8, NUTTING, t. c. **n. spp.**
- Aglaophenia cylindrata*, Antilles, JÄDERHOLM, Arkiv Zool. i (3), p. 297, pl. xiv, fig. 2.
- A. heterodonta*, S. Africa, p. 296, pl. xiii, figg. 10-12, pl. xiv, fig. 1, *A. antarctica*, Straits of Magalhaen, p. 295, pl. xiii, figg. 8 & 9, JÄDERHOLM, t. c. **n. spp.**
- Aglaura hemistoma*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 26, pl. iv, fig. 34.
- Algina rhodina*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 27, pl. iv, figg. 28 & 29.
- Amphinema* **n. sp.**, Plymouth, BROWNE, J. Inst. Cornwall xvi, i, p. 124.
- Antennularia perrieri*, multiplication, regeneration, graftings and variation, BILLARD, Ann. Sci. nat. (8) xx, p. 217, **n. sp.**
- Bimeria gracilis*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 6, fig. 1.
- Bougainvillia niobe*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 11, pl. ii, figg. 14 & 15.
- B. gloriotta*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 7, figg. 2 & 3, **n. sp.**
- Campanularia flexuosa*, development of hydranth, BILLARD, C.R. Ac. Sci. cxxxix, 2, pp. 1038-1040.
- C. lennoxensis*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 268, pl. i, figg. 4 & 5; *C. subrufa*, *C. pedunculata*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. v & vi; *C. hesperia*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 12, fig. 4, **n. spp.**
- Cladonema perkinsii*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 18, pl. iv, fig. 35.
- Clytia bakeri*, p. 16, figg. 7-9, *C. hendersoni*, p. 18, figg. 10 & 11, *C. universitatis*, p. 19, figg. 12 & 13, San Diego, TORREY, Univ. Calif. publ. Zool. ii, **n. spp.**
- Corydendrium parasiticum*, Naples, anatomy, development, histology, HARGITT, Mt. Stat. Neapel xvi, 4, p. 577, pl. xxii, figg. 30 & 31.
- Cubaia aphrodite*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 21, pl. v, figg. 43-49.
- Cunoctantha* sp., Bahamas, MAYER, t. c. p. 27, pl. iv, figg. 36-42.
- Dictyocladium ftabellum*, NUTTING, Special Bull. U. S. Mus. 1904, p. 105, pl. xxviii, figg. 1 & 2, **n. sp.**
- Diphasia rosacea*, p. 107, pl. xxviii, figg. 4 & 5, *D. tamarisca*, p. 108, figg. 6 & 7, *D. fallax*, p. 109, pl. xxix, figg. 2-6, *D. digitalis*, p. 110, pl. xxx, figg. 2-7, *D. corniculata*, p. 112, pl. xxix, fig. 1, *D. kincaidi*, p. 112, pl. xxxi, figg. 7-9; NUTTING, t. c.
- D. tropica*, p. 110, pl. xxx, fig. 1, *D. pulchra*, p. 111, pl. xxxi, figg. 1-3, *D. paarmanni*, p. iii, figg. 4-6, NUTTING, t. c. **n. spp.**
- Diplocheilus allmani*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 36, **n. sp.**
- Epenthesis folleata*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 15, pl. iii, fig. 16.
- Eucheilota paradoxica*, Bahamas, MAYER, t. c. p. 16, pl. iii, figg. 17 & 18, p. vii, fig. 65.
- Euchilota* **n. sp.**, Plymouth, BROWNE, J. Inst. Cornwall xvi, i, p. 125.
- Eudendrium ramosum*, *E. capillare*, early development, HARGITT, Zool. Jahrb. Anat. xx, pp. 257-276, pls. xiv-xvi; *E. hyalinum*, Drontheim, SWENANDER, Norske Selsk. Skr. 1903, No. 6, p. 16, fig. 8.
- E. cyathiferum*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. ii, **n. sp.**
- Facelina coronata*, nematoblasts and nematocysts, ABRIC, C.R. Soc. Biol. lvii, pp. 7-9.

- Gemmaria implexa*, Naples, development, anatomy, histology, HARGITT, Mt. Stat. Neapel xvi, 4, p. 575, pl. xxii, figg. 27-29.
- Glossocodon tenuirostris*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 26, pl. iv, fig. 33.
- Gonionemus*, budding tentacles, HARGITT, Biol. Bull. vi, pp. 241-250, 9 figg.; *G.*, comparative study of muscular tonus, MAXWELL, Science xix, p. 249; *G.*, used in aquaria as a test for artificial sea waters, TRUE, Science xix, p. 252; *G. murbachii*, morphology, PERKINS, Science xix, p. 250 & 251; *G. vertens*, GORKA, Allatt. Kozl. Magyar Tars. i, 1902, p. 105, fig. 2; *G. murbachii*, reaction to electric and photic stimuli, YERKES, Biol. Bull. vi, pp. 84-95.
- G. depressum*, Yokohama, GOTO, Mark Anniv. Vol. 1903, New York, p. 12, figg. 10-13, 21 & 22, **n. sp.**
- Halecium gracile*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 266, pl. i, figg. 2 & 3.
- H. secundum*, *H. pallens*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. iii & iv, **n. spp.**
- Halicornaria vagæ*, *H. expansa*, South Japan, JÄDERHOLM, Arkiv Zool. i (3), pp. 301-304, pl. xv, figg. 1-7, **n. spp.**
- Halitiara formosa*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 8, pl. i, fig. 8.
- Hybocodon forbesii*, Bahamas, MAYER, t. c. p. 8, pl. ii, fig. 13; *H. prolifera*, double reproduction, PERKINS, Amer. Natural. xxxviii, p. 516; *H. prolifer*, morphology, PERKINS, Science xix, pp. 250 & 251.
- Hydra*, regeneration, MORGAN, Science xx, pp. 742-748; *H.*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *H. fusca*, Turkestan, DADAY, Zool. Jahrb. Syst. xxi, pp. 469-554, pls. xxvii-xxx, 5 figg.; *H. viridis*, spermatogenesis, GUENTHER, Zool. Jahrb. Suppl. vii, pp. 139-160, pl. xi.
- Hydractinia californica*, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 9; +*H. multispinosa*, Maryland, ULRICH, Maryland geol. Surv. 1904, p. 433, pl. cxxi, figg. 1-9, **n. spp.**
- Hydrallmania falcata*, p. 124, pl. xxxviii, figg. 1-4, *H. distans*, p. 126, figg. 5-9, *H. franciscana*, p. 126, fig. 10, NUTTING, Special Bull. U. S. Mus. 1904.
- Lafoëina longithecæ*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. iv, **n. sp.**
- Lampra socia*, Drontheim, SWENANDER, Norske Selsk. Skr. 1903, No. 6, p. 6, figg. 1-3, **n. sp.**
- Laodicea ulothrix*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 14, pl. iv, fig. 30.
- Limnocyclus sowerbii*, *L. tanganyicæ*, GRAVIER, Bull. Mus. Paris 1903, pp. 347-352.
- Liriope scutigera*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 25, pl. iv, fig. 31.
- Lymnorea alexandri*, Bahamas, MAYER, t. c. p. 10, pl. i, figg. 1-5.
- Lytocarpus gracilicaulis*, South Japan, JÄDERHOLM, Arkiv Zool. i (3), p. 299, pl. xiv, figg. 3 & 4, **n. sp.**
- +*Milleaster* **n. gen.** for *M. incrustans*, *M. subramosus* **n. spp.**, ULRICH, Maryland geol. Surv. 1904, pp. 436 & 437, pl. cxxi, figg. 10 & 11.
- +*Myriopora* **n. gen.** for *M. verbeeki* **n. sp.**, Sumatra, VOLZ, Geol. Pal. Abh. vi, p. 102, figg. 36-45.
- Myriothela austro-georgiæ*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. ii, **n. sp.**
- Netocertoides brachiatum*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 12, pl. i, fig. 7.
- Obelia* sp. Bahamas, MAYER, t. c. p. 16, pl. iii, figg. 19 & 20.
- O. austro-georgiæ*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes

- (4) iii, p. vii; *O. corona*, San Diego, TORREY, Univ. Calif. publ. Zool. v, p. 14, figg. 5 & 6 : **n. spp.**
- Ocania mc'cradyi*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 15, pl. iii, figg. 23 & 24.
- Olindias tenuis*, Bahamas, MAYER, t. c. p. 23, pl. v, figg. 50-52, pl. vi, figg. 53-59.
- Olindoides* **n. gen.** for *O. formosa* **n. sp.**, Japan, GOTO, Mark Anniv. Vol. 1903, p. 3, figg. 1-9, 14-20.
- Pachycordyle weismanni*, anatomy, histology, Naples, HARGITT, Mt. Stat. Neapel xvi, 4, p. 553, pl. xxi, figg. 1-8, **n. sp.**
- Parvanemus* **n. gen.** for *P. degeneratus* **n. sp.**, Bahamas, MAYER, Mem. Mus. Brooklyn i, 1, p. 6, pl. iii, fig. 22.
- Pasythea quadridentata*, NUTTING, Special Bull. U. S. Mus. 1904, p. 75, pl. xiii, figg. 4-7.
- Perigonimus napolitanus*, Naples, development and structure, HARGITT, Mt. Stat. Neapel xvi, 4, p. 571, **n. sp.**?
- Phortis pyramidalis*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 17, pl. iii, fig. 25.
- Plumularia curvata*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. xiii, **n. sp.**
- Polyorchis penicillata*, galvanotropic reactions, BANCROFT, Univ. Calif. publ. Physiol. ii, pp. 43-46, 4 figg.
- Porpita* in the Indian Seas, ANNANDALE, Nature lxx, p. 531.
- Schizotrichia anderssoni*, *S. antarctica*, Antarctic regions, JÄDERHOLM, t. c. pp. xi & xii, **n. spp.**
- Selaginopsis mirabilis*, p. 128, pl. xxxviii, figg. 11 & 12, *S. pinaster*, p. 128, fig. 13, *S. triserialis*, p. 129, pl. xxxix, figg. 1 & 2, *S. cedrina*, p. 130, *S. pinnata*, p. 130, pl. xxxix, fig. 6, *S. cylindrica*, p. 131, figg. 7 & 8, *S. obsoleta*, p. 132, pl. xxxix, figg. 4 & 5, *S. alternitheca*, p. 133, pl. xl, figg. 5 & 7, NUTTING, Special Bull. U. S. Mus. 1904.
- S. plumiformis*, p. 129, pl. xxxix, fig. 3, *S. ornata*, p. 131, pl. xl, figg. 1-3, *S. hartlaubii*, p. 133, fig. 8, NUTTING, t. c.; *S. pachyclada*, *S. affinis*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. x & xi, **n. spp.**
- Sertularella halecina*, *S. turgida*, San Diego, anatomy, affinities, TORREY, Univ. Calif. publ. Zool. ii, pp. 26-29, figg. 14-18, 22 & 23; *S. conica*, p. 79, pl. xv, figg. 1 & 2, *S. catena*, p. 80, fig. 3, *S. quadrata*, figg. 4-6, *S. geniculata*, p. 81, pl. xvi, fig. 2, *S. patagonica*, p. 81, fig. 3, *S. rugosa*, p. 82, pl. xvii, figg. 1-5, *S. tenella*, p. 83, pl. xviii, fig. 1 & 2, *S. allmani*, p. 84, figg. 3-6, *S. contorta*, p. 85, figg. 7-9, *S. lutea*, p. 85, fig. 10, *S. albida*, p. 86, pl. xix, figg. 1 & 2, *S. pinnigera*, p. 86, fig. 3, *S. cylindritheca*, p. 87, fig. 4, *S. gigantea*, fig. 7, *S. distans*, p. 88, fig. 56, *S. amphorifera*, pl. xx, figg. 1 & 2, *S. fusiformis*, p. 89, figg. 3 & 4, *S. picta*, p. 90, figg. 5-7, *S. polygonais*, pl. xxi, figg. 1 & 2, *S. clausa*, p. 93, figg. 3 & 4, *S. pinnata*, p. 94, figg. 10-12, *S. margaritacea*, p. 95, pl. xxii, fig. 1, *S. turgida*, p. 95, figg. 2-5, *S. sieboldi*, p. 96, figg. 6 & 7, *S. subdichotoma*, p. 96, figg. 8-12, *S. filiformis*, p. 97, pl. xxiii, figg. 1-3, *S. quadrifida*, p. 97, figg. 4-7, *S. milneana*, p. 98, pl. xxiv, figg. 2-5, *S. magellanica*, p. 99, figg. 6-8, *S. dentifera*, p. 100, pl. xxv, figg. 1-7, *S. tricuspidata*, figg. 3-7, *S. tropica*, p. 102, pl. xxvi, figg. 3 & 4, *S. clarkii*, p. 102, pl. 5, *S. episcopus*, p. 103, fig. 7, *S. formosa*, p. 104, pl. xxvii, figg. 2-4, *S. nana*, p. 105, pl. xxvi, fig. 6, synonymy, anatomy, NUTTING, Special Bull. U. S. Mus. 1904.
- S. pedrensis*, San Diego, TORREY, t. c. p. 27, figg. 19-21; *S. plana*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 279, pl. xii, fig. 9, pl. xiii, figg. 1 & 2; *S. pulchella*, *S. glacialis*, *S. elongata*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, pp. viii-x; *S. tanneri*, p. 81, pl. xvi, fig. 1, *S. areyni*, p. 83, pl. xvii, fig. 6, *S. solitaria*, p. 89, pl. xx, figg. 10 & 11,

- S. megastoma*, p. 90, pl. xx, figg. 8 & 9, *S. complexa*, p. 94, pl. xxi, figg. 5-9, *S. meridionalis*, p. 98, pl. xxiii, figg. 8 & 9, *S. elegans*, p. 98, pl. xxiv, fig. 1, *S. minuta*, p. 99, pl. xxiv, figg. 9 & 10, *S. levinseni*, p. 100, pl. xxvi, figg. 1 & 2, *S. magna*, p. 103, pl. xxvii, fig. 1, *S. hartlaubii*, p. 104, pl. xxvii, fig. 5, NUTTING, Special Bull. U. S. Mus. 1904: **n. spp.**
- Sertularia curta*, Indian Ocean, JÄDERHOLM, Arkiv Zool. i (3), p. 285, pl. xiii, figg. 3 & 4, **n. sp.**
- S. pumila*, p. 51, pl. i, figg. 1-3, *S. operculata*, p. 54, pl. ii, figg. 3-5, *S. pulchella*, p. 55, pl. ii, figg. 6 & 7, *S. bispinosa*, p. 56, pl. ii, figg. 8-11, *S. desmoides*, p. 56, pl. iii, figg. 1-3, *S. gracilis*, p. 57, pl. iii, fig. 10, *S. cornicina*, p. 58, pl. iv, figg. 1-5, *S. brevicyathus*, p. 60, pl. vi, figg. 1 & 2, *S. tumida*, p. 60, pl. vi, fig. 5, *S. exigua*, p. 61, pl. vi, fig. 6, NUTTING, Special Bull. U. S. Mus. 1904.
- S. versluysi*, p. 53, pl. i, figg. 4-9, *S. challengerii*, p. 54, pl. ii, figg. 1 & 2, *S. rathbuni*, p. 57, pl. iii, figg. 4-9, *S. mayeri*, p. 58, pl. v, figg. 1-4, *S. pourtalesii*, p. 59, fig. 5, *S. stookei*, p. 59, figg. 6 & 7, *S. flowersi*, p. 60, pl. vi, figg. 3 & 4, NUTTING, t. c. **n. spp.**
- Siphonophora*, gonostyles of two Antarctic forms, THOMSON, P. Phys. Soc. Edinb. xvi, pp. 19-22.
- Stomotoca australis*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 9, pl. i, fig. 9.
- Stylactis affinis*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 264, pl. i, fig. 1, **n. sp.**
- Syncoryne linvillei*, Long Island Sound, HARGITT, Biol. Bull. vii, pp. 251-253, 1 fig.
- Syndictyon angulatum*, Bahamas, MAYER, Mem. Mus. Brooklyn i, 1, p. 7, pl. i, fig. 6.
- Syntheicum tubithecum*, p. 134, pl. xli, fig. 1, *S. marginatum*, p. 135, pl. xli, fig. 3, *S. cylindricum*, p. 136, fig. 7, NUTTING, Special Bull. U. S. Mus. 1904; *S. tubithecum* (n. n. for *Sertularia* Allman) Antilles, JÄDERHOLM, Archiv Zool. i (3), p. 291, pl. xiii, fig. 7.
- S. rectum*, p. 135, pl. xli, fig. 2, *S. robustum*, p. 136, figg. 4-6, NUTTING, Special Bull. U. S. Mus. 1904; *S. protectum*, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), p. 290, pl. xiii, figg. 5 & 6: **n. spp.**
- Tetracannota collapsa*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 12, pl. iv, fig. 32.
- Tiara superba*, Bahamas, MAYER, t. c. p. 9, pl. ii, fig. 11.
- Tiarella singularis*, structure, HARTLAUB, Wiss. Meeresuntersuch. v, 2, pp. 97-106, fig. 2.
- Tiaropsis punctata*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 14, pl. iii, fig. 21.
- Thuiaria thuja*, p. 62, pl. vii, figg. 1-3, *T. elegans*, p. 64, pl. vii, fig. 4, *T. robusta*, pl. viii, figg. 5-7, *T. thuiaroides*, figg. 1-6, *T. polycarpa*, p. 65, figg. 7-9, *T. kurilæ*, pl. ix, figg. 1 & 2, *T. lonchitis*, p. 66, figg. 5-8, *T. plumulifera*, p. 67, figg. 9-13, *T. diffusa*, p. 68, pl. x, figg. 1-3, *T. similis*, p. 69, figg. 7-9, *T. tubuliformis*, p. 70, pl. xi, figg. 1-8, *T. tenera*, figg. 9-12, *T. fabricii*, p. 71, pl. xii, figg. 1 & 2, *T. argentea*, p. 71, fig. 3-9, *T. cupressina*, p. 72, pl. xiii, figg. 1-3, NUTTING, Special Bull. U. S. Mus. 1904.
- T. immersa*, p. 66, pl. ix, figg. 3 & 4, *T. dalli*, p. 68, pl. x, figg. 4-6, NUTTING, t. c. **n. spp.**
- Thyroscyphus torresii*, India, JÄDERHOLM, Arkiv Zool. i (3), p. 273, pl. xii, fig. 6.
- T. repens*, Antarctic regions, JÄDERHOLM, Arch. zool. exp. Notes (4) iii, p. vii, **n. sp.**
- †*Tristylotus* **n. gen.** for *T. hexagonus* **n. sp.**, a remarkable parasite from the Devonian rocks of the Hudson Bay Slope, PARKES, Amer. J. Sci. xviii, pp. 135-140, 6 figg.

- Tubularia* form-regulation, CHILD, Smithson. Collect. xlv, pp. 134-143;
T. spp., influence of the reaction of sea-water on the regeneration and growth, LOEB, Univ. Calif. publ. Physiol. i, 15, pp. 139-147;
T., regeneration, MORGAN, Biol. Bull. vi, pp. 159-172; *T.*, regeneration, SCHULTZ, Biol. Centrbl. xxiv, pp. 310-317; *T. mesembryanthemum*, regulation, GODLEWSKI, Arch. Entwicklmech. xviii, pp. 111-160, pls. viii & ix, 7 figg.; *T. mesembryanthemum*, development, anatomy, histology, HARGITT, Mt. Stat. Neapel xvi, 4, p. 563, pl. xxi, figg. 9-24;
T. crocea, regeneration, KING, Biol. Bull. vi, pp. 287-306, 7 figg.;
T. crocea, closure of longitudinally split stems, BORING, op. cit. vii, pp. 154-159; *T. regalis*, *T. indivisa*, Drontheim, SWENANDER, Norske Selsk. Skr. 1903, No. 6, pp. 8-10, figg. 4-7.
Veleva, development, WOLTERECK, Zool. Jahrb. Suppl. vii, pp. 347-372, pls. xvii-xix, 6 figg.; *V. spiralis*, on the Cork Coast, MARTIN, Irish Natural. xiii, p. 27.
Willia ornata, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 13, pl. ii, fig. 12.
Zygodactyla cyanea, Bahamas, MAYER, t. c. p. 17, pl. iii, figg. 26 & 27.
Zygophylax operculata, Patagonia, JÄDERHOLM, Arkiv Zool. i (3), pp. 276-278, pl. xii, figg. 7 & 8, n. sp.

III. GRAPTOLITHIDA.

[The following memoirs refer to *Graptolithida*:—ELLES (53), ELLES & WOOD (54), HALL (87, 88), HOLM (105, 106), ISELE (117), LAMPLUGH (138), MALAISE & LESPINEUX (150), NOËL (168), ROESINGER (186), ROUSSEL (193), RUEDEMANN (195, 196, 197), USSING (217), WOOD (235).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

- +Mode of life, ROESINGER (186).
- +Mode of growth and development of *Goniograptus thureauvi*, RUEDEMANN (195).
- +Swedish forms, list of spp. found, HOLM (105).
- +Swedish forms, HOLM (105).
- +Britain, n. spp., history of forms, synonymy, and anatomy, ELLES & WOOD (54).
- +Belfast, spp. found, LAMPLUGH etc. (138).
- +Wales, Arenig Rocks, lists of spp. found and localities, ELLES (53).
- +Lower Ludlow shales, spp., WOOD (235).
- +Denmark, spp. found, USSING (217).
- +Grès Vosgien, Epinal, graptolite fauna, NOËL (168).
- +France, collections, MALAISE & LESPINEUX (150).
- +Pyrenees, collections, ROUSSEL (193).
- +New York, Trenton conglomerate, fauna, RUEDEMANN (197).
- +New York County, spp., RUEDEMANN (196).
- +Victoria, collections, HALL (88).
- +Eastern Victoria, n. spp., HALL (87).

SYSTEMATIC.

- +*Bryograptus* n. sp. [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 556; +*B.* New York, RUEDEMANN, t. c. p. 554 (name only), n. sp.
- +*Dendrograptus* n. sp. [unnamed, undescribed], New York, RUEDEMANN, t. c. pp. 555 & 570.

- †*Dicellograptus* spp., ELLES & WOOD, Pal. Soc. Mon. lviii, pp. 135–163, figg. 83–102; *D. complanatus*, p. 139, fig. 84, pl. xx, figg. 1 & 2, **n. var.** *ornatus*, fig. 85, *D. anceps*, p. 141, pl. xx, fig. 3, *D. divaricatus*, p. 143, pl. xx, fig. 5, **n. var.** *salopiensis*, p. 145, fig. 7, *D. intortus*, p. 146, fig. 4, *D. patulosus*, p. 147, pl. xxi, fig. 5, *D. pumilus*, p. 149, fig. 3, *D. forchammeri*, p. 150, pl. xxii, fig. 1, *D. sextans*, p. 153, pl. xxi, fig. 1, **n. var.** *exilis*, p. 155, fig. 2, *D. morrisi*, p. 155, pl. xxi, fig. 6, *D. moffatensis*, p. 157, pl. xxiii, fig. 1, *D. elegans*, p. 159, fig. 2, var. *rigens*, p. 161, fig. 3, *D. caducens*, p. 161, fig. 4, Britain, ELLES & WOOD, t. c.
- †*D. angulatus*, Britain, ELLES & WOOD, t. c. p. 149, pl. xxi, fig. 4, **n. sp.**
- †*Dicranograptus clingani*, p. 165, pl. xxiv, fig. 1, *D. tardiusculus*, p. 167, fig. 2, *D. rectus*, p. 160, fig. 4, *D. nicholsoni*, p. 171, pl. xxv, fig. 1, *D. ramosus*, p. 167, pl. xxiv, fig. 6, *D. ziczac*, p. 177, pl. xxv, fig. 3, *D. furcatus* var. *minimus*, p. 179, pl. xxv, fig. 4, Britain, ELLES & WOOD, t. c.
- †*D. brevicaulis*, p. 168, pl. xxiv, fig. 3, *D. celticus*, p. 170, pl. xxiv, fig. 5, *D. cyathyformis*, p. 174, pl. xxv, fig. 2, Britain, ELLES & WOOD, t. c. **n. spp.**
- †*Dictyonema* **n. spp.** [unnamed, undescribed], New York, RUEDEMANN, Rep. N. York Mus. lv, pp. 555 & 570.
- †*Didymograptus* (*Leptograptus*) **n. sp.** [unnamed], mode of growth, RUEDEMANN, t. c. p. 589, fig. 17.
- †*D. ovatus*, Victoria, HALL, Rec. geol. Surv. Victoria i, p. 33, fig. 1, **n. sp.**
- †*Callograptus* sp., Victoria, HALL, t. c. fig. 1.
- †*Climacograptus scharenbergi*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 11, pl. iii, fig. 1; *C. scalaris*, USSING, Danmarks geol. Unders. iii, 2, p. 58, fig. 3; *C. scalaris*, HOLM, Sveriges Geol. Afh. 172, p. 62, fig. 57.
- †*C.* **n. sp.** [unnamed], New York, RUEDEMANN, Rep. N. York Mus. lv, p. 571.
- †*Clonograptus* (*Goniograptus*), RUEDEMANN, Rep. N. York Mus. lv, p. 582, fig. 12, **n. sp.**
- †*Cænograptid* **n. gen.** and **n. sp.** [unnamed], RUEDEMANN, t. c. p. 566.
- †*Cænograptus gracilis*, mode of growth, RUEDEMANN, t. c. p. 583, fig. 13.
- †*Cyrtograptus murchisoni*, USSING, Danmarks geol. Unders. ii, 2, p. 59, fig. 18.
- †*Glossograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, pp. 571 & 555; *G. hermani*, Victoria, HALL, Rec. geol. Surv. Victoria i, 1, p. 34, fig. 2, **n. sp.**
- †*Goniograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York Mus. lv, p. 556.
- †*G. thureauvi*, mode of growth and development, RUEDEMANN, t. c. pp. 576–592, 19 figg.
- †*Graptolithus* **n. sp.** unnamed, ISERLE, SB. Bohmisch. Ges. 1903, xxix, p. 7.
- †*Leptograptus* **n. sp.** [unnamed], RUEDEMANN, Rep. N. York. Mus. lv, p. 570.
- †*Monograptus leptotheca*, p. 61, fig. 56, *M. priodon*, p. 63, fig. 59, HOLM, Sveriges geol. Unders. Afh. 172; *M. bohemicus*, *M. nilssoni*, *M. priodon*, France, MALAISE & LESPINEUX, Ann. Soc. geol. Belgique xxxi, 3, pp. 140 & 141; †*M.* spp., Lower Ludlow Shales, WOOD, P. Geol. Ass. xviii (9), pp. 446–451.
- †*Phyllograptus angustifolius*, HOLM, Sveriges geol. Unders. Afh. 172, p. 37, fig. 31; *P. ilicifolius*, mode of growth, RUEDEMANN, Rep. N. York Mus. lv, p. 590, fig. 19.
- †*Ptilograptus* sp., HALL, Rec. geol. Surv. Victoria i, 3, fig. 2.
- †*Rastrites peregrinus*, USSING, Danmarks geol. Unders. ii, 2, p. 58, fig. 4.
- †*Retiolites* spp., Lower Ludlow Shales, WOOD, P. Geol. Ass. xviii (9), pp. 446–451; *R. glinitzianus*, HOLM, Sveriges geol. Unders. Afh. 172, p. 62,

fig. 58; *R. glinitzianus*, USSING, Danmarks geol. Unders. ii, 2, p. 58, fig. 5.

+*Tetragraptus quadribrachiatus*, *T. fruticosus*, HOLM, Sveriges geol. Unders. Afh. 172, p. 39, figg. 33 & 34; *T. fruticosus*, p. 588, figg. 15 & 16, *T. bigsbyi*, p. 590, fig. 18, mode of growth, RUEDEMANN, Rep. N. York Mus. lv.

IV. SCYPHOZOA.

[The following memoirs refer to *Scyphozoa*:—GILSON (72), GÖRICH (76), HARGITT (93), HUENE (112), MAYER (154), NOBRE (166, 167), RETZIUS (183).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

Regeneration in *Scyphomedusæ*, HARGITT (93).

Spermatogenesis in *Aurelia aurita*, GÖRICH (76).

+Sweden, lower Silurian forms, HUENE (112).

North and South Portugal, marine fauna, NOBRE (166, 167).

Bahamas, medusæ, MAYER (154).

SYSTEMATIC.

Scyphomedusæ, regeneration, HARGITT, Amer. Natural. xxxviii, pp. 517-519.
Aurelia aurita, spermatogenesis, GÖRICH, Zeitschr. wiss. Zool. lxxvi, pp. 522-543, pl. xxxi.

Cyanea capillata, spermatozoa, RETZIUS, Biol. Untersuch. xi, p. 28, pl. xiii, figg. 1-3.

+*Laotira silurica*, Sweden, HUENE, Centrbl. Mineral. 1904, p. 460, fig. 6, n. sp.

Tamoya haplonema, adult and young, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 28, pl. vii, figg. 61-64.

V. ANTHOZOA.

[The following memoirs refer to *Anthozoa*:—ABRIC (5), BEMMELEN (11), BOGATIREW (14), BOLTON (15), BRANNER (17), BROWNE (18), CAPEDE (19), CARLGREN (20), CARY (22), CHILD (24 & 25), COOK (27), COUFFON (28), CROSSLAND (29), DACQUÉ (30), DAINELLI (32 & 33), DAVENPORT (34), DENNANT (35 & 38), DESTINEZ (39-44), DIENER (46), DOLLFUS (47), DUERDEN (49-52), ETHERIDGE (56), FELIX (58-61), FOERSTE (62 & 63), FORREST (64), FOURTEAU (65), FOX (66), FOX-STRANGWAYS (67), GARDINER (68-71), GILSON (72), GIRTY (74), GORKA (77), GRABAU (80), GRAVIER (81), GREGORY (83), GUPPY (85), GÜRICH (86), HALL (87), HARGITT (92), HEICKE (99), HICKSON (100 & 101), HINDE (103), HOLMES (107), HUNTER (113), JAHN (120), JANENSCH (121), JANOVER (122), JUKES-BROWNE (124), JUNGENSEN (125), KINGSLEY (128), KINKELIN (129), KISHINOUE (130), KITAHARA (131), KNIPOWITSCH (133), KOFORD (134), KREMPF (136), KÜKENTHAL (137), LAWSON (141), LHOMME (142), MARENZELLER (152), MAYER (154), McMURRICH (157), MORGAN (161), MUNTHE (164), NOBRE (166 & 167), D'OSSAT (171), POLÉNOFF (176), PRATT (177), REMES (180), RENZ (182), RETZIUS (183), RICHE (184), RICHET (185), ROULE (189-192), ROUSSEL (193), ROWE (194), RUEDEMANN (197), SCHEPOTIEFF (198), SMYČKA (203), SOBOLEW (204), TORREY (208 & 211), TOULA (212), TRINCI (213), TRUE (214), ULRICH & VAUGHAN (216), VAUGHAN (219), VERRILL (220-225), VOLZ (227), WALTHER (228), WHITEAVES (230), WOOD (235), YAKOVLEVA (237), ZELIZKO (240), MAR. BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY.

- Morphology and development of recent and fossil corals, DUERDEN (49).
 Morphology of the *Madreporaria*, septal sequence, DUERDEN (51).
 Morphology and morphogeny of the rugose corals, YAKOVLEVA (237).
 Structure and growth of corals, MORGAN (161).
 Anatomy, adult colony, larva, young polyp, *Siderastrea radians*, DUERDEN (52A).
 Anatomy of the genus *Acropora*, with descriptions of new species, VERRILL (225).
 Structure and affinities of *Porosphaera*, HINDE (103).
 †Anatomy of n. gen. & sp. *Paronipora penicillata*, CAPEDER (19).
 Notes on a peculiar larva, probably of *Amophyllactis* sp., CARY (22).
 Polymorphism in *Pennatulida*, HICKSON (100).
 Septal sequence in *Siderastræa*, DUERDEN (50).
 Artificial sea waters as tested in aquaria on *Metridium*, TRUE (214).
 Chemical composition of some Gorgonian corals, COOK (27).
 Poison of *Actiniæ*, RICHET (185).
 Chemical action of nematoblast alone explains functioning of nematocyst, ABRIC (5).
 On the habits and reactions of *Sagartia davisi*, TORREY (211).
 Assimilation and nutriment in *Alcyonium digitatum*, PRATT (177).
 Reactions to temperature and geotropism on *Mnemiopsis*, HUNTER (113).
 Variation in the stripes of *Sagartia lucia*, DAVENPORT (34).
 Transformation of dorsal tentacle, *Madreporinæ* and *Oculinæ*, KREMPF (136).
 Regeneration and non-sexual reproduction in *Sagartia davisi*, TORREY & MERY (211).
 Form-regulation in *Cerianthus*, CHILD (24 & 25).
 Correlation between regeneration and symmetry, CARLGREN (20).
 Formation of coral reefs, GARDINER (70).
 Coral reefs, FORREST (64).
 †Paleozoic coral reefs, GRABAU (80).
 Development and affinities of the *Tetracoralla*, DUERDEN (52).
 Maturation, fertilization, early cleavage, formation of ectoderm and endoderm in *Pennaria tiarella*, HARGITT (92).
 Variations and nomenclature of corals from Bermudas, West Indies and Brazil, VERRILL (223).
 Classification, ROULE (189).
 Classification; position of *Antipathariæ*, ROULE (190).
 Basis of classification and variation in corals, GARDINER (69).

GEOGRAPHY.

- Various stations, corals, Valdivia Exp., MARENZELLER (152A).
 Iceland, Greenland, Færoe Islands, *Pennatulidæ*, JUNGENSEN (125).
 †Tomsk, collections, POLÉNOFF (176).
 †Ural, Devonian forms, 6 n. spp., 1 n. gen., BOGATIREW (14).
 †Jura chalk, n. spp., FELIX (61).
 †Krakau, Devonian collections, GÜRICH (86).
 †Gotland, Silurian, list of spp. found, MUNTHE (164).
 †Devonian forms, SMYČKA (203).
 †England, upper chalk, Cretaceous forms, JUKES-BROWNE (124).
 †Surrey, collections, HOLMES (107).

- †Scarborough, Oolitic and Cretaceous forms, FOX-STRANGWAYS (67).
 †Lancashire coal measures, spp. found, BOLTON (15).
 †Avon section, corals, VAUGHAN (219).
 †Cornwall, north coast forms, FOX (66).
 †Solenhofen, fauna, WALTHER (228).
 †Central Bohemia, 3 spp. from the Upper Silurian, ZELIZKO (240).
 †Eastern Bohemia, Chalk fossils, JAHN (125).
 †Corniche Alps, Paleozoic forms, n. spp., D'OSSAT (171).
 †South Dalmatia, collections, RENZ (182).
 †Dalmatia, n. spp., DAINELLI (32).
 †Dalmatia, Eocene fossils, DAINELLI (33).
 †Silesia, collections, TOULA (212).
 †Pyrenees, collections, ROUSSEL (193).
 †Portugal, n. spp., FELIX (59).
 North and South Portugal, marine fauna, NOBRE (166 & 167).
 †Egypt, Cretaceous, FOURTEAU (65).
 †Egypt, tertiary, FELIX (60).
 Red Sea, n. spp., KÜKENTHAL (137).
 †Somaliland, collections, DACQUÉ (30).
 Zanzibar and East Africa, coral formations, CROSSLAND (29).
 †New York, Trenton conglomerate, fauna, RUEDEMANN (197).
 †New York, limestone fossils, WOOD (235).
 †Maryland, n. spp., ULRICH & VAUGHAN (216).
 †Southern Indiana, collections, FOERSTE (62).
 †Colorado, Carboniferous, n. sp., GIRTY (74).
 †Tennessee and Kentucky, collections, FOERSTE (63).
 †Manitoba, Silurian, n. gen. & n. sp., described, WHITEAVES (230).
 †Southern Indiana, list of Silurian corals, FOERSTE (62).
 Mexico and Central America, n. spp., MARENZELLER (152).
 Gulf of California, n. sp., GRAVIER (81).
 †California, fossil corals, LAWSON (141).
 Brazil, coral reefs, BRANNER (17).
 Chili, n. spp., McMURRICH (157).
 Japan, coral fishery, KITAHARA (131).
 Bermudas, n. spp., VERRILL (221).
 Bermudas, West Indies and Brazil, n. spp., VERRILL (222).
 Bahamas, medusæ, MAYER (154).
 Indian region, coral reefs, GARDINER (69).
 †Sumatra, n. spp., VOLZ (227).
 †Australian Tertiaries, n. spp., DENNANT (35).
 South Australia and Victoria, recent corals, n. spp., DENNANT (36).
 †Queensland and Western Australia, fossil fauna, GREGORY & DAINTREE (83).
 †Victoria, list of fossils, p. 304, HALL (87).

SYSTEMATIC.

- Anthozoa*, classification, ROULE, Bull. Mus. Monaco 1904, 16, 3 pp.
Acroporidae n. fam. for *Acropora muricata*, Bermudas, VERRILL, Tr.
 Connect. Ac. xi (1), p. 165, pl. xxxii, fig. 1.
Acropora acervata, p. 220, pl. xxxvi, fig. 17, pl. xxxvi, B, fig. 8, *A. appressa*,
 p. 222, pl. xxxvi, D, fig. 4, E, fig. 4, *A. austera*, p. 226, pl. xxxvi, fig. 10,
 B, fig. 1, *A. diffusa*, *A. digitifera*, *A. effusa*, pp. 228 & 229, pl. xxxvi,
 figg. 12, 16, C, fig. 2, F, fig. 16, B, fig. 3, B, fig. 7, *A. microphthalma*,
 p. 232, C, fig. 1, F, fig. 15, *A. proluxa*, p. 237, pl. xxxvi, fig. 3, A, fig. 3, F,
 fig. 14, *A. tubigera*, p. 239, pl. xxxvi, figg. 1 & 2, A, figg. 1 & 2, F, fig. 8,
A. tumida p. 241, pl. xxxvi, fig. 11, B, fig. 2, F, fig. 3, *A. turbinata*,

- p. 242, pl. xxxvi, fig. 6, A, fig. 6, F, fig. 2, *A. secale*, p. 244, pl. xxxvi, fig. 14, B, fig. 5, *A. pumila*, p. 250, pl. xxxvi, fig. 5, A, fig. 5, D, fig. 9, *A. striata*, p. 251, pl. xxxvi, fig. 4, A, fig. 4, F, fig. 7, *A. symmetrica*, p. 254, pl. xxxvi, fig. 8, A, fig. 8, *A. acuminata*, p. 260, *A. ehrenbergii*, pl. xxxvi, D, figg. 5 & 6, E, figg. 2 & 3, F, fig. 11, Bermudas, VERRILL, Tr. Connect. Ac. xi (1); *A.*, composition, with descriptions of new species, VERRILL, t. c. pp. 207–266, 6 pls.
- A. dissimilis*, p. 226, pl. 36, fig. 9, pl. 36, A, fig. 9, *A. indurata*, *A. luzonica*, pp. 230 & 231, pl. 36, figg. 19, 36, C, figg. 4, 6, F, figg. 12, 9, *A. pachycyathus*, p. 236, pl. 36, fig. 20, C, fig. 5, F, fig. 6, *A. stellulata*, p. 238, pl. 36, C, fig. 3, F, p. 10, *A. bandensis* **n. n.** for *Madrepora tubigera* Quelch, p. 241. *A. secaloides*, *A. fraterna*, *A. wardii*, pp. 244–248, pl. 36, figg. 13, 15, 18, B, figg. 6, 9, 4, F, fig. 4, *A. neglecta*, p. 250, pl. xxxvi, fig. 21, *A. urceolifera*, p. 251, D, fig. 3, *A. cytherella*, p. 253, pl. 36, fig. 7, *A. paniculata*, p. 259, pl. 36, D, figg. 7, 10, Bermudas, VERRILL, t. c.
- †*Actinacis remeši*, structure, FELIX, Vestnik. Klub. Prostejove 1904, vi, p. 110, 2 figg., **n. sp.**
- Actinie*, correlation between regeneration and symmetry, CARLGREN, Svenska Ak. Handl. xxxvii, 8, 105 pp., 11 pls., 23 text-figg.; *Actinie*, poison of, RICHET, C.R. Soc. Biol. cit. pp. 302 & 303.
- A. melanaster*, Bermudas, VERRILL, op. cit. xi (1), p. 51, pl. vi, figg. 2 & 3, **n. sp.**
- Actinia equina*, functioning of nematocysts, ABRIC, C.R. Soc. Biol. lvi, pp. 1008–1010; *A. bermudensis*, VERRILL, Tr. Connect. Ac. x (2), p. 558, pl. lxvii, fig. 7.
- Actinoides pallida*, VERRILL, op. cit. x (2), p. 558, pl. lxviii, fig. 4.
- Actinostola chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 247, figg. 30–33, **n. sp.**
- Actinotryx sancti-thomæ*, VERRILL, Tr. Connect. Ac. x (2), p. 555, pl. lxviii, fig. 5.
- Agarcia fragilis*, p. 142, pl. xxvi, fig. 1, *A. agaricites*, p. 146, pl. xxvi, figg. 2 & 3, pl. xxvii, figg. 1–3, 5–7, *A. purpurea*, p. 149, pl. xxvii, fig. 4, Bermudas, VERRILL, op. cit. xi (1).
- A. crassa*, p. 145, pl. xxx, fig. 6, pl. xxxiv, fig. 2, *A. nobilis*, p. 150, pl. xxviii, figg. 1 & 2, Bermudas, VERRILL, t. c. **n. spp.**
- Aiptasia tagetes*, VERRILL, t. c. p. 49, pl. vi, fig. 6; *A. annulata*, *A. tagetes*, Bermudas, VERRILL, op. cit. x (2), pp. 556 & 557, pl. lxviii, fig. 3, pl. lxvii, fig. 2.
- Alcyonium fulvum* (= *Sympodium* Forsk.), KÜKENTHAL, Denk. Ges. Jena 1904, p. 41; *A. digitatum*, assimilation and nutriment, PRATT, Rep. Brit. Ass. 1903–1904, pp. 688 & 689.
- †*Alveolites suborbicularis*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 101, figg. 15–17.
- †*Alveopora cretacea*, Portugal, FELIX, Comm. geol. Portugal v, p. 380, **n. sp.**
- Amophyllactis* (?), notes on peculiar larva of, CARY, Biol. Bull. vii, pp. 75–78, 4 figg.
- Amphihelia oculata*, p. 308, pl. xiv, fig. 1, MARENZELLER, Ergebn. Valdivia iii.
- Anemonia elegans*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 50, pl. vi, fig. 4, **n. sp.**
- Anisopsammia* **n. g.** for *Amphihelia rostrata* Pourtal., p. 314, pl. xviii, fig. 23, MARENZELLER, Ergebn. Valdivia iii.
- Anthelia fuliginosa* (= *Sympodium fuliginosum* Ehrb. = *S. purpurascens* Ehrb. = *Anthelia glauca* Ehrb. = *A. strumosa* Ehrb.), KÜKENTHAL, Denk. Ges. Jena 1904, pp. 43–47.
- Anthepis ocellata*, Chili, anatomy, McMURRICH, Zool. Jahrb. Suppl. iii, 2, Fauna Chilensis, p. 264, figg. 45–47.

- †*Aphyllostylus* **n. gen.** for *A. gracilis* **n. sp.**, Manitoba, Silurian, WHITEAVES, Ottawa Natural. xviii, pp. 113 & 114.
- †*Aplosmilia euteiches*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 179, pl. xvii, fig. 7, **n. sp.**
- Asteroseris planulata*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 156, pl. xxvii, fig. 8.
- †*Astrangia* (*Ctenangia*) *conradi*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 442, pl. cxxv, figg. 1 & 2, **n. sp.**
- †*A. lineata*, Maryland, VAUGHAN, t. c. p. 441, pl. cxxiv, figg. 1-4.
- †*Astrhelia palmata*, Maryland, VAUGHAN, t. c. p. 439, pl. cxxiii, figg. 1-4.
- †*Astrocania subornata* var. *africana*, Somaliland, DACQUÉ, Beitr. Pal. Oesterr.-Ung. xvii, p. 11, pl. ii, fig. 5; †*A. cf. konincki*, Cretaceous, Egypt, FOURTEAU, Bull. Inst. Egypt iv, 4, p. 346, pl. v, figg. 10 & 11.
- †*A. pygmæa*, Portugal, FELIX, Comm. geol. Portugal v, p. 385, pl. iii, figg. 4 & 5, **n. sp.**
- Astylospongia præmorsa*, REMEŠ, Vestnik. Klub. Prostejove 1898, i, p. 8, fig. 2.
- Aulocyathus* **n. g.** near *Ceratotrochus*, p. 300, *A. juvenescens* **n. sp.**, E. Africa, p. 301, pl. xviii, fig. 17, MARENZELLER, Ergebn. Valdivia iii.
- †*Aulopora serpens*, p. 57, figg. 6 & 7, var. *tubæformis*, figg. 8 & 9, Devonian, SMYČKA, Vestnik. Klub. Prostejove 1905, vii.
- Axohelia schrammii*, VERRILL, Tr. Connect. Ac. xi (1), p. 110, pl. xviii, figg. 3 & 4.
- Balanophyllia italica*, p. 313, pl. xviii, fig. 22, MARENZELLER, Ergebn. Valdivia iii.
- B. truncata*, p. 68, pl. xxv, fig. 4, *B. induta*, p. 69, fig. 1, *B. fossata*, p. 70, fig. 2, *B. patula*, p. 71, fig. 6, *B. torta*, p. 72, fig. 5, *B. carliculata*, p. 73, fig. 8, *B. basedowi*, p. 74, fig. 7, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *B. dilatata*, S. Australia, DENNANT, t. c. p. 10, pl. i, fig. 2 : **n. spp.**
- †*Baryhelix hexacnema*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 182, pl. xvii, fig. 6, **n. sp.**
- Bathyactis symmetrica*, p. 312, pl. xviii, fig. 25, MARENZELLER, Ergebn. Valdivia iii.
- B. beaumariensis*, p. 66, pl. xxiv, fig. 3, *B. excelsa*, p. 67, pl. xxiv, fig. 4, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- †*Bolboporites americanus*, New York, RUEDEMANN, Rep. N. York Mus. lv, p. 11, pl. i, fig. 1.
- Boloceroopsis* **n. gen.** for *B. platei* **n. sp.**, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 255, figg. 34 & 35.
- Bunodeopsis globulifera*, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 559, pl. lxvii, fig. 4, **n. sp.**
- †*Calamophyllia tubiporæformis*, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 173, pl. xvi, fig. 7, **n. sp.**
- †*Calceola sandalina*, Devonian, SMYČKA, Vestnik. Klub. Prostejove vii, p. 58, figg. 12 & 13.
- Callogyra* **n. gen.** for *C. formosa* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 86, pl. xxiv, figg. 1 & 2.
- Campophyllum uralicum*, Ural, Devonian, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 71, fig. 14, **n. sp.**
- †*Caninia cylindrica* var. *bristoliensis*, VAUGHAN, P. Bristol Soc. x, p. 103, pl. i, fig. 4.
- Caryophyllia clavus*, =(communis auctt.) variation local, pp. 281-293, pl. xvi, fig. 9, *cyathus*, fig. 6, *arcuata*, fig. 8, p. 295, MARENZELLER, Ergebn. Valdivia iii.
- C. diomedee*, Mexico, MARENZELLER, Bull. Mus. Harvard xliii, p. 79, pl. i, fig. 2; *C. antarctica*, Bouvet Island, p. 293, pl. xvi, fig. 7, MARENZELLER, Ergebn. Valdivia iii : **n. spp.**

- +*Caryosmilia granosa*, Cretaceous, Egypt, FOURTEAU, Bull. Inst. Egypt iv, 4, p. 345, pl. v, figg. 8 & 9.
- +*Centrastræa leptomeræ*, p. 169, pl. xvi, fig. 1, *C. blanckenhorni*, p. 170, figg. 2 & 3, *C. polystyla*, fig. 4, Jura Chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, **n. spp.**
- +*Ceratopora jacksoni*, New York, Marcellus limestones, WOOD, Rep. N. York Mus. lv, p. 155, pl. i, fig. 1.
- Ceratotrochus australiensis*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 56, pl. xxii, fig. 5.
- C. delicatus*, Agulhas Bank, p. 302, pl. xviii, fig. 18, MARENZELLER, Ergebn. Valdivia iii, **n. sp.**
- Ceriantipathaires*, of van Beneden, a valid Order, ROULE, p. 710, C.R. Ac. Sci. cxxviii.
- Cerianthus solitarius*, form regulation, CHILD, Biol. Bull. vi, pp. 55-75, 266-287, 7 figg., vii, pp. 127-154, 193-215, 263-280; *C. solitarius*, form regulation, CHILD, Smithson. Collect. xlv, pp. 134-143; *C.*, Southern California, KOFORD, Science xix, pp. 505-508; *C. borealis*, development and anatomy, KINGSLEY, Tufts Coll. Stud. 1904, No. 8, pp. 345-361, 7 figg.
- C. danielsseni*, Lofoden, ROULE, C.R. Ass. Franc. xxxiii, pp. 791-793; *C. natans*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 47, pl. ix, fig. 6 : **n. spp.**
- +(? *Chaetetes*) *bristoliensis*, Bristol, Carboniferous, VAUGHAN, P. Bristol Soc. x, p. 96, pl. i, fig. 2, **n. sp.**
- Chitonanthus castaneus*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, Fauna Chilensis, p. 282, figg. 72-74, **n. sp.**
- Choriactis impatiens*, Chili, McMURRICH, t. c. p. 272, figg. 59-61.
- C. crassa*, Chili, McMURRICH, t. c. p. 274, figg. 62-65, **n. sp.**
- Cladocora arbuscula*, MARENZELLER, Bull. Mus. Harvard xliii, p. 76, pl. i, fig. 1.
- +*Cleistopora (Michelinia) geometrica*, Bristol, VAUGHAN, P. Bristol Soc. x, p. 99, pl. i, fig. 3.
- +*Clisiophyllum urbinatum*, p. 117, pl. i, fig. 6, *C. sp.*, p. 119, VAUGHAN, t.c.
- Cæloria sinensis*, anatomy, HEICKE, Arch. Naturg. 1904, i, p. 282, pl. xii, figg. 13-17.
- Cænopsammia profunda*, p. 313, pl. xviii, fig. 24, MARENZELLER, Ergebn. Valdivia iii.
- +*Comoseris leptophyes*, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 172, pl. xvi, fig. 6, **n. sp.**
- Conosmilia granulata*, p. 65, pl. xxiv, fig. 5, *C. stylifera*, p. 65, fig. 1, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Corallium japonicum*, Japan, KITAHARA, J. Imp. Fish. Bureau Tokyo xiii, 3, 14 pp., pls. i-v; *C. japonicum*, p. 21, figg., *C. boskuensis*, p. 22, figg., *C. sulcatum*, p. 23, figg., *C. elatius*, p. 24, figg., *C. kononji*, p. 26, figg., *C. inutile*, p. 27, figg., structure and habits, KISHINOUE, op. cit. xiv, 1.
- C. pusillum*, Japan, KISHINOUE, t. c. p. 27, pl. v, figg. 3 & 4, pl. vii, fig. 4, **n. sp.**
- Cribrina hermaphroditica*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 287, figg. 78-81.
- C. conica*, *C. elongata*, Chili, McMURRICH, op. cit. 1904, p. 284, figg. 75-77, p. 289, figg. 82-84, **n. spp.**
- +*Cyathophyllum* aff. *murchisoni*, VAUGHAN, P. Bristol Soc. x, p. 116, pl. i, fig. 5.
- +*C. taramellii*, Italian Alps, D'OSSAT, Atti Acc. Lincei (5) iv, p. 92, fig. 1; +*C. uralicum*, Ural, Devonian, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 70, fig. 13 : **n. spp.**
- +*Cyclolites choffati*, FELIX Commis. geol. Portugal v, p. 379, pl. iii, figg. 2 & 3, **n. sp.**

- Cyphastræa nodulosa*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 107, pl. xxxi, fig. 2; †*C. intermedia*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 198, pl. x, fig. 1 : **n. spp.**
- †*Cystiphyllum geyeri*, Corniche Alps, d'OSSAT, Atti Acc. Lincei (5) iv, p. 97, figg. 5, 6, 7, **n. sp.**
- Dactylactis benedeni*, Gulf of California, pelagic Cerianthus, GRAVIER, Ann. Sci. nat. xx, pp. 253-289.
- Deltocyathus stellaris*, p. 60, pl. xxiii, fig. 1, *D. fontinalis*, p. 61, fig. 5, *D. vercontis*, p. 62, pl. xxiv, fig. 2, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *D. vincentinus*, S. Australia, DENNANT, t. c. p. 6, pl. ii, fig. 1 : **n. spp.**
- Dendrophyllia cornigera*, p. 313, pl. xviii, fig. 21, MARENZELLER, Ergebn. Valdivia iii.
- Desmophyllum crista galli*, pl. x, fig. 2, localities p. 267, MARENZELLER, t. c.
- †*Dimorphastræa kobyi*, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, p. 171, pl. xvi, fig. 5, **n. sp.**
- Discoirochus* ? *pateriformis*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 57, pl. xxii, fig. 7, **n. sp.**
- Dissonema turrida*, Bahamas, MAYER, Mem. Mus. Brooklyn i, p. 8, pl. ii, fig. 10.
- Distichoptilum gracile*, Iceland, JUNGENSEN, Danish Ingolf. Exp. v, 1, p. 62, pl. i, figg. 12-14.
- Dysmorphosa minuta*, budding of, TRINCI, Monit. Zool. ital. xv, pp. 304-310.
- Echinopora elegans*, *E. concinna*, pp. 138 & 139, pl. xxix, figg. 3 & 4, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), **n. spp.**
- †*Emmonsia jaivæ*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 59, fig. 4, **n. sp.**
- †*Endophyllum torosum*, d'OSSAT, Atti Acc. Lincei (5) iv, p. 94, fig. 4.
- Epicystis osculifera*, VERRILL, Tr. Connect. Ac. xi (1), p. 47, pl. vii, fig. 1.
- Epizoanthus patagonichus*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, 1904, p. 296, figg. 85 & 86.
- Errina macrogastra*, Gulf of California, MARENZELLER, Bull. Mus. Harvard xliii, p. 81, pl. ii, fig. 1, pl. iii, fig. 1, **n. sp.**
- Eunicea atra*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 52, pl. ix, figg. 4 & 5, **n. sp.**
- Eusmilia aspera*, VERRILL, t. c. p. 114, fig. 3.
- Favia fragum*, p. 90, pl. xiii, figg. 1 & 2, *F. gravida*, p. 91, pl. xiii, fig. 3, *F. leptophylla*, p. 91, figg. 4 & 5, Bermudas, VERRILL, t. c.
- F. whitfield*, Bermudas, VERRILL, t. c. p. 132, pl. xxv, p. 5; †*F. minor*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 199, pl. x, fig. 6 : **n. spp.**
- †*Favitinæ n. subfam.*, VERRILL, Tr. Connect. Ac. xi (1), p. 87.
- †*Favosites goldfussi*, d'OSSAT, Atti Acc. Lincei (5) iv, p. 99, fig. 13.
- †*F. thildæ*, Corniche Alps, d'OSSAT, t. c. p. 98, figg. 8-12; †*F. uralica*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 59, fig. 1 : **n. spp.**
- †*Fistulipora* aff. *incrustans*, VAUGHAN, P. Bristol. Soc. x, p. 120, pl. 1, fig. 1.
- †*Flabellum medioplicatum*, p. 52, pl. xxii, fig. 2, *F. microscriptum*, p. 53, p. xxii, fig. 1, *F. grangense*, p. 54, fig. 3, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii; *F. deludens*, pl. xvii, fig. 10, p. 269 (= *japonicum* and *laciniatum*), *stabile*, Cape Verde, p. 273, fig. 12, *chunii* (= *distinctum* Duncan), p. 274, pl. xviii, fig. 14, *magnificum*, Sumatra, p. 276, pl. xvii, fig. 13, *inconstans*, Francis-Bucht, p. 277, pl. xvii, fig. 11, MARENZELLER, Ergebn. Valdivia iii : **n. spp.**
- Gorgonia cavolinii*, chemical composition, COOK, Amer. J. Physiol. xii, pp. 95-98.

- Gyrostoma selkirkii*, *G. incertum*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, pp. 227-230, pl. xiv, figg. 6-12, pl. xv, figg. 13-15, **n. spp.**
- Haliantanthus chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 223, pl. xiv, fig. 1-5, **n. sp.**
- Halipterus christii*, Færoe Islands, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 45, pl. ii, figg. 30-32.
- +*Heliolites interstinctus*, p. 104, figg. 18 & 19, var. *devonica*, p. 105, fig. 20, *H. porosus*, p. 106, fig. 21, D'OSSAT, Atti Acc. Lincei (5) iv.
- +*H. devonica*, Ural, Devonian, BOGATIREW, Trudni Kazan. Univ. xxxii, v, p. 69, fig. 5, **n. sp.**
- +*Helioles porosa*, Devonian, SMYČKA, Vestnik. Klub. Prostějove 1905, vii, p. 56, figg. 10 & 11.
- +*Heterocœnia provincialis*, structure, JANENSCH, Zeitschr. Deutsch. geol. Ges. lv, 4, pp. 486-493.
- Holcotrochus crenulatus*, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 3, pl. ii, fig. 4, **n. sp.**
- Homophyllia australis*, DENNANT, t. c. p. 8, pl. ii, fig. 2.
- Hormathia exlex*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 279, figg. 70 & 71, **n. sp.**
- Isophyllia dipsacea*, *I. fragilis*, pp. 118-125, pl. xvi, fig. 12, pl. xvii, figg. 1-7, pl. xviii, figg. 1 & 2, pl. xix, figg. 1-5, pl. xx, fig. 2, VERRILL, Tr. Connect. Ac. xi (1).
- I. multiflora*, Bermudas, VERRILL, t. c. p. 125, pl. xx, fig. 1, pl. xxv, fig. 1, **n. sp.**
- +*Latimœandra zumoffeni*, p. 175, pl. xvii, fig. 3, *L. amphitrites*, p. 176, fig. 1, Jura chalk, FELIX, Beitr. Pal. Oesterr.-Ung. xv, **n. spp.**
- Lebrunia danæ*, Bermudas, VERRILL, Tr. Connect. Ac. xi (1), p. 48, pl. vi, fig. 1; *L. danæ*, Bermudas, VERRILL, op. cit. x (2), p. 555, pl. lxvii, fig. 3, pl. lxix, fig. 1.
- Leptocyathus? convexus*, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 59, pl. xxiii, fig. 3, **n. sp.**
- +*Leptoseris meneghinii*, Dalmatia, DAINELLI, Pal. Ital. x, p. 179, pl. xv, fig. 6, **n. sp.**
- +*Lonsdaleia frechi*, *L. fennemai*, Sumatra, VOLZ, Geol. Pal. Abh. vi, p. 100, figg. 32-34, p. 102, fig. 35, **n. spp.**
- Lophohelia prolifera*, p. 307, pl. xv, fig. 3, MARENZELLER, Ergebn. Valdivia iii.
- Lophophyllum proliferum*, morphology, YAKOVLEVA, Bull. Lab. St. Petersburg, vii, 2, pp. 87-101, 1 fig.
- Madracis decactis*, VERRILL, Tr. Connect. Ac. xi (1), p. 108, fig. 2.
- Madreporaria*, morphology, septal sequence, DUERDEN, Biol. Bull. vii, pp. 79-104, 9 figg.
- Madreporinae*, transformation of dorsal tentacle in several genera, KREMPF (136).
- Meandrina braziliensis*, VERRILL, Tr. Connect. Ac. xi (1), p. 190, pl. xxxiv, fig. 1.
- +*Menophyllum ulrichianum*, Colorado, Girty, Prof. Papers U. S. Geol. Surv. 16, 1903, p. 271, pl. i, figg. 1 & 2, **n. sp.**
- Metridium*, used in aquaria as a test for artificial sea waters, TRUE, Science xix, p. 252.
- ?*M. parvulum*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 276, figg. 66-68, **n. sp.**
- Millepora alciornis*, VERRILL, Tr. Connect. Ac. xi (1), p. 182, fig. 13.
- Mæandridæ* **n. fam.** *Mæandrinae* **n. subfam.**, VERRILL, t. c. p. 65.
- Mæandra labyrinthiformis*, p. 70, pl. x, figg. 1-3, *M. cerebrum*, p. 74, fig. 4, pl. xii, fig. 4, pl. xiv, figg. 4 & 5, *M. agassizii*, p. 80, pl. xiv, fig. 1, *M. areolata*, p. 81, pl. xi, figg. 1 & 2, pl. xii, figg. 1-3, *M. conferta*, p. 84, pl. xiii, fig. 6, Bermudas, VERRILL, t. c.
- Mussa (Symphyllia) rigida*, p. 127, pl. xxv, figg. 2 & 3, *M. harttii*, p. 128,

- pl. xxii, figg. 1 & 2, pl. xxiii, figg. 1 & 2, pl. xxv, fig. 4, pl. xxxiii, fig. 3, *M. braziliensis*, p. 192, pl. xxi, fig. 1, VERRILL, t. c.
- M. (Symphyllia) hispida*, Bermudas, VERRILL, t. c. p. 127, pl. xxi, fig. 2; *M. (Symphyllia) tenuisepta*, Bermudas, VERRILL, t. c. p. 193, pl. xxi, fig. 3; *M. (Symphyllia) unnectens*, Bermudas, VERRILL, t. c. p. 178, pl. xxxv, figg. 1 & 2 : **n. spp.**
- Mycodinium explanatum*, VERRILL, t. c. p. 136, pl. xxix, fig. 1.
- M. tenuicostatum*, Bermudas, VERRILL, t. c. p. 137, pl. xxix, fig. 2, **n. sp.**
- †*Nicholsonia n. gen.* for *N. cylindrica n. sp.*, Russia, BOGATIREW, Trudui Kazan. Univ. xxxii, 5, p. 69, fig. 6.
- Oculina varicosa*, p. 173, pl. xxxii, figg. 2-4, pl. xxx, fig. 3, *O. valenciennesi*, p. 176, pl. xxxii, fig. 5, Bermudas, VERRILL, Tr. Connect. Ac. xi (1).
- O. umbellata*, Australian Tertiaries, DENNANT, Tr. Soc. S. Austral. xxviii, p. 63, pl. xxv, fig. 3, **n. sp.**
- Odonthocyathus stella* Alcock, young of *Stephanotrochus*, MARENZELLER, p. 307, Ergbn. Valdivia iii.
- Omphyma* sp., morphology and morphogeny, YAKOVLEVA, Bull. Lab. St. Petersb. vii, 2, pp. 87-101, figg. 3-5.
- Orbicella annularis*, p. 94, pl. xv, figg. 1 & 2, *O. excelsa*, p. 98, fig. 4, *O. aperta*, p. 103, pl. xxxiii, fig. 1, Bermudas, VERRILL, Tr. Connect. Ac. xi (1).
- O. hispidula*, Bermudas, VERRILL, t. c. p. 100, pl. xv, fig. 3; *O. braziliiana n. n.* for *O. cavernosa* Quelch.; †*O. humphreysi*, p. 171, pl. x, fig. 2, *O. lyonsi*, p. 195, figg. 4 & 5, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi : **n. spp.**
- Pachygeranthus n. gen.* [no sp. named], Japan, ROULE, C.R. Ass. Franc. xxxiii, pp. 791-793; *P. benedeni*, characters, ROULE, p. 708, C.R. Ac. Sci. cxxxviii.
- †*Pachypora reticulata*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 100, fig. 14.
- Palythoa grandiflora*, VERRILL, Tr. Connect. Ac. xi (1), p. 52, pl. vii, fig. 2.
- P. grandiflora*, Bermudas, VERRILL, op. cit. x (2), p. 564, pl. lxviii, fig. 6, **n. sp.**
- Paractis nivea*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 239, pl. xv, fig. 16-19.
- P. ignota*, *P. tenuicollis*, pp. 242 & 243, pl. xv, figg. 20-26, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, **n. spp.**
- †*Paracyathus vaughani*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 438, pl. cxxii, figg. 1-3.
- Parasmilia fecunda*, p. 311, pl. xv, fig. 5, MARENZELLER, Ergebn. Valdivia iii.
- P. flindersensis*, p. 64, pl. xxiii, fig. 2, *P. lucens*, p. 64, pl. xxiv, fig. 6, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, **n. spp.**
- Parantheopsis n. gen.* for *P. cruentata* (= *Actinia* Couthouy), McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 232.
- Parazoanthus elongatus*, Chili, McMURRICH, t. c. p. 298, figg. 87-89, **n. sp.**
- †*Paronipora n. gen.* for *P. penicillata n. sp.* (*Favositidae*), CAPEDER, Riv. ital. Pal. x, 1, pp. 58-61, pls. ii & iii.
- Pavonaria finmarchica*, Iceland, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 39, pl. ii, figg. 28 & 29, pl. iii, figg. 33-36.
- Pennaria tiarella*, maturation, fertilization, early cleavage, formation of ectoderm and endoderm, HARGITT, Arch. Entw. mech. xviii, pp. 453-488, pls. xxiv-xxviii.
- Pennatula aculeata*, p. 11, pl. i, fig. 1, JUNGENSEN, Danish Ingolf-Exp. v, 1, anatomy.
- P. prolifera*, Davis Straits, JUNGENSEN, t. c. p. 18, pl. ii, figg. 15-24, **n. sp.**
- Pennatulidae*, polymorphism, HICKSON, Rep. Brit. Ass. 1903, p. 688.
- Phellia rufa*, VERRILL, Tr. Connect. Ac. xi (1), p. 49, pl. vi, fig. 5.
- P. simplex*, Bermudas, VERRILL, t. c. p. 48; *P. rufa*, Bermudas, VERRILL, op. cit. x (2), p. 557, pl. lxviii, fig. 2 : **n. spp.**

- †*Phillipsastræa ananas*, D'OSSAT, Atti Acc. Lincei (5) iv, p. 93, figg. 2 & 3.
 †*Phyllocænia ægyptiaca*, affinities, FOURTEAU, Bull. Inst. Egypt. iv, 4, p. 347.
 †*P. transiens*, Portugal, FELIX, Comm. geol. Portugal v, p. 384, pl. iii, fig. 1, **n. sp.**
Phymactis clematis, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 259, figg. 36-43.
Placotrochus magnus, Australian Tertiaries, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 54, pl. xxii, fig. 4, **n. sp.**
Platytrachus maudensis, Australian Tertiaries, DENNANT, t. c. p. 56, pl. xxii, fig. 6, **n. sp.**
Plesiastrea goodei, VERRILL, Tr. Connect. Ac. xi (1), p. 106, fig. 1.
P. goodei, Bermudas, VERRILL, op. cit. x (2), p. 553, pl. lxvii, fig. 1; *P. proximans*, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 9, pl. ii, fig. 3 : **n. spp.**
Polytremacis lindströmi, REMEŠ, Vestník. Klub. Prostejove 1898, p. 7, fig. 1, **n. sp.**
Porites polymorpha, VERRILL, Tr. Connect. Ac. xi (1), p. 158, pl. xxxi, fig. 3, *P. astreoides*, p. 160, pl. xxxi, fig. 4, *P. verrillii*, p. 161, fig. 5, *P. banneri*, p. 162, fig. 6.
Porosphaera, structure and affinities, HINDE, J. R. Micr. Soc. 1904, pp. 1-25, pls. i & ii.
Protopalychtha **n. n.** for *Gemmaria* McMURRICH, *P. grandis* **n. sp.**, Bermudas, VERRILL, Tr. Connect. Ac. x (2), p. 563, pl. lxvii, fig. 6.
Protophilum denticulatum, Greenland, JUNGENSEN, Danish Ingolf-Exp. v, 1, p. 59, pl. i, figg. 9-11, **n. sp.**
P. carpenteri, p. 51, pl. i, figg. 2 & 3, *P. thomsoni*, p. 55, figg. 4-8, JUNGENSEN, t. c.
Pycnanthus lineolatus, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 245, pl. xv, figg. 27-29.
Rhizotrochus radiatus, S. Australia, DENNANT, Tr. R. Soc. S. Austral. xxviii, p. 2, pl. i, fig. 1, **n. sp.**
Rhodarea lagrenæi, anatomy, HEICKE, Arch. Naturg. 1904, i, p. 258, pl. xii, figg. 1-12.
Sagartia spp., functioning of nematocysts, ABRIC, C.R. Soc. Biol. lvi, pp. 1008-1010; *S. luciae*, variation in number of stripes, DAVENPORT, Mark Anniv. Vol. pp. 137-164, pl. x; *S. davisii*, regeneration and non-sexual reproduction, TORREY & THERY, Univ. Calif. publ. Zool. i, 6, pp. 211-226, 9 figg.; *S. chilensis*, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 265, figg. 48-52; *S. parasitica*, GORKA, Allatt. Kozl. Maygar Tars. i, 1902, p. 104, fig. 1; *S. davisii*, habits and reactions of, TORREY, Biol. Bull. vi, pp. 203-216.
S. herpetodes, Chili, McMURRICH, Zool. Jahrb. Suppl. iii, 2, p. 268, figg. 53-58, **n. sp.**
 †*Septastrea marylandica*, Maryland, VAUGHAN, Maryland geol. Surv. 1904, p. 444, pl. cxxvi, figg. 1 & 2, pl. cxxvii, figg. 1-3, pl. cxxviii, figg. 1 & 2, pl. cxxix.
Siderastrea, septal sequence, DUERDEN, Rep. Brit. Ass. 1903, p. 687; *S. siderea*, p. 151, pl. xxx, figg. 2 & 3, *S. radians*, p. 153, fig. 1, *S. stellata*, p. 155, figg. 4 & 5, Bermudas, VERRILL, Tr. Connect. Ac. xi (1); *S. radians*, natural history, anatomy, postlarval development, DUERDEN (52A).
Solenastrea hyades, Bermudas, VERRILL, t. c. p. 104, pl. xv, fig. 5.
 †*S. anomala*, Egypt, Tertiary, FELIX, Zeitschr. Deutsch. geol. Ges. lvi, p. 173, pl. x, fig. 3, **n. sp.**
Solenocaulon tortuosum, pl. vii, fig. 1, *S. cervicorne*, fig. 2, pl. viii, figg. 2, 3, 7, 8 & 9, *S. grayi*, pl. viii, figg. 1-5, anatomy, JANOVER, Rev. Suisse Zool. xii, pp. 445-538, pls. vii & viii.

- Solenosmilia variabilis*, p. 310, pl. xv, fig. 4, MARENZELLER, *Ergebn. Valdivia* iii.
- Sphenotrochus aurantiacus*, Agulhas Bank, MARENZELLER, p. 280, pl. xviii, fig. 15, t. c. **n. sp.**
- Spongodes kluzingeri*, anatomy, KÜKENTHAL, *Denk. Ges. Jena* 1904, p. 51, pl. iv, fig. 9.
- S. maji*, p. 53, pl. iv, fig. 10, pl. v, fig. 20, *S. hartmeyer*, p. 55, pl. iv, fig. 11, pl. v, fig. 21, *S. ehrenbergi*, p. 56, pl. iv, fig. 12, pl. v, fig. 22, Red Sea, KÜKENTHAL, t. c. **n. spp.**
- Stenocyathus vermiformis*, p. 298, pl. xviii, fig. 16, MARENZELLER, *Ergebn. Valdivia* iii.
- Stenohelia profunda*, Mexico, MARENZELLER, *Bull. Mus. Harvard* xliii, 2, 3, p. 86, pl. ii, fig. 2.
- +*Stenopora leichardti*, Queensland, GREGORY & DAINTREE, *P. Soc. Victoria* xvi, 2, p. 322.
- +*Stephanocenia halmopotis*, *S. major*, p. 181, pl. xvii, figg. 5, 8, Jura Chalk, FELIX, *Beitr. Pal. Oesterr.-Ung.* xv, **n. spp.**
- Stephanotrochus campaniformis*, Atlantic, p. 302, pl. xviii, fig. 20, *explanans*, Sumatra, p. 304, pl. xviii, fig. 19, MARENZELLER, *Ergebn. Valdivia* iii, **n. spp.**
- Stichopathes richardi* **n. sp.** (not described), ROULE, *C.R. Ac. Sci.* cxxxviii, pp. 1621 & 1622.
- Streptelasma europeum*, morphology, YAKOVLEVA, *Bull. Lab. St. Petersb.* vii, 2, pp. 87-101, fig. 2.
- +*Stromatopora concentrica*, d'OSSAT, *Atti Acc. Lincei* (5) iv, p. 109, fig. 22.
- Stylaster divergens*, Mexico, MARENZELLER, *Bull. Mus. Harvard* xliii, p. 83, pl. ii, fig. 3, pl. iii, fig. 2, **n. sp.**
- +*Syringopora*, Clifton, Carboniferous, VAUGHAN, *P. Bristol. Soc.* x, p. 99, **n. sp.** unnamed.
- Tealia crassicornis*, male reproductive organs, RETZIUS, *Biol. Untersuch.* xi, p. 29, pl. xiii, figg. 14-20; *T. c.*, functioning of nematocysts, ABRIC, *C.R. Soc. Biol.* lvi, pp. 1008-1010.
- Tetracoralla* or rugose corals, development and affinities, DUERDEN, *Science* xix, p. 217.
- Trachyphyllinae* **n. subfam.**, VERRILL, *Tr. Connect. Ac.* xi (1), p. 84.
- Trematotrochus verconis*, S. Australia, DENNANT, *Tr. R. Soc. S. Austral.* xxviii, p. 5, pl. i, fig. 4, **n. sp.**
- +*Trochocyathus calcitrapa*, Saratov, ARKHANGHELSKII, *Mater. gheol. Rossii* xxii, p. 61, pl. xi, figg. 11 & 12.
- T. wilkinsoni*, Australian Tertiaries, DENNANT, *Tr. R. Soc. S. Austral.* xxviii, p. 58, pl. xxiii, fig. 4, **n. sp.**
- +*Trochoseris nutrithii*, Dalmatia, DAINELLI, *Pal. Ital.* x, p. 174, pl. xv, fig. 1, **n. sp.**
- Umbellula lindahl*, p. 75, pl. iii, figg. 37-46, *U. encrinus*, p. 79, pl. iii, figg. 46-51, JUNGENSEN, *Danish Ingolf-Exp.* v, 1.
- Verrucella grandis*, Bermudas, VERRILL, *Tr. Connect. Ac.* xi (1), p. 53, pl. ix, figg. 1-3, **n. sp.**
- Virgularia cladiscus* **n. n.** for *V. tuberculata* Marshall, JUNGENSEN, *Danish Ingolf-Exp.* v, 1, p. 33.
- Xenia umbellata*, p. 34, *X. fuscescens*, p. 34, 2 figg., KÜKENTHAL, *Denk. Ges. Jena* 1904.
- Zoanthus dubius*, VERRILL, *Tr. Connect. Ac.* x (2), p. 562, pl. lxvii, fig. 9.
- Z. proteus* (= *Z. flos-marinus* McMurrich), Bermudas, VERRILL, t. c. p. 561, pl. lxvii, fig. 5, **n. sp.**

VI. CTENOPHORA.

[The following memoirs refer to *Ctenophora*:—BROWNE (18), GILSON (72), HARTLAUB (96), HUNTER (113), SCHNEIDER (199), TORREY (210), MAR. BIOL. ASSOC. (2).]

SUBJECT INDEX.

GENERAL BIOLOGY AND GEOGRAPHY.

Origin of genital cells in Ctenophores, SCHNEIDER (199).

Reactions of *Mnemiopsis*, HUNTER (113).

Norway, collections, HARTLAUB (96).

San Diego, n. spp., TORREY (210).

SYSTEMATIC.

Beroë forskali, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 47, pl. i, fig. 2; *B. ovata*, reproductive and renal cells, SCHNEIDER, Zeitschr. wiss. Zool. lxxvi, pp. 388-399, pl. xxiv.

Euplokamis californensis, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 46, n. sp.

Mertensia ovum, San Diego, TORREY, t. c. p. 46, pl. i, fig. 1.

Mnemiopsis, effect of temperature changes, and geotropism, HUNTER, Science xix, pp. 219 & 220; *M.*, reactions, HUNTER, Biol. Bull. vi, pp. 324.

Pleurobrachia bachei, San Diego, TORREY, Univ. Calif. publ. Zool. ii, p. 46, pl. i, fig. 3.

Steenstrupia rubra, anatomy, HARTLAUB, Wiss. Meeresuntersuch. v, 2, pp. 97-106, fig. 3.



XVII. SPONGIÆ.

BY

W. WOODLAND.

CONTENTS.

| | Page |
|--|------|
| INTRODUCTION | 3 |
| I. TITLES | 4 |
| II. BIOLOGY | 8 |
| A. Evolution | 8 |
| B. Morphology | 8 |
| (i) General Accounts | 8 |
| (ii) External Characters | 8 |
| (iii) Anatomy of Soft Parts. Canal-System | 8 |
| (iv) Skeletal System | 8 |
| (a) General Accounts | 8 |
| (b) Material of the Skeleton | 9 |
| (c) Skeletal Elements, Morphology, Develop- ment, and Nomenclature of | 9 |
| (d) Skeletal Anatomy | 9 |
| (v) Histology | 9 |
| (a) General Accounts | 9 |
| (b) Special Organs or Tissues | 9 |
| c. Physiology. | 9 |
| (i) General Accounts | 9 |
| (ii) Particular Functions | 9 |
| D. Bionomics | 10 |
| E. Reproduction, Development and Growth | 10 |
| (i) Germ-Cells, Fertilization | 10 |
| (ii) Embryology | 10 |
| (a) General Accounts | 10 |
| (b) Early Stages, Larvæ, Metamorphosis, &c. | 10 |
| (iii) Asexual Reproduction | 10 |
| (a) Fission, Vegetative Budding and Regene- ration | 10 |
| (b) Germinal Budding and Gemmule-For- mation | 10 |

| | Page |
|------------------------------------|------|
| F. Miscellanea | 10 |
| (i) Bibliography | 10 |
| (ii) Technique | 10 |
| (iii) Economics | 10 |
| (iv) Classification | 11 |
| (v) Chemistry of Sponges | 11 |

III. DISTRIBUTION.

| | |
|---|----|
| A. Geographical | 11 |
| a. Marine | 11 |
| (i) General | 11 |
| (ii) Atlantic Ocean and Adjacent Seas | 11 |
| (iii) Indian Ocean and Adjacent Seas | 11 |
| (iv) Pacific Ocean and Adjacent Seas | 11 |
| (v) Arctic Seas (vacant). | |
| (vi) Antarctic Seas | 11 |
| β. Freshwater | 11 |
| B. Geological | 11 |
| (i) General (vacant). | |
| (ii) Cainozoic | 11 |
| (iii) Mesozoic | 11 |
| (iv) Palæozoic | 12 |

IV. SYSTEMATIC.

| | |
|---|----|
| A. Porifera, general | 12 |
| B. Calcarea (including <i>Astroscleridæ</i>) | 12 |
| (i) Homocœla | 12 |
| (ii) Heterocœla | 12 |
| C. Hexactinellida | 13 |
| (i) Lyssacina | 13 |
| (ii) Dictyonina | 16 |
| D. Demospongiæ | 18 |
| (i) Tetraxonida | 18 |
| (a) Carnosa | 18 |
| (b) Tetractinellida | 18 |
| (1) Choristida | 18 |
| (2) Lithistida | 19 |
| (ii) Monaxonida | 21 |
| (a) Hadromerina | 21 |
| (1) Aciculina | 21 |
| (2) Clavulina | 21 |
| (b) Halichondrina | 22 |
| (iii) Keratosa | 25 |
| (a) Dictyoceratina | 25 |
| (b) Dendroceratina | 26 |
| (iv) Myxospongida | 26 |
| E. Octactinellida (vacant). | |
| F. Heteractinellida (vacant). | |
| G. Incertæ Sedis | 26 |

INTRODUCTION.

I. The record of Sponge literature for 1904 comprises 61 publications (including 53A), exclusive of abstracts or reviews. This number is one more than that of last year, but not all of these publications belong to the year 1904 as will be seen by the list appended below.

II. Sponge literature has during 1904 chiefly been enriched by the four splendid monographs of IJIMA (24), SCHULZE (43), TOPSENT (50) and WILSON (60)—monographs principally of systematic value, though the last three authors also provide general accounts of the skeleton and other portions of sponge structure. The monograph of IJIMA continues his important researches on Japanese Hexactinellids (*Rossellidæ*); SCHULZE describes the Hexactinellid sponges of the "Valdivia" expedition; TOPSENT describes sponges from the Azores and WILSON sponges obtained by the "Albatross" in the Pacific Ocean. Other systematic memoirs of importance are those of HINDE (18, 19) on the genus *Porosphaera*, MINCHIN (36) on the genus *Leucosolenia*, SEELY (45), SZYMAŃSKI (47) and THUM (49). The number of new genera and new species described in 1904 is considerable.

III. Some of the chief features of morphological importance to be noticed are the proof of the sponge nature and the description of the intimate structure of *Porosphaera* by HINDE (18); the description of the huge basal spicule of *Monoraphis chuni* by SCHULZE (43), who also gives a general account of Hexactinellid morphology, and, amongst other things, the description of Sollas' membrane in *Pæcillastra* and *Penares*, and of the reticular skeletal septa crossing the gastral cavity of *Euplectella* and *Chonelasma* by WILSON (60).

IV. In Physiology, Bionomics and Economics, there is little to record. MAAS (31, 32) describes the results of rearing Calcareous sponges in water deprived of calcium salts; COBB (5) gives an account of the sponge fishery in Florida; COTTE (6) continues his studies on nutrition in sponges, and certain phenomena, which may be classed under the heading of Bionomics, are described by CUENOT (7), DUERDEN (9), GRUVEL (15), HERDMAN (17), TOPSENT (50) and WILSON (60). In connection with the Reproduction of Sponges, GÖRICH (14) further contributes to our knowledge of spermatogenesis and oogenesis in sponges, and IJIMA (24), SCHULZE (43), TOPSENT (50) and WILSON (60) also supply information concerning gemmule-formation, larvæ and vegetative budding in several genera of siliceous sponges.

V. Under the heading of Geographical Distribution, the most important contributions are the four large systematic monographs mentioned above, which describe sponges from the Japanese seas, Atlantic and Indian Oceans, Azores and South Pacific Ocean respectively. Sponges from waters adjacent to the Atlantic Ocean are also described by IAKHONTOFF (23), by SOWINSKY (46), and by SZYMAŃSKI (48). Calcareous sponges from the Antarctic Seas are described by VANHÖFFEN (56). The chief palæontological memoirs are those of HINDE (18, 19), JUKES-BROWNE & HILL (26) and ROWE (41).

Sponge memoirs, hitherto unrecorded, belonging to years decidedly previous to 1904 are those of CLARKE (3), GRUVEL (15), HOLLICK (21), IAKHONTOFF (23), REMEŠ (40) and SEELY (45).

I. TITLES.*

ARNESSEN. (3) Zool. Rec. 1903 Spong. Abstract by MAAS (33).

BAAR. (4) Zool. Rec. 1903 Spong. Abstract by MAAS (33).

1. BAUMBERGER, E. Fauna der untern Kreide im westschweizerischen Jura. Abh. Schweiz. pal. Ges. xxx, 1903, pp. 1-60.

2. *CHIRICA, C. Les Spongillides de Roumanie. Ann. Univ. Jassy iii, pp. 15, 16.

3. CLARKE, J. M. A fauna Siluriana Superior do Rio Trombetas, Para, Brazil. Arch. Mus. Rio Janeiro x, 1899, pp. 7, 8.

4. CLAUS, C. & GROBBEN, K. Lehrbuch der Zoologie, begründet von C. Claus, neu bearbeitet von Karl Grobben. Erste Hälfte, pp. 249-257, with figg.

Reviewed by SCHUBERG in Zool. Zentrbl. xi, p. 233.

5. COBB, J. N. The Sponge Fishery of Florida in 1900. Rep. U. S. Fish. Comm. for 1902, xxviii [1904], pp. 163-175, 4 pls.

6. COTTE, M. J. Des Phenomenes de la Nutrition chez les Spongiares. C.R. Ass. Franc. xxxii, Pt. 2, 1903, pp. 776-780.

——. (9-14) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).

7. CUENOT, L. Contributions a la faune du Bassin D'Arcachon. III. Doridiens. Trav. Lab. Arcachon 1903, p. 4.

8. DENNANT, J. & KITSON, A. E. Catalogue of the described Species of Fossils in the Cainozoic fauna of Victoria, South Australia and Tasmania. Rec. geol. Surv. Victoria i, (2), 1903, p. 136.

9. DUERDEN, J. E. West Indian Sponge-incrusting Actinians. Bull. Amer. Mus. xix, 1903, pp. 495-503.

Notice in Nature lxix, Feb., p. 398.

10. ECK, H. Bemerkung zur Lethæa geognostica, betreffend Schwämme aus dem Muschelkalk. Centrbl. Mineral. No. 15, p. 464.

11. ETHERIDGE, R. A Monograph of the Cretaceous Invertebrate fauna of New South Wales. Mem. geol. Surv. N. S. Wales, Palæontology, No. 11, 1902, p. 64.

12. FOX-STRANGWAYS, C. The Geology of the Oolitic and Cretaceous Rocks South of Scarborough. Mem. geol. Surv. England & Wales 1904, pp. 1-118, with 11 plates.

13. GILLOT, X. Communication on *Spongilla lacustris* L. from Chambilly. Bull. Soc. Autun xvi, 1903, pp. 120, 121.

14. GÖRICH, W. Zur Kenntnis der Spermatogenese bei den Poriferen und Cölenteraten nebst Bemerkungen über die Oogenese der ersteren. Zeitschr. wiss. Zool. lxxvi, pp. 522-543, 1 pl.

——. (19, 20) Zool. Rec. 1903. Abstract by MAAS (33). Abstract in Ann. Nat. Hist. pp. 312, 313, 421.

GROBBEN. [See CLAUS & GROBBEN (4).]

* An asterisk prefixed to a quotation indicates that the Recorder has not seen the Paper or Work referred to.

15. GRUVEL, A. Notes sur quelques résultats d'un dragage dans le Golfe de Gascogne. Pr.-verb. Soc. Sci. Bordeaux 1897-98, pp. 248-256.
16. *HENZE, M. Spongosterin, eine cholesterinartige Substanz aus *Suberites domuncula* und seine argebliche Beziehung zum Lipochrom dieses Tieres. Zeitschr. physiol. Chem. xli, pp. 109-124.
17. HERDMAN, W. A. & HORNEILL J. Note on pearl-formation in the Ceylon Pearl Oyster. Rep. Brit. Ass. 1903, p. 695.
HILL, W. [See JUKES-BROWNE & HILL (26).]
18. HINDE, G. J. On the structure and affinities of the genus *Porosphaera*, Steinmann. J. R. Micr. Soc., pp. 1-25, 2 pls.
19. —. On the zone of *Marsupites* in the Chalk at Beddington, near Croydon, Surrey. Geol. Mag. pp. 484, 485.
20. HOLMES, W. M. List of fossils collected from the chalk obtained from the cutting and tunnel between Coulsdon and Merstham. P. Croydon Club, pp. 45, 46.
21. *HOLLICK, A. Two Staten-Island sponges. New Brighton, N. Y. Proc. Nat. Sci. Ass. viii, 1890, p. 21.
HORNEILL, J. [See HERDMAN & HORNEILL (17).]
22. HUARD, V.-A. L'histoire naturelle dans L'Ouest. Natural. Canad. xxxi, pp. 218, 219.
HUTCHINSON. (20) Zool. Rec. 1902 Spong. Abstract by MAAS (33).
23. IAKHONTOFF, G. Communication de l'excursion sur le lac Baical, faite en été de l'année 1902. Protok. Kazan. Univ. 1902-1903, No. 212, pp. 1-11.
24. IJIMA, I. Studies on the Hexactinellida. Contribution iv. (*Rossellidae*). J. Coll. Tokyo xviii, Article 7, 307 pp., 27 pls. with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 545-549.
— (22) Zool. Rec. 1903 Spong. Notice by MAAS (33).
25. JAHN, J. J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. Jahrb. geol. Reichsanst. liv, Pt. I, p. 86.
26. JUKES-BROWNE, A. J. & HILL, W. The Cretaceous Rocks of Britain. The Upper Chalk of England. Mem. geol. Surv. U. K. iii, pp. 1-566, 79 text-figg., 1 pl.
Reviewed in Ann. Mag. Nat. Hist. (7) xiii, pp. 473, 474.
KITSON, A. E. [See DENNANT & KITSON (8).]
27. KOFOID, C. A. Biological Survey of the waters of Southern California by the marine Laboratory of the University of California at San Diego. Science, n. s. xix (482), pp. 505-508.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 678, 679.
LAMEERE. (30) Zool. Rec. 1902. Notice by MAAS (33).
28. LENDENFELD, R. VON. Über die deszendenztheoretische Bedeutung der Spongiosa. Biol. Centrbl. xxiv, pp. 635, 636.
29. —. Ueber die Herstellung von Nadelpräparaten von Kieselschwämmen. Zeitschr. wiss. Mikr. xxi, pp. 23, 24.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 549.
— (27 & 28) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).

30. [LENDENFELD, R. VON.] See IJIMA (24), KOFOID (27), LENDENFELD (29), MAAS (32), SCHULZE (43), SZYMAŃSKI (47 & 48), THUM (49), TOPSENT (50-52), WILSON (60).
- LEON. (29) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
- LUNDBECK. (32) Zool. Rec. 1903 Spong. Notice by MAAS (33).
31. MAAS, O. Über den Aufbau des Kalkskeletts der Spongien in normalen und in CaCO_3 freien Seewasser. Verh. Deutsch. zool. Ges. xiv, pp. 190-199, 243.
32. —. Ueber der Wirkung der Kalkentziehung auf die Entwicklung der Kalkschwämme. SB. Ges. München xx, Heft. 1, pp. 4-21, with figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 687, 688.
33. —. Porifera. Zool. Jahresber. 1903 (1904), pp. 1-6 (sep. pag.).
34. MARINE BIOLOGICAL ASSOCIATION. Plymouth Marine Invertebrate Fauna. J. Mar. Biol. Ass. vii, No. 2, pp. 185, 186.
35. MARPMANN, G. Über die Präparation der Diatomaceen, Foraminiferen, Polycistineen und Spongillen. Zeitschr. ang. Mikr. x (6), pp. 141-145.
36. MINCHIN, E. A. The characters and synonymy of the British Species of Sponges of the genus *Leucosolenia*. P. Zool. Soc. London, Vol. ii, pp. 349-396, with 8 text-figg.
37. M'INTOSH, W. C. On the Distribution of Marine Animals. Ann. Mag. Nat. Hist. 7th series, xiii, pp. 117-130.
38. MOLOT, E. Sur la découverte a la Montagne de Berru de la Faune du Thanétien. Bull. Soc. Reims xiii, pp. 50, 51.
- PREIWISCH. (39) Zool. Rec. 1903. Notice by MAAS (33).
39. RANGE, P. Das Diluvialgebiet von Lübeck und seine Dryastone. Zeitschr. Naturw. lxxvi (3), pp. 161-272.
40. REMEŠ, M. M. O zkamenělinách bludných balvanů z okolí Příbora. Vestník. Klub. Prostejove i, 1898, pp. 5-10.
41. ROWE, A. W. The zones of the White Chalk of the English Coast. (IV) Yorkshire. P. Geol. Ass. xviii (4), pp. 193-296, pls. 17-40.
- SCHRAMMEN. (46, 47) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).
- SCHUBERG. [See CLAUS & GROBBEN (4).]
42. SCHEPOTIEFF, A. Zur Organisation von Rhabdopleura. Bergens Mus. Aarbog (1), No. 2, pp. 1-21, with 3 pls.
43. SCHULZE, F. E. Hexactinellida. Wissenschaftliche Ergebnisse der Deutschen Tiefsee-Expedition auf dem Dampfer "Valdivia," 1898-1899. Band IV. In 2 parts, 266 pp., 52 pls. with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 813-817.
- SCHULZE. (48) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
44. SCHÜTZE, E. Die Fauna der schwäbischen Meeresmolasse. I Teil, Spongien und Echinodermen. Jahresh. Ver. Württemb. lx, pp. 147-155.
Reprinted in Mt. Nat.-Kab. Stuttgart xxvi, pp. 147-158.

45. *SEELY, H. M. Some Sponges of the Chazy formation. Vermont, Rep. Geol. Burlington iii, 1902, pp. 151-161, with 1 pl.
SOLLAS. (49) Zool. Rec. 1903. Abstract by MAAS (33), and Ann. Nat. Hist. p. 67, xii.
46. SOWINSKY, W. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoo-géographique indépendante. (In Russian.) Zapiski Kiev. Obshch. xviii, pp. 1-487.
47. SZYMAŃSKI, J. M. Zur Anatomie und Systematik der Hornschwämme des Mittelmeeres. Zool. Anz. xxvii, 1903-04, pp. 445-449.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 344.
48. *——. Hornschwämme von Aegina und Brioni bei Pola. Inaug. Dissert. Breslau, 52 pp., 9 figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 549, 550.
THEILE. (50, 51) Zool. Rec. 1903 Spong. Abstracts by MAAS (33).
49. THUM, E. Bericht über Eine Sammlung trockener Chalineen-Skelete aus dem Brüsseler Museum. Ann. Soc. malac. Belgique. Mémoires. pp. 9-21, with text-figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 431.
50. TOPSENT, E. Spongiaires des Açores. Résultats des Camp. Scien. Prince Monaco. Fasc. xxv, 263 pp., 18 pls., with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 550, 551.
51. ———. *Sarostegia oculata*, Hexactinellide nouvelle des îles du Cap-Vert. Bull. Mus. Monaco, No. 10. pp. 1-8, with 3 figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 431.
52. ———. *Heteroclathria hallezi*, type d'un genre nouveau d'Ectyonines. Arch. Zool. exp. ii (6), pp. 93-98, with 2 figg.
Abstract by LENDENFELD in Zool. Zentrbl. xi, p. 483.
53. ———. Notes sur les Éponges du Travailleur et du Talisman. I. *Hexactinella filholi*, nov. sp. Bull. Mus. Paris No. 2, pp. 62-66.
- 53A. ———. Notes sur les Éponges du Travailleur et du Talisman. II. *Hexactinella grimaldii* Topsent, *Malacosaccus unguiculatus* F. E. Schulze, *Regadrella phoenix* O. Schmidt. T. c. No. 4, pp. 195-200.
54. ———. Notes sur les Éponges du Travailleur et du Talisman. III. *Leucopsacus scoliodocus* Ij., var. *retroscissus*; *Sarostegia oculata* Tops. T. c. No. 6, pp. 372-378.
———. (52) Zool. Rec. 1903 Spong. Abstract by MAAS (33).
URBAN. (53) Zool. Rec. 1903 Spong. Notice by MAAS (33).
55. USSING, N. V. Danmarks Geologi i almenfatteligt Omrids. Danmarks geol. Unders. iii, No. 2, p. 78.
56. *VANHÖFFEN, E. Die Tierwelt des Südpolargebiets. Zeitschr. Ges. Erkunde. Berlin pp. 362-370.
57. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Denk. Ges. Jena. Fest. Hæckel, pp. 161-163.
58. WELTNER, W. Bericht über die Leistungen in der Spongiologie während des Jahres 1902. Arch. Naturg. ii, Heft. 3, 1897 [1904], pp. 301-340.
59. ———. Die Spongien im "International Catalogue of Scientific Literature." Zool. Anz. xxvii, 1903-04, pp. 788, 789.

60. WILSON, H. V. Sponges. Reports on an Exploration off the West Coasts of Mexico, Central and South America, and off the Galapagos Islands, in charge of Alexander Agassiz, by the U. S. Fish Commission Steamer "Albatross" during 1891. Mem. Mus. Comp. Zool. Harv. Coll. xxx, No. 1, 161 pp., 26 pls., with explanations.
Abstract by LENDENFELD in Zool. Zentrbl. xi, pp. 817, 818.

II. BIOLOGY.

A. EVOLUTION (PHYLOGENY, VARIATION, &c.).

- Phylogenetic relation between *Lyssacina* and *Dictyonalia*: IJIMA (24) p. 211.—Descent Theory illustrated by Sponges: LENDENFELD (28).—Variation in Siliceous sponges, remarks on, pp. 8-11; distinction of species in sponges, remarks on: WILSON (60) pp. 11, 12.

B. MORPHOLOGY.

(i) *General Accounts.*

- Brief general account of Sponge morphology: CLAUS & GROBBEN (4) pp. 249-252.

(ii) *External Characters.*

- Lichen-like growth of *Spongilla lacustris*: GILLOT (13).—Conical elevations on surface of *Acanthascus cactus* F. E. S.: IJIMA (24) pp. 144, 145.—Size of body, body-form and external characters in general of Hexactinellids: SCHULZE (43) pp. 185-190.—Pedunculate form of body in *Hyalonema pedunculatum*, p. 19; shrub-like habitus of *Sclerothamnopsis compressa* resembling that of hitherto unique *Sclerothamnus clausii* M.: WILSON (60) p. 84.

(iii) *Anatomy of the Soft Tissues. Canal-System.*

- Porosphæra*, canal-system of: HINDE (18) pp. 17, 18.—Soft parts of *Acanthascus alani* Ij., pp. 159, 160, of *A. cactus* F. E. S., pp. 154-158, of *Aulosaccus mitsukurii* Ij., pp. 126, 127, of *A. schulzei* Ij., pp. 111, 112, of *Crateromorpha corrugata* Ij., p. 79-82, of *C. meyeri* J. E. G., pp. 59, 60, of *C. meyeri tuberosa* Ij., p. 69, of *C. pachyactina* Ij., p. 75, of *Hyalascus giganteus* Ij., pp. 101-103, of *H. sagamiensis* Ij., pp. 89, 90, of *Lanuginella pupa*, pp. 14-16, of *Rhabdocalyptus capillatus* Ij., pp. 287-291, of *R. victor* Ij., pp. 251-253, of *Scyphidium longispina*, pp. 29-31, of *Staurocalyptus entacanthus*, n. sp., pp. 200-202, of *S. glaber* Ij., pp. 212, 213, of *Vitrollula fertilis*, pp. 43-46: IJIMA (24).—Soft parts of Hexactinellids: SCHULZE (43) pp. 188-197.—Soft parts of horny sponges: SZYMAŃSKI (47).—Similarity between main afferent and efferent canals and their apertures in *Pæcillastra tricornis*, p. 102; Sollas' membrane present in *Pæcillastra* and *Penares*, pp. 103, 107, 113; Character of sieve-plate region in *Regadrella delicata*, p. 36: WILSON (60).

(iv) *Skeletal System.*

- (a) **General Accounts.**—Brief account of sponge spicules: CLAUS & GROBBEN (4) p. 251.—Spiculation of *Leucosolenia complicata*, *L. variabilis*, *L. botryoides*, full description of: MINCHIN (36) pp. 363-370, 376-383, 387-391.—Spiculation of sponges in general, remarks on: TOPSENT (50) pp. 14-16.

(b) **Material of the Skeleton.**—Spicule-sheaths in Hexactinellids, pp. 204–210; Chemical nature of spicule-substance in Hexactinellids, pp. 219–221; Structure of spicules in Hexactinellids, pp. 221–243: SCHULZE (43).

(c) **Morphology, Development and Nomenclature of Skeletal Elements.**—Macrodiscohexasters of *Aulosaccus schulzei* Ij., pp. 114–117; Spicules (gastralia) present on surface of excurrent canals in *Crateromorpha meyeri* J. E. G., called Canalaria, p. 65; Degenerate oxyhexasters with less than six terminal points in *Hyalascus sagamiensis* Ij., p. 95; Hexactinose oxyhexasters in *Hyalascus similis*, n. sp., pp. 99, 100; Hexactinellid scleroblast-nuclei in *Rhabdocalyptus capillatus* Ij., p. 290; Siliceous reticular bodies in *Staurocalyptus glaber* Ij., pp. 210, 211; Spicules (stauractins) in the larva of *Vitrollula fertilis*, pp. 52, 53: IJIMA (24).—Huge basal spicule of *Monorhaphis chuni*, n. g., n. sp., pp. 112, 113; Intracellular development of siliceous spicules, pp. 243–254: SCHULZE (43).—Structure of discohexasters in *Caulophacus schulzei* suggests evolution of the hexaster from the hexact, pp. 48, 49; Degeneration of the uncinata into the oxydiact in *Hexactinella labyrinthica*, p. 81; Reticular skeletal masses in *Hexactinella labyrinthica*, p. 79; Pathological amphidiscs (hexacts with additional rays) in *Hyalonema pateriferum*, p. 32; Peculiar dichotriænes of *Penares foliaformis* approach shape of Lithistid phyllotriæne, p. 113; Arrangement of axial canals in scopulæ of *Sclerothamnopsis* indicates equivalence to branched diacts, p. 86; Protriænes of *Thenia* are modified dichotriænes, p. 89; Metasters intermediate between spirasters and euasters in *Thenia pyriformis*, p. 100; Spicule terminology, remarks on, pp. 13, 14: WILSON (60).—Spicules in larva of *Thoosa armata* T.: TOPSENT (50) pp. 110, 111.

(d) **Skeletal Anatomy.**—Hexactinellid spicules, geological remains of: CLARKE (3).—*Porosphæra*, skeleton of: HINDE (18) pp. 14–17.—Chalineen-skelete: THUM (49).—Spiculation of *Malacosaccus floricomatus* T.: TOPSENT (50) pp. 35–38.—Reticular skeletal septa cross sponge cavity in *Euplectella* and *Chonelasma*: WILSON (60) pp. 34, 74.

(v) *Histology.*

(a) **General Accounts.**—Histology of *Lanuginella pupa*, pp. 14–16, of *Rhabdocalyptus capillatus* Ij., pp. 288–290, of *R. victor* Ij., pp. 252, 253, of *Scyphidium longispina*, pp. 29–31, of *Vitrollula fertilis*, pp. 44–46: IJIMA (24).—Histology of Hexactinellids: SCHULZE (43) pp. 197–219.

(b) **Histology of Special Organs or Classes of Cells.**—Thesocytes and rosette-like bodies in *Acanthascus cactus* F. E. S., pp. 157, 158; Archæocytes of *Lanuginella pupa*, p. 16; Archæocytes, thesocytes, and peculiar bodies in *Scyphidium longispina*, pp. 30, 31; Thesocytes of *Staurocalyptus entacanthus* n. sp., pp. 201, 202; Archæocytes of *Vitrollula fertilis*, pp. 44, 45; Choanocytes of *Vitrollula fertilis*, p. 44: IJIMA (24).—Thesocytes of Hexactinellids, pp. 210–213; Scleroblasts in Hexactinellids, pp. 204–210: SCHULZE (43).

C. PHYSIOLOGY.

(i) **General Accounts.**—Vacant.

(ii) **Particular Functions.**—Nutrition in Sponges: COTTE (6) pp. 776–780.

D. BIONOMICS.

Similarity of external appearance between certain Doris and Sponges : CUENOT (7) p. 4.—Actinians commensal on sponges : DUERDEN (9).—Molluscan eggs contained in tissues of sponges and destruction of mollusc shells by acid secreted by a siliceous sponge : GRUVEL (15).—Pearls originated by boring sponges, such as *Clione* : HERDMAN (17).—Development of Calcareous Sponges in water deprived of calcium salts : MAAS (31, 32).—Influence of local conditions on coloration of sponges, remarks on : TOPSENT (50) p. 17.—Mutual attachment of deep-sea Hexactinellids : WILSON (60) pp. 43, 50, 51.

E. REPRODUCTION AND DEVELOPMENT.

(i) *Germ-Cells, Fertilization.*

Spermatogenesis and Oogenesis in sponges : GÖRICH (14).—Ova and sperm-cells of Hexactinellids : SCHULZE (43) pp. 215-219.

(ii) *Embryology.*

(a) **General Accounts.**—Brief account of sponge embryology : CLAUS & GROBBEN (4) p. 253.

(b) **Early stages, larvae, metamorphosis and post-larval development.**—*Porosphaera*, manner of growth : HINDE (18) pp. 11-14.—Larvæ of *Vitrollula fertilis* : IJIMA (24) pp. 46-55.—Larvæ of *Sycandra setosa* reared in water deprived of calcium salts : MAAS (32).—Larvæ of Hexactinellids : SCHULZE (43) pp. 215-218.—Larvæ of *Thoosa armata* T. : TOPSENT (50) pp. 110, 111.—Development of complex *Eurete* and *Farrea* colonies from simple cup-like forms : WILSON (60) pp. 64, 65.

(iii) *Asexual Reproduction.*

(a) **Fission and Vegetative Budding.**—Budding in *Acanthascinae*, pp. 129, 143, in *Rhabdocalyptus mollis* F. E. S., pp. 258, 259, in *Scyphidium longispina*, p. 22 : IJIMA (24).

(b) **Germinal budding.**—Origin of the larva from archæocyte-congeries in *Vitrollula fertilis* : IJIMA (24) pp. 53-55.—Gemmules of *Tetilla longipilis*, n. sp. : TOPSENT (50) p. 98.

F. MISCELLANEOUS.

Bibliography.—Record of Sponge literature for 1903 : BIBL. ZOOL. ix, pp. 9, 57, 190, 304, 423.—Titles of 27 memoirs upon sponges, with abstracts : MAAS (33).—List of memoirs on sponges published in the years 1901, 1902, with summaries under different headings of the more important additions to scientific knowledge of the Porifera : WELTNER (58).—Abstracts of certain sponge memoirs (1900-1904) : LENDENFELD (30).

Technique.—Methods of displaying spicules of fossil siliceous sponges : LENDENFELD (29).—Methods of preparing sponges : MARPMANN (35).—Method of preparation of calcareous spicules : MINCHIN (36) p. 356.

Economics.—Full account of the Sponge fishery of Florida in 1900 : COBB (5).

Classification.—Classification, general remarks on: TOPSENT (50) pp. 17-19.

Chemistry of Sponges.—Spongosterin from *Suberites*, &c.: HENZE (16).

III. DISTRIBUTION.

A. GEOGRAPHICAL.

α. MARINE.

(i) **General.**—General distribution of Sponges, remarks on: M'INTOSH (36).—Horizontal and bathymetrical distribution of Hexactinellids: SCHULZE (43) pp. 257-265.

(ii) **Atlantic Ocean and Adjacent Seas.**—Golfe de Gascogne, sponges from: GRUVEL (15).—Lake Baical, *Veluspa baicalensis*, D., *V. fusifera*, *Spongilla microgemmata*, S., *Lubomyrskia irregularis*, S., from: IAKHONTOFF (23) p. 3.—Plymouth, sponge fauna of: MAR. BIOL. ASS. (34).—Atlantic Ocean, Hexactinellids from: SCHULZE (43).—Ponto-Aralo-Kaspian marine basin, sponges from: SOWINSKY (46) pp. 173, 289, 328.—Aegina and Brioni bei Pola, horny sponges from: SZYMAŃSKI (48).—Azores archipelago, lists of sponges obtained from: TOPSENT (50).—Îles du Cap-Vert, *Sarostegia oculata* from: TOPSENT (51).

(iii) **Indian Ocean and Adjacent Seas.**—Indian Ocean, Hexactinellids from: SCHULZE (43).

(iv) **Pacific Ocean and Adjacent Seas.**—Sagami Sea, Hexactinellids from: IJIMA (24).—San Diego, Southern California, sponges from: KOFOID (27).—West coasts of Mexico, Central and South America and off the Galapagos Islands, sponges collected from, pp. 5, 6; *Thenaea fenestrata* now recorded for the Pacific, p. 91: WILSON (60).

(v) **Arctic Seas.**—Vacant.

(vi) **Antarctic Seas.**—Antarctic Seas, calcareous sponges from: VANHÖFFEN (56).

β. FRESHWATER SPONGES.

Spongilla lacustris from Chambilly: GILLOT (13).

B. GEOLOGICAL.

(i) GENERAL.

Vacant.

(ii) CAINOZOIC.

Swabian sandstone, sponges from: SCHUTZE (44).—Diluvial deposits of Lübeck, *Spongilla lacustris*, L. from: RANGE (39) p. 238.—Fossil (Cainozoic) sponges from Victoria, South Australia and Tasmania: DENNANT & KITSON (8) p. 136.

(iii) MESOZOIC.

Untern Kreide im westschweizerischen Jura, sponges from: BAUMBERGER (1) p. 21.—Muschelkalk, *Scyphia roemeri*, n. sp., *S. sp.*, *S. caminensis*, from the: ECK (10).—Cretaceous rocks, New South Wales, *Purisiphonia clarkei*,

B. from: ETHERIDGE (11).—Oolitic and cretaceous rocks south of Scarborough, sponges from: FOX-STRANGWAYS (12) p. 40 et seq.—English Chalk, zonal distribution of species of *Porosphæra* in: HINDE (18) pp. 6–10.—*Cephalites longitudinalis*, *Pharetrospongia strahani*, *Plinthosella squamosa*, *Plocoscyphia convoluta*, *P. sp.*, *Porosphæra globularis*, *P. nuciformis*, *P. patelliformis* from the Surrey Chalk: HINDE (19).—English Chalk, *Placotrema cretaceum*, *Ventriculites decurrens*, *V. impressus*, *V. alcyonoides*, *V. radiatus*, *Plocoscyphia*, *Camerospongia*, *Porosphæra pileolus*, *P. sp.* from the: HOLMES (20).—Kreideformation, fossil sponges from the: JAHN (25).—Upper, Lower and Middle English Chalk, list of fossil sponges from: JUKES-BROWNE & HILL (26).—Chalk of Yorkshire Coast, *Ventriculites radiatus*, *V. cribrerosus*, *V. impressus*, *V. infundibuliformis*, *V. convolutus*, *V. decurrens*, *Plocoscyphia convoluta*, *Porochonia simplex*, *Coscinopora infundibuliformis*, *Guettardia stellata*, *Leptophragma murchisoni*, *Cœloptychium agaricoides*, *Callopegma obconicum*, *Heterostinia obliqua*, *Siphonia konigi*, *Stelletta inclusa*, *Cliona cretacea*, *Porosphæra globularis*, *P. globularis* var. *nuciformis*, *P. pileolus*, *P. pileolus* var. *patelliformis*, *P. pileolus* var. *arrecta*, from: ROWE (41) pp. 292, 293.—Flint, Denmark, fossil sponges from: USSING (55).—Solnhofener Plattenkalke, *Ammonella quadrata*, **n. g., n. sp.**, *Phyllospongia lumbricaria*, *P. acuminata*, *P. elongata*, *P. rubarticulata*, *P. latifrons*, *P. varius*, from the: WALTHER (57) pp. 162, 163.

(iv) PALÆOZOIC.

Silurian of Rio Trombetas, Para, Brazil, sponges from: CLARKE (3).

IV. SYSTEMATIC.

[A name of a species, followed only by a reference to a name from the list of titles, is a record of occurrence pure and simple. The approximate locality (or horizon) can be ascertained by looking up the author's name attached to the particular species in the above (section III).]

A. PORIFERA, GENERAL.

B. CALCAREA.

(i) *HOMOCÆLA*.

Family CLATHRINIDÆ.

Clathrina coriacea, *C. lacunosa*: MAR. BIOL. ASS. (34).

Family LEUCOSOLENIIDÆ.

Leucosolenia botryoides, *L. complicata*, *L. variabilis*: MAR. BIOL. ASS. (34).—*L. complicata*, *L. variabilis*, *L. botryoides* redefined and re-described in full: MINCHIN (36) pp. 360–394.

(ii) *HETEROCÆLA*.

Family SYCETTIDÆ.

Sycon seu *Sycandra raphanus*, spermatogenesis in: GÖRICH (14).—*S. compressum*, *S. coronatum*: MAR. BIOL. ASS. (34).—*S. setosa* grown in water deprived of calcium salts: MAAS (31, 32).—*S. setosum*, *S. coronata*: SOWINSKY (46) p. 289.

+*Tremacystia d'orbignyi*, *T. siphonoides*: JUKES-BROWNE & HILL (26) p. 505.

Family PHARETRONIDÆ seu PHARETRONES.

- †*Bactronella parvula*, *B. australis*: DENNANT & KITSON (8).
 †*Blastinia aspera*: FOX-STRANGWAYS (12) p. 40.
 †*Corynella* sp.: JAHN (25).
 †*Discoelia peronni*: BAUMBERGER (1) p. 21.
 †*Elasmoiera sequana*, *E. crassa*: BAUMBERGER (1) p. 21.
 †*Elasmostoma consobrinum*, *E. crassum*, *E. scitulum*, *E.* sp.: JUKES-BROWNE & HILL (26) p. 504.—*E.* sp.: JAHN (25).
 †*Holcospongia* (*Spongia*) *floriceps*, *H. polita* (*Stellispongia corallina*): FOX-STRANGWAYS (12) p. 40.
 †*Manon marginatum*: JUKES-BROWNE & HILL (26) p. 506.
 †*Oculospongia* sp.: BAUMBERGER (1) p. 21.
 †*Peronidella recta*, *H.*: FOX-STRANGWAYS (12) p. 40.
 †*Pharetrospongia strahani*: JUKES-BROWNE & HILL (26) p. 504.—*P. strahani*: HINDE (19).
 †*Plectroninia balbi*: DENNANT & KITSON (8).
 †*Porosphæra*, history, and full description of genus and species, pp. 1–25; *P. globularis*, *P. nuciformis*, *P. woodwardi*, *P. pileolus* redescribed, pp. 19–23; *P. patelliformis*, **n. sp.**, *P. arrecta*, **n. sp.** described, pp. 23, 24: HINDE (18).—*P. globularis*, *P. nuciformis*, *P. patelliformis*: HINDE (19).—*P. pileolus*, *P.* sp.: HOLMES (20).—*P. globularis*: JAHN (25).—*P. globularis*, *P. globularis* var. *nuciformis*, *P. pileolus*, *P. pileolus* var. *patelliformis*, *P. pileolus* var. *arrecta*: ROWE (41) p. 293.
 †*Siphonocelia crassa*: BAUMBERGER (1) p. 21.
Sparsispongia gemmata: BAUMBERGER (1) p. 21.
 †*Spongia* [*Holcospongia*] *floriceps*: FOX-STRANGWAYS (12) p. 49.
 †*Stellispongia salevensis*: BAUMBERGER (1) p. 21.
 †*Tretocalia pezica*: DENNANT & KITSON (8).
 †*Tremospongia* sp. BAUMBERGER (1) p. 21.
 †*Woodwardi*: JUKES-BROWNE & HILL (26) p. 505.

C. HEXACTINELLIDA.

(i) LYSSACINA.

- Hexasterophora, characters of sub-order: SCHULZE (43) p. 172.
 Amphidiscophora, characters of suborder: SCHULZE (43) pp. 180, 181.

Family EUPLECTELLIDÆ.

- Euplectellidæ*, characters of family with list of genera: SCHULZE (43) pp. 172, 173.
Euplectella, characters of genus, p. 132; *E. suberea* W. T., redescribed, pp. 9–15; *E. nobilis* F. E. S. **n. sp.**, described, pp. 15–17; *E. aspergillum* R. O., redescribed, pp. 17–21; *E.* (? *simplex* F. E. S.), redescribed, pp. 21, 22: SCHULZE (43).—*E. suberea* W. T., redescribed: TOPSENT (50) pp. 38, 39.—*E.*, sp., described: WILSON (60) pp. 33, 34.
Holascus, characters of genus, p. 130; *H. tenuis* F. E. S. **n. sp.**, described, pp. 3–7; *H. obesus* F. E. S. **n. sp.**, described, pp. 7, 8; *H. fibulatus* F. E. S., redescribed, pp. 8, 9: SCHULZE (43).
Malacosaccus floricomatus T., redescribed: TOPSENT (50) pp. 33–38.—*M. unguiculatus* F. E. S., redescribed: TOPSENT (53A).
Regadrella, characters of genus, p. 134; *R.* (? *phœnix* O. Sch.), described, pp. 22, 23: SCHULZE (43).—*R. phœnix* Sch., redescribed: TOPSENT (50) pp. 39, 40; (53A).—*R.*, sp., described, pp. 35, 36; *R. delicata*, **n. sp.**, diagnosed and described, pp. 36–42: WILSON (60).

Family HERTWIGIDÆ.

Hertwigia, characters of genus, p. 135; *H. falcifera* O. Sch., redescribed, pp. 23, 34: SCHULZE (43).

Family CAULOPHACIDÆ.

Caulophacidæ, characters of family with list of genera: SCHULZE (43) pp. 173, 174.

Caulophacus, characters of genus, p. 137; *C. valdiviæ* F. E. S., redescribed, pp. 25–28: SCHULZE (43).—*C. schulzei*, **n. sp.**, diagnosed and described, pp. 43–50; *C.*, sp., described, p. 50: WILSON (60).

Family HYALONEMATIDÆ.

Compsocalyx, characters of **n. g.**, pp. 164, 165; *C. gibberosa* F. E. S., **n. sp.**, described, pp. 99–103: SCHULZE (43).

Hyalonematidæ, characters of family with list of genera, p. 181: SCHULZE (43).

Hyalonema, characters of genus, p. 162; *H. thomsonis* W. M., redescribed, pp. 67–69; *H. calix* F. E. S., **n. sp.**, described, pp. 69–73; *H. somalicum* F. E. S., **n. sp.**, described, pp. 73, 74; *H. globiferum* F. E. S., redescribed, pp. 75–77; *H. solutum* F. E. S., **n. sp.**, described, pp. 77, 78; *H. valdiviæ* F. E. S., **n. sp.**, described, pp. 78–80; *H. rapa* F. E. S. juv., redescribed, pp. 80–82; *H. validum* F. E. S., **n. sp.**, described, pp. 82, 83; *H. tulipa* F. E. S., **n. sp.**, described, pp. 83–85; *H. simile* F. E. S., **n. sp.**, described, pp. 85–88; *H. coniforme* F. E. S., **n. sp.**, described, pp. 88, 89; *H. urna* F. E. S., **n. sp.**, described, pp. 89–91; *H. apertum* F. E. S., redescribed, pp. 91–95; *H. molle* F. E. S., **n. sp.**, described, pp. 95, 96; *H. proximum* F. E. S., **n. sp.**, described, pp. 64–67: SCHULZE (43).—*H. ovuliferum* F. E. S., redescribed, pp. 16–19; *H. pedunculatum*, **n. sp.**, diagnosed and described, pp. 19–22; *H. bianchoratum*, **n. sp.**, diagnosed and described, pp. 22–25; *H.*, species diversæ described, pp. 25–28; *H. pateriferum*, **n. sp.**, diagnosed and described, pp. 28–33: WILSON (60).—*H. thomsoni* W. M., redescribed, p. 31; *H. infundibulum* T., redescribed, p. 32: TOPSENT (50).

Pheronema, characters of genus, p. 151; *P. carpenteri* (W. T.), redescribed, pp. 50–52; *P. raphanus* F. E. S., redescribed, pp. 52–58: SCHULZE (43).—*P. grayi* S. K., redescribed, pp. 29–31: TOPSENT (50).

Platylistrum, **n. g.**, characters of genus, p. 165; *P. platessa* F. E. S., **n. sp.**, described, pp. 59–64: SCHULZE (43).

†*Stauractinella cretacea*: JUKES-BROWNE & HILL (26), p. 508.

Family SEMPERELLIDÆ.

(SEMPERELLINÆ removed from HYALONEMATIDÆ to form a distinct family.)

Semperellidæ, characters of family with list of genera: SCHULZE (43) p. 181.

Semperella, characters of genus, p. 167; *S. cucumis* F. E. S., redescribed, pp. 103–110; *S. spicifera* F. E. S., redescribed, pp. 110–112: SCHULZE (43).

Monoraphis, characters of **n. g.**, pp. 167, 168; *M. chuni* F. E. S., **n. sp.**, described, pp. 112–121; *M. divis* F. E. S., **n. sp.**, described, pp. 121–125: SCHULZE (43).

Family LEUCOPSACIDÆ.

Leucopsacidæ, characters of family with list of genera, p. 175 : SCHULZE (43).

Leucopsacus scoliodocus Ij., **n. var. retroscissus**, described : TOPSENT (54).
Channangium, characters of **n. g.**, p. 138 ; *C. crater* F. E. S., **n. sp.**, described, pp. 31-33 ; *C. sp.*, F. E. S., described, pp. 33, 34 : SCHULZE (43).

Placopegma, characters of genus, p. 137 ; *P. solutum* F. E. S., redescribed, pp. 28-31 : SCHULZE (43).

Family ROSSELLIDÆ.

Diagnosis of the family, subdivided into *Lanuginellinæ*, *Rossellinæ*, and *Acanthascinæ* : IJIMA (24) pp. 1, 2 ; SCHULZE (43) pp. 175, 176.

Rossellinæ, diagnosis of sub-family and key to genera : IJIMA (24) pp. 16-19 ; SCHULZE (43) p. 176.

Lanuginellinæ, diagnosis of sub-family and key to genera and species : IJIMA (24) pp. 2, 3 ; SCHULZE (43) p. 176.

Acanthascinæ, diagnosis of sub-family, general organization and key to genera : IJIMA (24) pp. 127-139 ; SCHULZE (43) p. 177.

Acanthascus F. E. S., diagnosis of genus with key to species, pp. 139, 140 ; *A. cactus* F. E. S., redescribed, pp. 140-158 ; *A. alani* Ij., redescribed, pp. 158-162 : IJIMA (24).

Asconema setubalense S. K., redescribed : TOPSENT (50) p. 41.

Aulosaccus Ij., diagnosis of genus with key to species, pp. 107-110 ; *A. mitsukurii* Ij., redescribed, pp. 117-127 ; *A. schulzei* Ij., redescribed, pp. 110-117 : IJIMA (24).

Bathydorus levis spinosus, **n. subsp.**, diagnosed and described : WILSON (60) pp. 51-54.

Bolosoma, **nom. nov.**, substituted for *Placosoma* : IJIMA (24) p. 305.

Crateromorpha J. E. Gray, diagnosis of genus and key to species, pp. 55-57 ; *C. meyeri* J. E. G., redescribed with descriptions of two new sub-species *C. m. tuberosa* Ij., **n. subsp.** and *C. m. rugosa* Ij., **n. subsp.**, pp. 57-74 ; *C. pachyactina* Ij., redescribed, pp. 74-78 ; *C. corrugata* Ij., redescribed, pp. 78-86 : IJIMA (24).

Hyalascus Ij., diagnosis of genus and key to species, pp. 87, 88 ; *H. sagamiensis* Ij., redescribed, 88-96 ; *H. giganteus* Ij., redescribed, pp. 100-107 ; *H. similis*, **n. sp.**, described, pp. 96-100 : IJIMA (24).

Lanuginella pupa O. S., redescribed : IJIMA (24) pp. 3-16, pl. i.

Rhabdocalyptus F. E. S., diagnosis of genus and key to species, pp. 236-238 ; *R. victor* Ij., redescribed, pp. 238-253 ; *R. unguiculatus*, **n. sp.**, described, pp. 268-276 ; *R. capillatus* Ij., redescribed, pp. 276-291 ; *R. mollis* F. E. S., redescribed, pp. 253-268 : IJIMA (24).—*R.*, characters of genus, p. 140 ; *R. baculifer* F. E. S., **n. sp.**, described, pp. 34-36 : SCHULZE (43).

Scyphidium F. E. S., diagnosis of genus and key to species, pp. 20, 21 ; *S. namiyei*, **n. nom.** for *Vitrollula namiyei* Ij., redescribed, pp. 32-37 ; *S. longispina*, **n. nom.** for *Rossella longispina* Ij., redescribed, pp. 22-31 : IJIMA (24).

Staurocalyptus Ij., diagnosis of genus and key to species, pp. 162-168 ; *S. ræperi* F. E. S., redescribed, pp. 168-172 ; *S. dowlingi* L. M. L., redescribed, pp. 172-175 ; *S. tubulosus*, **n. sp.**, described, pp. 175-180 ; *S. affinis*, **n. sp.**, described, pp. 180-191 ; *S. entacanthus*, **n. sp.**, described, pp. 191-202 ; *S. heteractinus* Ij., redescribed, pp. 218-222 ; *S. pleorhaphides* Ij., redescribed, pp. 222-230 ; *S.* (sp. ?), described, pp. 231-236 ; *S. microchetus* Ij., redescribed, pp. 202-206 ; *S. glaber* Ij.,

redescribed, pp. 207-218: IJIMA (24).—*S.*, sp., described, WILSON (60) pp. 54-56.

Vitrollula Ij., characters of the genus, p. 37; *V. fertilis* Ij., redescribed, pp. 38-55: IJIMA (24).

(ii) *DICTYONINA*.

Family COSCINOPORIDÆ.

Coscinoporidæ, characters of family: SCHULZE (43) p. 178.

Bathyxiphus, sp., described: WILSON (60) pp. 75-77.

Chonelasma schulzei, T. redescribed, pp. 51-53; *C. ijimai* T., redescribed, pp. 53-55: TOPSENT (50).—*C. calyx* F. E. S. (sp.?), redescribed: WILSON (60) pp. 74, 75.

+*Coscinopora infundibuliformis*, *C. quincuncialis*, *C.* sp.: JUKES-BROWNE & HILL (26) p. 506.—*C. infundibuliformis*: ROWE (41).

+*Guetardia stellata*: ROWE (41).—*G. angularis*, *G. stellata*: JUKES-BROWNE & HILL (26) p. 506.

+*Leptophragma murchisoni*: ROWE (41).—*L. fragilis*, *L. murchisoni*: JUKES-BROWNE & HILL (26) p. 506.

+*Pleurostoma radiatum*: JUKES-BROWNE & HILL (26) p. 507.—*P. bohemicum*, *P. scyphus*: JAHN (25).

Family TRETICALYCIDÆ (formerly TRETODICTYIDÆ, Schulze).

Treticalycidæ (formerly *Tretodictyidæ* F. E. S.), characters of family with list of genera: SCHULZE (43) pp. 179, 180.

Hexactinella labyrinthica, n. sp., diagnosed and described, pp. 77-82; *H. ventilabrum* Carter (sp.?), described, pp. 82, 83; *H. tubulosa* F. E. S. (sp.?), described, pp. 83, 84: WILSON (60).—*H. filholi*, n. sp., described: TOPSENT (53).—*H. grimaldii* T., redescribed: TOPSENT (53A).

Sclerothamnopsis compressa, n. g. et sp., diagnosed and described: WILSON (60) pp. 84-87.

Family AULOCYSTIDÆ.

Characters of family: SCHULZE (43) p. 180.

Family DACTYLOCALYCIDÆ.

Characters of family, with list of genera: SCHULZE (43) p. 180.

Auloplax, characters of genus, pp. 148, 149; *A. auricularis* F. E. S., redescribed, pp. 47-50: SCHULZE (43).

Family EURETIDÆ (includes FARREIDÆ).

Characters of family with list of genera: SCHULZE (43) pp. 177, 178.

+*Ammonella quadrata*, n. g., n. sp., described: WALTHER (57) pp. 162, 163.

+*Craticularia vulgata*, *C. subseriata*: JAHN (25).—*C. fittoni*, *C. subseriata*, *C.* sp.: JUKES-BROWNE & HILL (26) p. 506.

+*Cribrosporgia subreticulata*: JAHN (25).

Eurete, characters of genus, p. 143; *E.* sp., described, pp. 37, 38: SCHULZE (43).—*E. erectum tubuliferum*, n. subsp., diagnosed and described,

pp. 63–68; *E. erectum mucronatum*, **n. subsp.**, diagnosed and described, pp. 68, 69; *E. erectum gracile*, **n. subsp.**, diagnosed and described, pp. 69–72: WILSON (60).—*E. alicei* T., redescribed, p. 45: TOPSENT (50).

Farrea, characters of genus: SCHULZE (43) p. 142.—*F. occa* B., **n. var.**, *laminaris*, redescribed, p. 43; *F. weltneri* T., redescribed, p. 43: TOPSENT (50).

F. occa claviformis, **n. subsp.**, diagnosed and described, pp. 57–59; *F. mexicana*, **n. sp.**, diagnosed and described, pp. 60–62; *F. sp.*, described, p. 62: WILSON (60).

Ramella, **n. g.**, characters of, p. 144; *R. tubulosa* F. E. S., **n. sp.**, described, pp. 38, 39: SCHULZE (43).

Sarostegia oculata, **n. g., n. sp.**, described: TOPSENT (51).—*S. oculata* T., redescribed: TOPSENT (54).

+*Strephimia convoluta*, *S. retiformis*: JUKES-BROWNE & HILL (26) p. 508.

+*Verrucocalia tubulata*, *V. vectensis*, *V. sp.*: JUKES-BROWNE & HILL (26) p. 509.

Family MELLITIONIDÆ (APHROCALLISTIDÆ).

Aphrocallistidæ, characters of family: SCHULZE (43) pp. 178, 179.

Aphrocallistes, characters of genus, p. 148; *A. beatrix* J. E. G., redescribed, pp. 39–47: SCHULZE (43).—*A. azoricus* T., redescribed: TOPSENT (50) pp. 48–50.—*A. vastus* F. E. S. (sp.?), redescribed: WILSON (60) p. 73.—*A. sp.*: JUKES-BROWNE & HILL (26) p. 505.

+*Stauroinema carteri*, *S. lobatum*, *S. planum*: JUKES-BROWNE & HILL (26) p. 508.

Family MÆANDROSPONGIDÆ.

+*Callodictyon angustatum*: JUKES-BROWNE & HILL (26) p. 505.

+*Camerospongia*: HOLMES (20).—*C. aperta*, *C. campanulata*, *C. capitata*, *C. subrotunda*: JUKES-BROWNE & HILL (26) p. 505.

+*Diplodictyon bayfieldi*: JUKES-BROWNE & HILL (26) p. 506.

+*Etheridgea sp.*: JUKES-BROWNE & HILL (26) p. 506.

+*Plocoscyphia convoluta*, *P. sp.*: HINDE (19).—*P.*: HOLMES (20).—*P. pertusa*: JAHN (25).—*P. convoluta*, *P. elegans*, *P. fenestrata*, *P. flexuosa*, *P. foliacea*, *P. labrosa*, *P. meandrina*, *P. labyrinthica*, *P. reticulata*, *P. subruta*, *P. vagans*: JUKES-BROWNE & HILL (26) pp. 507, 508.—*P. convoluta*: ROWE (41).

+*Porochonia simplex*: JUKES-BROWNE & HILL (26) p. 508.—*P. simplex*: ROWE (41).

+*Toulminia obliqua*: JUKES-BROWNE & HILL (26) p. 509.

+*Tremabolites perforatus*: JUKES-BROWNE & HILL (26) p. 509.

Family STAURODERMIDÆ.

+*Cincliderma quadratum*: JUKES-BROWNE & HILL (26) p. 505.

+*Ophrystoma micrommatum*: JUKES-BROWNE & HILL (26) p. 507.

+*Placotrema cretaceum*: HOLMES (20).—*P. cretaceum*: JUKES-BROWNE & HILL (26) p. 507.

+*Porostomia (Porospongia) sp.*: BAUMBERGER (1) p. 21.

+*Purisiphonia clarkei*: ETHERIDGE (11).

Family CÆLOPTYCHIDÆ.

+*Cæloptychium agaricoides*, *C. decimium*, *C. sp.*: JUKES-BROWNE & HILL (26) p. 506.—*C. agaricoides*: ROWE (41).

Family VENTRICULITIDÆ.

- +*Cephalites longitudinalis*: HINDE (19).—*C. alternans*, *C. benettii*, *C. bullatus*, *C. catinifer*, *C. compressus*, *C. guttatus*, *C. longitudinalis*, *C. paradoxus*, *C. perforatus*: JUKES-BROWNE & HILL (26) p. 505.
- +*Polyplastidium racemosum*, *P. tuberosum*: JUKES-BROWNE & HILL (26) p. 508.
- +*Rhizopoterion cervicorne*: JAHN (25).
- +*Sestrocladia furcatus*: JUKES-BROWNE & HILL (26) p. 508.
- +*Sporodoscina capax*, *S. micrommata*: JUKES-BROWNE & HILL (26) p. 508.
- +*Ventriculites decurrens*, *V. impressus*, *V. alcyonoides*, *V. radiatus*: HOLMES (20).—*V. alcyonoides*, *V. alternans*, *V. infundibuliformis*, *V. augustatus*, *V. convolutus*, *V. cribrus*, *V. decurrens*, *V. impressus*, *V. mammillaris*, *V. moniliferous*, *V. radiatus*, *V. quincuncialis* (see *Coscinopora*), *V. simplex* (see *Porochonia*): JUKES-BROWNE & HILL (26) p. 509.—*V. marginatus*, *V. radiatus*, *V. odontostoma*: JAHN (25).—*V. radiatus*, *V. cribrus*, *V. impressus*, *V. infundibuliformis*, *V. convolutus*, *V. decurrens*: ROWE (41).

D. DEMOSPONGIÆ.

(i) *TETRAXONIDA*.

(a) Order CARNOSA.

Sub-order MICROTRIÆNOSA.

- Corticella geodioides* (Carter) T., redescribed: TOPSENT (50) pp. 77-79.
- Thrombus abyssi* (Carter) S., **n. var. niger**, described: TOPSENT (50) pp. 100-102.

Sub-order MICROSCLEROPHORA.

Family PLAKINIDÆ.

- Placinastrella oxeata*, **n. sp.**, described: TOPSENT (50) pp. 102, 103.

(b) Order TETRACTINELLIDA.

(1) Sub-order CHORISTIDA.

Tribe SIGMATOPHORA.

Family TETILLIDÆ.

- Chrotella amphiacantha*, **n. sp.**, described: TOPSENT (50) pp. 96, 97.
- Craniella cranium* (Müller) S., redescribed, pp. 99, 100; *C. disigma*, **n. sp.**, described: TOPSENT (50) p. 100.
- Tetilla longipilis*, **n. sp.**, described: TOPSENT (50) pp. 97-99.

Tribe ASTROPHORA.

Family GEODIDÆ.

- Cydonium gigas*, nutrition in: COTTE (6).
- Erylus nummulifer* T., redescribed, pp. 71, 72; *E. granularis*, **n. sp.**, described, pp. 72, 73; *E. mammillaris* (Schmidt) G., redescribed, pp. 73-75; *E. chavesi*, **n. sp.**, described, p. 75: TOPSENT (50).

Isops pachydermata S., redescribed : TOPSENT (50) p. 67.

Geodia eosaster (Sollas) T., redescribed, pp. 67-69 ; *G. echinastrella*, **n. sp.**, described, p. 70 ; *G. sphaerastrella*, **n. sp.**, described, pp. 70, 71 : TOPSENT (50).—*G. stelloso* : SOWINSKY (46) p. 289.—*G. baretti* : SCHEPOTIEFF (42) p. 3.

Family STELLETTIDÆ.

+*Ophiraphidites anastomosans* : JUKES-BROWNE & HILL (26) p. 507.

Penares foliaformis, **n. sp.**, diagnosed and described : WILSON (60) pp. 111-114.—*P. sclerobesa* S. E. G., redescribed : TOPSENT (50) pp. 82, 83.

Pilochrota inermis, **n. sp.**, described, pp. 79, 80 ; *P. ventricosa*, **n. sp.**, described, pp. 80, 81 ; *P. lactea* (Carter) S., redescribed, pp. 81, 82 : TOPSENT (50).

+*Stelletta inclusa* : JUKES-BROWNE & HILL (26) p. 508 and ROWE (40) p. 293.—*S. tuberosa* T., redescribed, TOPSENT (50) pp. 75-77.

Stryphnus fortis (Vosmaer) S., redescribed : TOPSENT (50) pp. 83-85.

+*Tethyopsis cretaceus* : JUKES-BROWNE & HILL (26) p. 508.

Family THENEIDÆ.

Thenea fenestrata (Sch.) S., redescribed, pp. 88-91 ; *T. echinata*, **n. sp.**, diagnosed and described, pp. 91-94 ; *T. lamelliformis*, **n. sp.**, diagnosed and described, pp. 95-98 ; *T. pyriformis*, **n. sp.**, diagnosed and described, pp. 98-100 : WILSON (60).—*T. schmidtii* S., redescribed, p. 85 : TOPSENT (50).

Family PACHASTRELLIDÆ.

TOPSENT (46) includes the *Theneidæ* and *Pachastrellidæ* in the family *Asterostreptidæ*.

Characella pachastrelloides (Carter) S., redescribed : TOPSENT (50) pp. 95, 96.

Nethea amygdaloides (Carter) T., redescribed : TOPSENT (50) p. 94.

Pæcillastra compressa (Bowerbank) S., redescribed, pp. 89, 90 ; *P. symbiotica* T., redescribed, pp. 90-92 : TOPSENT (50).—*P. tricornis*, **n. sp.**, diagnosed and described, pp. 101-105 ; *P. cribraria*, **n. sp.**, diagnosed and described, pp. 105-110 : WILSON (60).

Pachastrella monilifera S., redescribed : TOPSENT (50) pp. 92-94.—+*P. convoluta* : JUKES-BROWNE & HILL (26) p. 507.

Sphinctrella gracilis S., redescribed, pp. 88, 89 ; *S. horrida* S., redescribed, p. 86 ; *S. ornata* S., redescribed, p. 87 : TOPSENT (50).

Family PLACOSPONGIDÆ.

Rhaxella perforata H. : FOX-STRANGWAYS (12) p. 40.

(2) LITHISTIDA.

Tribe HOPLOPHORA

Family CLADOPELTIDÆ.

Siphonidium ramosum Sch., redescribed : TOPSENT (50) p. 63.

Family CORALLISTIDÆ.

Corallistes noli tangere Sch., redescribed : TOPSENT (50) pp. 59, 60.

Macandrewia azorica J. E. G., redescribed, pp. 60, 61 ; *M. robusta*, n. sp., described, pp. 61, 62 ; *M. ramosa*, n. sp., described, p. 62 : TOPSENT (50).

Family TETRACLADIDÆ.

+*Aulaxinia costata* : JUKES-BROWNE & HILL (26) p. 505.

+*Bolospongia constricta*, *B. globata* : JUKES-BROWNE & HILL (26) p. 505.

+*Callopegma ficoideum*, *C. obconicum*, *C. sp.* : JUKES-BROWNE & HILL (26) p. 505.—*C. obconicum* : ROWE (41).

Discodermia ramifera T., redescribed : TOPSENT (50) pp. 57, 58.

+*Hallirhoa agariciformis*, *H. costata* : JUKES-BROWNE & HILL (26) p. 506.

+*Jerea cordiformis*, *J. excavata*?, *J. websteri*, *J. sp.* : JUKES-BROWNE & HILL (26) p. 506.

+*Nelumbia tuberosa*, *N. sp.* : JUKES-BROWNE & HILL (26) p. 506.

+*Pholidocladia dichotoma*, *P. ramosa* : JUKES-BROWNE & HILL (26) p. 507.

+*Phymatella intumescens*, *P. reticulata* : JUKES-BROWNE & HILL (26) p. 507.

+*Phymaplectia cribrata*, *P. irregularis*, *P. scitula*, *P. spinosa* : JUKES-BROWNE & HILL (26) p. 507.

+*Plinthosella compacta*, *P. convoluta*, *P. nodosa*, *P. squamosa*, *P. sp.* : JUKES-BROWNE & HILL (26) p. 507.—*P. squamosa* : HINDE (19).

+*Polyjerea arbuscula*, *P. lobata* : JUKES-BROWNE & HILL (26) p. 508.

Racodiscula clava (Sch.) T., redescribed : TOPSENT (50) p. 58.

+*Ragadinia clavata*, *R. compressa*, *R. sulcata* : JUKES-BROWNE & HILL (26) p. 508.

+*Siphoneudea truncata* : BAUMBERGER (1) p. 21.

+*Siphonia ficus*, *S. konigi*, *S. tulipa* : JUKES-BROWNE & HILL (26) p. 508.—*S. konigi* : ROWE (41).

+*Thamnospongia clavellata*, *T. glabra*, *T. reticulata*, *T. sp.* : JUKES-BROWNE & HILL (26) pp. 508, 509.

+*Thecosiphonia nobilis*, *T. turbinata* : JUKES-BROWNE & HILL (26) p. 509.

+*Trachysycon sulcatum* : JUKES-BROWNE & HILL (26) p. 509.

+*Turonia variabilis* : JUKES-BROWNE & HILL (26) p. 509.

Family DESMANTHIDÆ.

Monocrepidium T., definition of genus, p. 47 ; *M. vermiculatum* T., redescribed, p. 148 : TOPSENT (50).

Family PLEROMIDÆ.

+*Doryderma ramosum*, *D. rameri*, *D. sp.* : JUKES-BROWNE & HILL (26) p. 506.

+*Heterostinia obliqua* : JUKES-BROWNE & HILL (26) p. 506.—*H. obliqua* : ROWE (41).

+*Isoraphinia tecta* : JUKES-BROWNE & HILL (26) p. 506.

+*Nematinion calyculum*, *N. sp.* : JUKES-BROWNE & HILL (26) p. 507.

Tribe ANOPLIA.

Family AZORICIDÆ.

Azorica pfeifferæ C., redescribed : TOPSENT (50) p. 64.

+*Jereica clava* : JUKES-BROWNE & HILL (26) p. 506.

Petromica grimaldii T., redescribed : TOPSENT (50) pp. 64–66.

+*Verruculina astrea*, *V. miliaris*, *V. papillata*, *V. plicata*, *V. pustulosa*, *V. reussi*, *V. sp.* : JUKES-BROWNE & HILL (26) p. 509.

Family ANOMOCLADIDÆ.

†*Astylospongia præmorsa* F. R., redescribed: REMEŠ (40).

†*Scytalia fastigiata*, *S. radiceformis*, *S. terebrata*: JUKES-BROWNE & HILL (26) p. 508.

Family RHIZOMORINIDÆ.

†*Ctenendopora callodictya* (?): JUKES-BROWNE & HILL (26) p. 505.

†*Pachinion scriptum*: JUKES-BROWNE & HILL (26) p. 507.

†*Seliscothion explanatus*, *S. planus*: JUKES-BROWNE & HILL (26) p. 508.

†*Stachyspongia spica*: JUKES-BROWNE & HILL (26) p. 505.

†*Stichophyma tumidum*, *S. sp.*: JUKES-BROWNE & HILL (26) p. 508.

(ii) MONAXONIDA.

(a) Order HADROMERINA.

1. Sub-order ACICULINA.

Family COPPATIIDÆ.

Jaspis johnstoni (Schmidt) T., redescribed, p. 128; *J. johnstoni* (Schmidt), var. *incrustans* T., redescribed, p. 128; *J. dendyi* (Sollas) T., redescribed, pp. 129, 130: TOPSENT (50).

Spongosorites placenta T., redescribed: TOPSENT (50) pp. 130, 131.

Topsentia, definition of genus, p. 131; *T. glabra* (Topsent) B., redescribed, pp. 131, 132; *T. pachastrelloides* T., p. 133: TOPSENT (50).

Family STYLOCORDYLIDÆ.

Oxycordyla, n. g., definition of genus, p. 135; *O. pellita*, n. sp., described, pp. 135, 136: TOPSENT (50).

Family TETHYIDÆ.

Heteroxya, definition of genus, p. 133; *H. corticata* T., redescribed, pp. 133–135: TOPSENT (50).

Tethya lyncurium: MAR. BIOL. ASS. (34).—*T. newberyi*: DENNANT & KITSON (8).

2. Sub-order CLAVULINA.

Family CLIONIDÆ.

Alectona millari C., redescribed: TOPSENT (50) pp. 111, 112.

Cliona labyrinthica H., redescribed, p. 105; *C. levispira* T., redescribed: TOPSENT (50) pp. 105–107.—*C. duvernoyi*, *C. nardoi*, *C. studeri*: SCHÜTZE (44).—*C. celata*: MAR. BIOL. ASS. (34).—†*C. cretacea*: ROWE (41) p. 293.—†*C. cretacea*, *C. glomerata*: JUKES-BROWNE & HILL (26) p. 505.—*C. pontica*, *C. typica*, *C. stationis*, *C. sp.*? (Czern): SOWINSKY (46) p. 289.—*Clione*, pearls originated by: HERDMAN (17).

Dotona pulchella C., redescribed: TOPSENT (50) pp. 108, 109.

Thoosa armata T., redescribed: TOPSENT (50) pp. 109–111.

Family POLYMASTIDÆ.

- Polymastia corticata* R. & D., redescribed: TOPSENT (50) pp. 119, 120.—
P. mamillaris: MAR. BIOL. ASS. (34).—*P. mœandria*, **n. sp.**, diagnosed and described: WILSON (60) pp. 115–117.
Rhaphidorus, definition of genus, p. 120; *R. setosus* T., redescribed, pp. 120–122: TOPSENT (50).
Thecophora semisuberites: SCHEPOTIEFF (42) p. 3.
Tylexocladius, definition of genus, p. 122; *T. joubini* T., redescribed, pp. 122, 123: TOPSENT (50).

Family SPIRASTRELLIDÆ.

- Hymedesmia unistellata* T., **n. var. aspera**, redescribed, pp. 112, 113;
H. chondrilloides T., redescribed, pp. 113, 114; *H. stelligera* C., redescribed, p. 114: TOPSENT (50).
Latrunculia biannulata T., redescribed, p. 115; *L. insignis* T., redescribed, pp. 115–117: TOPSENT (50).
Sceptrintus, definition of genus, p. 117; *S. richardi* T., redescribed, pp. 117–119: TOPSENT (50).

Family SUBERITIDÆ.

- Ficulia* [*Ficulina*?] *ficus* contains eggs of *Sepia*: GRUVEL (15).
Suberites laticeps, **n. sp.**, described, pp. 124, 125; *S. gibbosiceps*, **n. sp.**, described, pp. 125, 126: TOPSENT (50); *S. domuncula*: MAR. BIOL. ASS. (34).—*S. domuncula*, spongosterin obtained from: HENZE (16).—
S. prototypus, *S. domuncula*: SOWINSKY (46) p. 289.
Rhizaxinella biseta, **n. sp.**, described, pp. 126, 127; *R. uniseta*, **n. sp.**, described, pp. 127, 128: TOPSENT (50).

(b) Order HALICHONDRINA.

Family HAPLOSCLERIDÆ.

- Amorphina caspia*, *A. protochalina*, *A. dubia*, *A. grossa*: SOWINSKY (46) pp. 173, 289.
Cacochalina digitata, *C. irregularis*: SOWINSKY (46) p. 289.
†*Ceraochalina reteplax tenuis*, **n. var.**, described, *C. nuda* var. *oxyus* L., redescribed: THUM (49) pp. 15–17.
Chalinidæ, nutrition in: COTTE (6).
Chalina oculata: MAR. BIOL. ASS. (34).
†*Chalinissa elongata* L., redescribed, p. 13; *C. communis tenuis*, **n. var.**, described, p. 14: THUM (49).
†*Chalinopora typica*, var. *tenuispina* L., redescribed: THUM (49) p. 11.
†*Cladochalina euplax* L., redescribed: THUM (49) pp. 11, 12.
†*Eudacroce spathiformis*, **n. sp.**, described: TOPSENT (50) pp. 242, 243.
†*Euachalina exigua*, var. *arborea* L., redescribed: THUM (49) pp. 20, 21.
Gelliodes bifacialis, **n. sp.**, described, pp. 229, 230; *G.*, sp., described, pp. 230, 231: TOPSENT (50).
Gellius angulatus (Bowerbank) R. and D., redescribed, p. 231; *G. fibulatus* (Schmidt) S., redescribed, p. 231; *G. flagellifer* R. and D., redescribed: TOPSENT (50) pp. 231, 232.—*G. perforatus*, **n. sp.**, diagnosed and described, pp. 130, 134: WILSON (60).
Halichondria fibrosa (Fristedt) L., redescribed, p. 247; *H. leuconoides* T., redescribed, pp. 247–249: TOPSENT (50).—*H. panicea*: MAR. BIOL. ASS. (34).—*H. panicea*, bionomics: CUENOT (7).

- Lubomyrskia irregularis*: IAKHONTOFF (23) p. 3.
Metschnikowia spinispiculum (Carter) T., redescribed, p. 243; *M. filholi* T., redescribed, pp. 243, 244: TOPSENT (50).—*M. tuberculata*, *M. intermedia*: SOWINSKY (46) p. 173.
Oceanapia N., remarks on genus, pp. 127, 128; *O. bacillifera*, **n. sp.**, diagnosed and described, pp. 128–130: WILSON (60).—*O. robusta* (Bowerbank) N., redescribed: TOPSENT (50) pp. 228, 229.
Pachychalina acapulcensis, **n. sp.**, diagnosed and described: WILSON (60) pp. 124–127.
Pellina semitubulosa, *P. longispicula*, *P. foraminosa*: SOWINSKY (46) p. 289.
Petrosia crassa (Carter) L., redescribed: TOPSENT (50) pp. 240, 241.—*P. variabilis crassa*, **n. subsp.**, diagnosed and described, pp. 118–121; *similis densissima*, **n. subsp.**, diagnosed and described, pp. 121–124: WILSON (60).
Phlæodictyon fistulosum B., redescribed, pp. 235, 236; *P. coriaceum*, **n. sp.**, described, p. 237; *P. elongatum* (Topseut) L., redescribed, p. 238; *P. reticulatum*, **n. sp.**, described, pp. 238, 239; *P. æreum*, **n. sp.**, described, pp. 239, 240: TOPSENT (50).
†*Phylosiphonia pumila* L., redescribed: THUM (49) pp. 17, 18.
Protoschmidtia grimmii, *P. simplex*, *P. transitans*, *P. foraminosa*: SOWINSKY (46) pp. 173, 328.
Renieridae, nutrition in: COTTE (6).
Reniera implexa Sch., redescribed, p. 244; *R. foraminosa*, **n. sp.**, described, p. 245; *R. spongiosa*, **n. sp.**, described, p. 245; *R. utriculus*, **n. sp.**, described, p. 246; *R.*, sp., described, p. 246: TOPSENT (50).—*R. simulans*, nutrition in: COTTE (6).—*R. flava*, *R. alba*, *R. aqueductus*, *R. informis*, *R. inflata*, *R. palmata*, *R. nigricans*: SOWINSKY (46) pp. 173, 289.
Rhaphisia spissa T., redescribed: TOPSENT (50) pp. 233–235.
Schmidtia intermedia: SOWINSKY (46) p. 289.
†*Spinosella sororia*, var. *dilatata* D., redescribed, pp. 18, 19; *S. sororia*, var. *elongata* D., redescribed, pp. 19, 20: THUM (49).
Spongillides from Roumania: CHIRICA (2).
Spongilla lacustris, external characters described: GILLOT (13).—*S. fluvialis*, spermatogenesis in: GORICH (14).—*S. microgemmata*: IAKHONTOFF (23) p. 3.—*S. lacustris*: RANGE (39) p. 238.
Veluspa baicalensis, *V. fusifera*: IAKHONTOFF (23) p. 3.

Family AXINELLIDÆ.

Description of family: TOPSENT (50) p. 137.

- †*Acanthoraphis intertextus*: JUKES-BROWNE & HILL (26) p. 505.
Axinella vasonuda, **n. sp.**, described, pp. 140, 141; *A. vellerea*, **n. sp.**, described, 141, 142; *A. flustra* T., redescribed, pp. 139, 140: TOPSENT (50).—*A. rugosa*: SCHEPOTIEFF (42), p. 3.
Auletta sycinularia Sch., redescribed, pp. 143, 144; *A. sessilis*, **n. sp.**, described, p. 144, 145: TOPSENT (50).—*A. dendrophora*, **n. sp.**, diagnosed and described: WILSON (60) pp. 158–161.
Halicnemis constellata T., redescribed, *azorica* var. **n.**: TOPSENT (50) p. 149.
Higginsia thielei T., redescribed: TOPSENT (50) p. 150, 151.
Hymeniacidon sanguineum, bionomics: CUENOT (7).—*H. sanguineum*, MAR. BIOL. ASS. (34).
Phakellia robusta B., redescribed, p. 143; *P. lamelligera*, **n. sp.**, diagnosed and described, pp. 155–158: WILSON (50).—*P. ventilabrum*: SCHEPOTIEFF (42) p. 3.

Sollasella hystrix T., redescribed : TOPSENT (50) pp. 142, 143.

Syringella humilis T., described, p. 138 ; *S. falcifera* T., redescribed, pp. 138, 139 : TOPSENT (50).

Tragosia infundibuliformis T. *polypoides* : MAR. BIOL. ASS. (34).

Family PÆCILOSCLERIDÆ.

Acarnus tortilis T., redescribed : TOPSENT (50) p. 171.

Artemisia erecta, **n. sp.**, described : TOPSENT (50) pp. 214, 215.

Biemma rosea (Fristedt) L., redescribed, pp. 226, 227 ; *B. grimaldii* T., redescribed, pp. 227, 228 : TOPSENT (50).

Bubaris vermiculata (Bowerbank) G., redescribed, pp. 145, 146 ; *B. mastophora* (Schmidt) T., redescribed, p. 146 ; *B. sosia*, **n. sp.**, described, p. 147 : TOPSENT (50).

Cerbaris T., definition of genus, p. 160 ; *C. torquata* T., redescribed, pp. 160, 161 : TOPSENT (50).

Chondrocladia gutteli, **n. sp.**, described : TOPSENT (50) pp. 207–209.

Dendoryx dentata, **n. sp.**, described : TOPSENT (50) pp. 172, 173.

Desmacella inornata B., redescribed : TOPSENT (50) pp. 225, 226.

Desmacidon peltatus, **n. sp.**, described, p. 204 ; *D. abyssi*, **n. sp.**, described, pp. 204, 205 : TOPSENT (50).

Drigmatyle, **n. g.**, defined, p. 195 ; *D. lictor*, **n. sp.**, described, p. 195 : TOPSENT (50).

Esperia stepanowi, *E. irregularis*, *E. muscoides*, *E. contarenii*, *E. foraminosa*, *E. dubia* : SOWINSKY (46) p. 289.

Esperella fascijbula, **n. sp.**, described, p. 201 ; *E. tunicata* (Schmidt) V., redescribed, pp. 200, 201 : TOPSENT (50).—*E. ægagropila*, bionomics : CUENOT (7).

Esperiopsis villosa C., redescribed, pp. 211, 212 ; *E. decora*, **n. sp.**, described, p. 212 ; *E. prædita* T., redescribed, p. 212 ; *E. glomeris*, **n. sp.**, described, pp. 213, 214 : TOPSENT (50).

Forcepia C., definition of genus, p. 177 ; *F. bulbosa* (Carter) V., redescribed, pp. 179, 180 ; *F. imperfecta*, **n. sp.**, described, p. 180 : TOPSENT (50).

Guitarra voluta, **n. sp.**, described : TOPSENT (50) pp. 209–211.

Hamacantha johnsoni (Bowerbank) G., redescribed, pp. 215–217 ; *H. schmidtii* (Carter) L., redescribed, pp. 217, 218 ; *H. carteri*, **n. sp.**, described, pp. 218–220 ; *H. lundbecki*, **n. sp.**, described, pp. 220, 221 ; *H. implicans* L., **n. var. azorica**, redescribed, pp. 221, 222 ; *H. integra*, **n. sp.**, described, pp. 222, 223 ; *H. clavisæpta* T., redescribed, pp. 223, 224 : TOPSENT (50).

Heteroclathria hallezi, **n. g.**, described : TOPSENT (50).

Hymenraphia B., definition of genus, p. 161 ; *H. clavata* B., redescribed, p. 161 ; *H. viridis* T., redescribed, p. 162 ; *H. spinispinosa*, **n. sp.**, described, p. 162 ; *H. affinis* T., redescribed, p. 163 ; *H. pilosella*, **n. sp.**, described, pp. 163, 164 ; *H. hispidula*, **n. sp.**, described, pp. 164, 165 ; *H. mucronata*, **n. sp.**, described, pp. 165, 166 ; *H. peachi* (Bowerbank) T., redescribed, p. 166 ; *H. mutabilis*, **n. sp.**, described, pp. 167, 168 : TOPSENT (50).

Hymenhabdia T., definition of genus, p. 159 ; *H. oxytrunca*, **n. sp.**, described, pp. 159, 160 : TOPSENT (50).

Hymetrochota, **n. g.**, definition of genus, p. 168 ; *H. rotula*, **n. sp.**, described, p. 168 : TOPSENT (50).

Iophon lamella, **n. sp.**, diagnosed and described, pp. 146–149 ; *I. lamella indivisus*, **n. subsp.**, diagnosed and described, pp. 149–151 ; *I. indentatus*, **n. sp.**, diagnosed and described, pp. 151–154 ; *I. chelifera osti magna*, **n. subsp.**, diagnosis and description, pp. 143–146 : WILSON (60).

- Joyeuxia* T., diagnosis of genus, p. 205; *J. viridis* T., redescribed, p. 206; *J. tubulosa*, **n. sp.**, described, pp. 206, 207: TOPSENT (50).
- Leptolabis*, **n. g.**, definition of genus, pp. 181, 182; *L. forcipula*, **n. sp.**, described, p. 182; *L. forcipula*, **n. var. brunnea**, described, p. 183; *L. arcuata*, **n. sp.**, described, pp. 183, 184; *L. luciensis* T., redescribed, pp. 184, 185: TOPSENT (50).—*L. luciensis*: MAR. BIOL. ASS. (34).
- Leptosia* T., definition of genus, p. 185; *L. occulta* (Bowerbank) T., redescribed, pp. 186, 187; *L. pecqueryi* T., redescribed, pp. 187, 188; *L. kœhleri* T., redescribed, p. 189; *L. schmidtii* T., redescribed, pp. 190, 191; *L. baculifera* T., redescribed, p. 191; *L. biscutella*, **n. sp.**, described, pp. 191, 192; *L. umbellifera*, **n. sp.**, described, p. 192; *L. raphigena*, **n. sp.**, described, pp. 192, 193; *L. obtusata*, **n. sp.**, described, p. 193; *L. acerata*, **n. sp.**, described, pp. 193, 194: TOPSENT (50).
- Leptostastræ*, **n. g.**, definition of genus, p. 194; *L. constellata*, **n. sp.**, described, pp. 194, 195: TOPSENT (50).
- Lissodendoryx simplex*, **n. sp.**, described, p. 173; *L. fertilior*, **n. sp.**, described, pp. 173, 174: TOPSENT (50).
- Melonanchora elliptica* C., redescribed: TOPSENT (50) p. 177.
- Microciona atrasanguineum*, bionomics: CUENOT (7).
- Myxilla paupertas* (Bowerbank) V., redescribed with list of synonyms, pp. 168, 169; *M. mariana* R. & D., **n. var. polysigma**, described, pp. 169, 170: TOPSENT (50).
- Phlyctænopora*, **n. g.**, definition of genus, pp. 198, 199; *P. bitorquis*, **n. sp.**, described, pp. 199, 200: TOPSENT (50).
- Plocamia ambigua* (Bowerbank) T., list of synonyms and descriptions, pp. 154, 155; *P. coriacea* (Bowerbank), var. *elegans* R. & D., redescribed, p. 155: TOPSENT (50).
- Plocamiopsis*, **n. g.**, definition of genus, p. 155; *P. signata*, **n. sp.**, described, pp. 155–157: TOPSENT (50).
- Protoesperia simplex*, *P. lobimana*: SOWINSKY (46) p. 328.
- Rhabderemia* T., description of genus and species, pp. 151, 152; *R. minutula* (Carter) T., redescribed, pp. 152, 153: TOPSENT (50).
- Rhabdoploca*, **n. g.**, definition of genus, pp. 157, 158; *R. curvispiculifera* (Carter), redescribed, pp. 158, 159: TOPSENT (50).
- Rhaphidotheca* S. K., definition of genus, p. 202; *R. loricata* T., redescribed, pp. 202, 203: TOPSENT (50).
- Stelodoryx*, **n. g.**, definition of genus, p. 174; *S. procera*, **n. sp.**, described, pp. 174–176: TOPSENT (50).
- Stylostichon repens*, **n. sp.**, described: TOPSENT (50) p. 170.
- Stylotella jullieni* T., redescribed: TOPSENT (50) p. 225.
- Suberotelites demonstrans* T., redescribed: TOPSENT (50) p. 157.
- Tedania suctoria* Sch., redescribed, p. 176; *T. commixta* R. & D., redescribed, pp. 176, 177: TOPSENT (50).
- Trachyforcepia*, **n. g.**, definition of genus, p. 181; *T. grænlandica* (F.), redescribed, p. 181: TOPSENT (50).
- Tylodesma* T., remarks on genus, pp. 135, 136; *T. alba*, **n. sp.**, diagnosed and described, pp. 136–138; *T. vestibularis*, **n. sp.**, diagnosed and described, pp. 139–142: WILSON (50).
- Yvesia pertusa* T., redescribed, p. 196; *Y. alecto* T., redescribed, pp. 196–198; *Y. carnosa*, **n. sp.**, described, p. 198: TOPSENT (50).

(iii) KERATOSA.

(a) DICTYOCERATINA.

Family SPONGIDÆ.

- Aplysinopsis massa*, **n. sp.**, described; *A. tuberosa*, **n. sp.**, described: SZYMAŃSKI (47).

Cacospongia, remarks re genus : SZYMAŃSKI (48).

Hircinia variabilis, **n. var. fistulata**, remarks on : SZYMAŃSKI (47, 48) ;

H. vestibulata, **n. sp.**, described : SZYMAŃSKI (48).

+*Phyllospongia lumbricaria*, *P. acuminata*, *P. elongata*, *P. subarticulata*,
P. latifrons, *P. varius* : WALTHER (57).

+*Spongites saxonicus* : JAHN (25).

Family SPONGELIDÆ.

Spongelia ramosa, nutrition in : COTTE (6).—*S. elegans*, *S. incrustans*, *S. palescens* : SOWINSKY (46) p. 289.

Spongillides from Roumania : CHIRICA (2).

(b) DENDROCERATINA.

Family DARWINELLIDÆ.

Darwinella simplex T., redescribed : TOPSENT (50) pp. 55, 56.

Family APLYSILLIDÆ.

+*Dendrospongia* vide *Craticularia* : JUKES-BROWNE & HILL (26) p. 506.

(iv) MYXOSPONGIDA.

Family HALISARCIDÆ.

Halisarca dujardini, *H. lobularis* : SOWINSKY (46) p. 289.—*H. dujardini* :
MAR. BIOL. ASS. (34).

E. OCTACTINELLIDA.

Vacant.

F. HETERACTINELLIDA.

Vacant.

G. INCERTÆ SEDIS.

+*Brachiolites*, vide *Craticularia* : JUKES-BROWNE & HILL (26) p. 505.

+*Cupulochonia cupuliformis*, *C. sp.*, *C. sabaudiana* : BAUMBERGER (1)
p. 21.

+*Hippalimeudon* sp. : BAUMBERGER (1) p. 21.

+*Monotheles stellata* : BAUMBERGER (1) p. 21.

Pellinula (?) *cribosa*, *P. schmidtii* : SOWINSKY (46) p. 328.

+*Scyphia rœmeri*, *S. caminensis*, *S. sp.* : ECK (10).—*S. pedunculata* : JAHN
(25).—*S. pedunculata* : JUKES-BROWNE & HILL (26) p. 508. (*Scyphia*
is a Dictyonine.)

+*Strephochetus*, **n. g.**, described : SEELY (45).

+*Satratrus brainerdi*, *S. ocellatus*, *S. prunus*, **n. spp.**, described : SEELY
(45).

+*Talpina dendrina*, *T. ramosa*, *T. solitaria* : JUKES-BROWNE & HILL (26)
p. 508.

Tedaniella cylindrigera : SOWINSKY (46) p. 328.

XVIII. PROTOZOA.

BY

H. M. WOODCOCK, D.Sc. (Lond.).

CONTENTS.

| | Page |
|---|------|
| INTRODUCTION | 3 |
| I. TITLES. | 6 |
| II. BIOLOGY | |
| A. Morphology | 28 |
| 1. General anatomy | 28 |
| 2. Minute structure of cell-organs, special points | 29 |
| B. Physiology | 30 |
| 1. Nutrition, excretion, etc. | 30 |
| 2. Locomotion | 30 |
| 3. Response to stimuli | 31 |
| C. Bionomics | 31 |
| 1. Plankton | 31 |
| 2. Parasitism: effects on host; relation to disease | 32 |
| D. Reproduction | 34 |
| 1. Asexual | 35 |
| 2. Sexual | 35 |
| 3. Nuclear division; directive-centres, etc. | 35 |
| E. Development; life-cycle | 36 |
| F. Group relationships; classificatory changes | 37 |
| G. Miscellaneous | 37 |
| 1. Cultivation and infection | 37 |
| 2. Technique | 38 |
| 3. Bibliography, etc. | 38 |
| III. DISTRIBUTION. | |
| A. Geographical | 38 |
| B. Geological | 39 |
| C. Parasitic (including commensalism) | 40 |

| | Page |
|---|------|
| IV. SYSTEMATIC. | |
| A. Protozoa in general | 42 |
| B. Gymnomyxa | 42 |
| 1. Mycetozoa | 42 |
| (a) Protomyxidea | 42 |
| (b) Mycetozoida | 42 |
| 2. Rhizopoda | 42 |
| (a) Lobosa | 42 |
| (b) Foraminifera | 43 |
| 3. Heliozoa | 50 |
| (a) Aphrothoraca | 50 |
| (b) Chlamydophora | 50 |
| (c) Chalarothoraca | 50 |
| (d) Desmothoraca | 50 |
| 4. Radiolaria | 50 |
| (a) Peripylaria | 50 |
| (b) Acantharia | 51 |
| (c) Monopylaria | 52 |
| (d) Tripylaria | 53 |
| c. Sporozoa | 54 |
| 1. Telosporidia | 54 |
| (a) Gregarinidea | 54 |
| (b) Coccidiidea | 55 |
| (c) Hæmosporidia | 55 |
| 2. Neosporidia | 56 |
| (a) Myxosporidia | 56 |
| (b) Actinomyxidia | 56 |
| (c) Sarcosporidia | 56 |
| Sporozoa incertæ sedis | 56 |
| D. Mastigophora | 57 |
| 1. Flagellata (Euflagellata) | 57 |
| (a) Lissoflagellata | 57 |
| (b) Choanoflagellata (vacant) | 57 |
| 2. Silicoflagellata (vacant) | 58 |
| 3. Dinoflagellata | 58 |
| (a) Adinida (vacant) | 58 |
| (b) Dinifera | 58 |
| 4. Rhynchoflagellata | 59 |
| E. Ciliophora | 59 |
| 1. Ciliata | 59 |
| (a) Holotricha | 59 |
| (b) Heterotricha | 60 |
| (c) Hypotricha | 60 |
| (d) Peritricha | 60 |
| 2. Suctoria | 60 |

INTRODUCTION.

THE number of Titles in the *Protozoa* Record for 1904 shows some falling off compared with that for the previous year, being 371 instead of 433. The Recorder attributes this diminution partly to the fact that the references were collected (by the Searcher) much earlier in the year than has hitherto been the case. It is notorious that many periodicals are not received by our Libraries until several months after publication; hence it is quite likely that there will be a certain influx into next year's Record of 1904 papers received too late for insertion in the present one. Nevertheless, allowance being made for the above circumstance, there seems little doubt that fewer, rather than more, Protozoan memoirs appeared in 1904. From many journals in which there were several papers in 1903 few or none have to be recorded this year. To give one example only: instead of over a dozen from the *Forschber. Plon*, two or three at most have been culled.

If, however, the present Record exhibits some loss in respect of the quantity of material, this is certainly not true of the quality. As regards the Flagellates, at any rate, the year 1904 must undoubtedly rank as one of the most important in the history of the group up till now. And not of this class alone has one's entire conception to be fundamentally modified as the result of last year's research! Rarely, if ever, the Recorder imagines, has the Protozoa division of the Zoological Record contained a memoir of such far-reaching—indeed, almost inestimable—significance as is herein included. By general consensus of opinion the stupendous revelation of SCHAUDINN (301) “inaugurates a new era in the history of the Sporozoa and Flagellates.”

For the benefit of any who are not already cognizant of this epoch-marking investigation, the main facts elucidated may be here stated. The author describes the complete life-cycle of two distinct organisms, one a Trypanosome, the other possessing the typical characters of a *Spirochæta*, both parasitic in the blood of the Little Owl. The latter parasite, far from being a Bacterium, is, in all essentials, a Trypanosome, and Schaudinn finds that the same is true for other so-called *Spirochæta*. Both these Flagellates have an alternation of hosts and of generations, the “carrier,” a gnat, being a true definitive host in which—and only in which—sexual conjugation takes place. Moreover, for part of the time spent in the blood of the bird, the Flagellate is intracellular, acquires a gregariniform condition, and becomes, in the case of the Trypanosome, what has hitherto been known as a species of *Halteridium*, and, in the case of the “*Spirochæta*,” what has previously been described as a “*Hæmameba*” or “*Leucocytozoon*.” In other words, two characteristic Hæmosporidian parasites are, respectively, only a transient phase in the life-history of a particular Hæmoflagellate!

So revolutionizing are these discoveries that, in view of the difficulty of the subject and the impossibility of following one and the same individual through its various phases, one might almost feel inclined to doubt the correctness of Schaudinn's interpretation of his observations; were it not for the fact that this author has already contributed such valuable additions to our knowledge of the complicated life-history of parasitic Protozoa. It is, therefore, casting no reflection on one who may be fittingly termed a “prince of protistologists,” to say that the corroborative evidence—in more than one direction—which is already forthcoming, is highly welcome (vide, for instance, MESNIL [234], BILLET [20], LÉGER [184 & 185], BRUMPT [48], and ROGERS [286]). In short, the whole tendency of research at present points to a very close connection between the Hæmosporidia and parasitic Flagellates.

Scarcely less important is the work of PROWAZEK (277 & 278) and of LÉGER. The former minutely describes the complicated life-history of several other parasitic Flagellates, and his memoirs are of great value to students of the group. Thanks to these contributions and that of Schaudinn, the pronounced scepticism of Klebs, Senn, and others with regard to the occurrence of a sexual process in this class, which has hitherto considerably hampered real progress, is now completely refuted, and the views of Kent and of Dallinger and Drysdale are at length vindicated.

To LÉGER are due practically all the data we possess to aid us in arriving at a correct idea of the phylogeny of the *Hæmoflagellates*. From his most fortunate redescription (180 & 181) of *Trypanoplasma borreli*, on the one hand, and from the instructive series of *Herpetomonadine* forms which he reveals (186 & 187) on the other hand, it seems abundantly clear that a heterophyletic origin must be assigned to the parasites included in the designation of "Trypanosomes."

There yet remain one or two researches on parasitic Flagellates which ought not to be passed over without mention. The Recorder refers to the interesting and particularly well-illustrated accounts by FOA (110) and GRASSI & FOA (126) of the process of division in members of the curious group of the *Trichonymphida*.

Although memoirs dealing with the Flagellates occupy by far the most important place in the section for Morphology and Development, there are, nevertheless, certain others to which allusion must be made. PENARD (260) has had an opportunity of examining *Chlamydomyxa*, and helps to clear up several disputed points, e.g., the nature of the "travelling corpuscles." Other *Gymnomyxan* papers are those by CALKINS (57), who produces evidence in favour of a sexual cycle in *Amæba proteus* and strongly inclines to the belief that the sexual phases are represented by "*Pelomyxa*"-forms, and ZÜLZER (369), who contributes a full account of *Diffugia urceolata*. In (113) FOWLER supplements his work on the Tripylarian *Planktonetta* with a note on the anatomy of *Gazelletta*.

Turning to the Sporozoa, a useful comparative description of the growth and development of Gregarines up to the adult trophozoite-phase is furnished by LÜHE (209); and LÉGER & DUBOSCQ (192) bring forward additional original observations dealing with this subject. A most interesting description of the formation of gametes and conjugation in *Stylorhynchus* is given by LÉGER (188). An important Myxosporidian paper is that of STEMPPELL (336) on the development of the cyst and spores in *Glugea anomala*. WOODCOCK (361) has studied "diffuse infiltration" in *G. stephani*, and offers an explanation of this condition, as there seen. Welcome additions to our knowledge of the Actinomyxidæ are contributed by CAULLERY & MESNIL (64 & 65) and LÉGER (182 & 183). Finally, the occurrence of a remarkable parasite is noted by WOODCOCK (362), who has, unfortunately, been unable so far to learn much concerning its life-history and affinities.

Apart from the conscientious description of conjugation in *Paramæcium* by HAMBURGER (134), research on the Ciliates has been chiefly with respect to their minute structure. LÉGER—to whom Protozoology, this year, owes much indeed!—and DUBOSCQ (193–195), after a consideration of certain parasitic *Opalinidæ*, come to the conclusion that the *Astomata* do not represent a natural group. The numerous papers of FAURÉ have proved a veritable thorn in the flesh to the Recorder. No less than five (95, 98–101), are taken up in describing the contractile fixative apparatus of the Vorticellids, and the labour required to piece them together and obtain a definite idea of the whole is by no means slight. It is the more pity that the author did not combine these scrappy fragments into a finished memoir, since the conclusion to which he comes with regard to

the origin of the *Discotricha* distinctly merits attention. MITROPHANOW (239, 241), minutely describes the formation and structure of the trichocysts of *Paramœcium*, and thinks that they subserve an excretory purpose.

Protozoan Physiology has certainly been enriched by CALKIN's studies on *Paramœcium*. At the close of a remarkably painstaking series of researches this writer comes to the conclusion (56) that, in the long run, conjugation is essential for the continuance of the race. From JENNING's work (152) it would appear that, between living protoplasm and the most artful of physical imitations, there lies a gulf, to bridge which will require much more than, for instance, Mr Burke's "radiobes."

To mention *Actinosphaerium* is to think of R. HERTWIG, and his investigations on the relation between cell-metabolism and functional degeneration, which have been largely worked out on this form, are fully recounted in (138). Too much importance cannot be attached, in the Recorder's opinion, to this author's highly suggestive ideas concerning the real nature of malignant tumours, in which the cells lose their "organotypic" growth and activity, and retain only that of a "cytotypic" character.

The rôle played by Protozoa in medical parasitology still gains in importance. The etiology of various Oriental maladies, such as Kala-Azar, tropical splenomegaly, Delhi sore, and bouton d'Orient, is now explained by the discovery of parasites closely allied to *Piroplasma* (vide CHRISTOPHERS (73-75), DONOVAN (83), LAVERAN & MESNIL (173), LEISHMAN (196), MESNIL, NICOLLE & REMLINGER (235), WRIGHT (367), and others). Moreover, it appears not unlikely that the once dreadful scourge of small-pox is also to be ascribed to the ravages of a minute Sporozoan parasite. CALKINS (58) gives a detailed account of the bodies known as "*Cytoryctes variolæ*," considers them as phases of a distinct organism allied to *Lymphosporidium*, and constructs a complex life-history for the parasite. This much, at any rate, may be said. In view of the fact that Calkins is a most competent protozoologist, far more weight must be attached to his research than is necessary in many cases where the Protozoan nature of cell-inclusions is confidently asserted!

For various works on Geographical Distribution the reader is referred to the papers by CASH, GILSON, GOUGH, HÄCKER, HUTTON, JENSEN, MILLETT, MONTI, NOBRE, PENARD, SIDEBOTTOM & WORTH, and on Geological Distribution to those by BAGG, BRÜCKMANN, CHAPMAN, FORNASINI, HOLLAND, JUKES-BROWNE, LEARDI, MARTELLI, MARTIN, PREVER, READE, SCHLUMBERGER, SCHUBERT, SILVESTRI and others.

The rich Gymnomyxan fauna of the Lake of Geneva has supplied PENARD with material for his paper (259) on some new Rhizopods, and also for his monographic work (262) on fresh-water Heliozoa. That there is no lack of interesting forms nearer home is shown by CASH (60). Coming to the Foraminifera, an important memoir on *Lepidocyclus* is contributed by LEMOINE & DOUVILLÉ (201). The *Orbitoideæ* have been well looked after by PREVER (272 & 274), PREVER & RZEHA (276) and SCHLUMBERGER (305), attention having been paid chiefly to the genus *Orthophragmina*. PREVER also continues (in 275) his study on the forms included in the term "*Nummulites*." MILLETT (236 & 237) at length concludes his description of Recent Malayan Foraminifera. There are several other Systematic papers on this order which should not be neglected, e.g., those of BRÜCKMANN (46), CHAPMAN (69-71), CHECCHIA-RISPOLI (72), and SCHLUMBERGER & CHOFFAT (306).

As a result of the German plankton and deep-sea expeditions, rather more Radiolarian memoirs than of late have to be chronicled. BORGER (28), HÄCKER (132), and IMMERMANN (148) deal with the Tripylaria, the last-named contributing a useful account of the *Aulacanthidæ*. POPOFSKY (270) has produced a bulky work on the *Acanthometrea*. It may be very

important, but the Recorder confesses that the chief point about it which struck him is the manifest desire of the author to tack on his name (in the abbreviated form of "Pop.") to every nomenclaturic change or addition suggested. Nowhere in his description is n. g., n. sp., or the like to be found. Fortunately for the Recorder the Acantharia do not seem to have been previously honoured by Popofsky's attention, so he has felt justified in replacing "Pop." by the correct designation, so far as he was able to ascertain it from the context.

Many new Hæmogregarines have been observed, chiefly by BILLET (21-24), CASTELLANI & WILLEY (63), NICOLLE (247-249), SERGENT (314), and SOULIÉ (327); also, usually associated with new Trypanosomes, by BRUMPT & LEBAILLY (50) and LEBAILLY (179). Lastly, a full account of Trypanosomes known up to the time of writing is given by LAVERAN & MESNIL (176). This work, compiled as it is very largely from original papers by the authors, affords a good idea of the amount of research bestowed by them upon these all-important parasites.

Besides the works on Ciliates above referred to, mention may be made of FAURÉ'S paper (105) on new *Opercularia*. The systematic list of the Infusoria is, however, much shorter than last year, while the sole entry under Tentaculifera is that of *Astrophrya*, a new genus described by AVERINTZEV (6).

I. TITLES*.

1. [ANON.] Section "Protozoa" in Intern. Cat. Scient. Lit. 1904 (ii), pp. 415-433. [See II. G. 3.]
2. —. The Sporozoa in relation to disease in man and animals. *Lancet* 1904, i, pp. 736, 889, 950, 1009, 1296, 1371, 1443.
Abstracts of series of Lectures delivered by Prof. Minchin at University College, London.
3. —. Protozoaires. In *Suppl. to Natural. Canad.* xxxi (n. s. 11), pp. 220-222.
Short popular account.
4. —. Ueber Trypanosomen. *Zeitschr. ang. Mikr.* x, pp. 85-95, 114-120. [See II. G. 1.]
General review of present knowledge.
5. ARKHANDHELSKIĬ, A. D. Paleotzenoviya otlozhenia, saratovskagho povolzh'ya, i ikh'fauna. *Mater. Gheol. Rossii* xxii, i, 207 pp., 11 pls. (Resumé in French, pp. 201-203.)
6. AVERINTZEV, S. *Astrophrya arenaria*, nov. gen., nov. spec. *Zool. Anz.* xxvii, pp. 425 & 426, 1 text-fig.
Abstract in *J. R. Micr. Soc.* 1904, p. 313.
7. —. Ueber die Theilung bei *Amæba proteus* Pall. sp. (Vorläufige Mittheilung). *T. c.* pp. 399 & 400.
Abstract in *Bull. Inst. Pasteur* ii, p. 379.
8. —. Protistodoghichieskiya zamyetki. *Trudui St. Peterb. Obshch.* xxxiii, iv, pp. 21-41. [In Russian.]
Concerns Foraminifera; evidently treats of the structure of their shells.

* An asterisk prefixed to a quotation indicates that the recorder has not seen the Journal or Work referred to.

9. BAGG, R. M. Foraminifera. Maryland geol. Survey (Miocene). Baltimore, 1904, pp. 460-483, pls. 131-133.
10. BARRATT, J. O. W. Die Reaktion des Protoplasmas in ihrem Verhältniss zur Chemotaxis. Zeitschr. allg. Physiol. iv, pp. 87-104, 1 pl.
11. ——. Die Wirkung von Säuren und Basen auf lebende Paramäcien. T. c. pp. 438-484, 12 tables.
12. *BARROIS, C. Sur les Foraminifères des phtanites carbonifères du Boulonnais. Ann. Soc. geol. Nord xxxi (1902), pp. 40-42.
13. BASTIAN, C. H. On the Origin of Flagellate Monads and of Fungus-germs from minute masses of Zoogloea. Nature lxxi, pp. 77-81, 12 text-figg.
14. ——. Studies in Heterogenesis. London (Williams & Norgate), 1903, pp. (iv+354+xxxvii), 19 pls. [Among other things, on the transformation of certain Rotifers into Infusoria!]
Review in Nature lxix, p. 385.
15. DE BEAUCHAMP, P. Sur la fixation à l'état d'extension des animalcules contractiles et spécialement des Vorticelles. Bull. Soc. zool. France xxix, pp. 26 & 27. [See II. G. 2.]
16. BENTLEY, C. A. Notes upon Kala-Azar and the new parasite. Brit. Med. J. 1904, ii, pp. 653-655.
17. *———. A short note on the parasite of Kala-Azar. Indian Med. Gaz. xxxix, pp. 81 & 82, 1 fig.
18. BERESTNEFF, N. Ueber das "*Leucocytozoon*" *danilewskyi*. Arch. Protistenk. iii, pp. 376-386, pl. 15.
Abstract in Bull. Inst. Pasteur ii, p. 599.
19. *BEZANÇON, F. & LABBÉ, M. Traité d'hématologie. Paris (Steinheil), 1904, 8vo, pp. (xviii+965), 9 pls., 125 text-figg.
20. BILLET, A. Culture d'un Trypanosome de la grenouille chez une Hirudinée; relation ontogénique possible de ce Trypanosome avec une Hémogregarine. C.R. Ac. Sci. cxxxix, pp. 574-576.
Abstract in Bull. Inst. Pasteur ii, p. 989.
21. ——. À propos de l'Hémogregarine du crapaud de l'Afrique du Nord. C.R. Soc. Biol. lvi, pp. 482-484, 8 text-figg.
22. ——. Sur une Hémogregarine karyolysante de la couleuvre vipérine. T. c. pp. 484 & 485, 6 text-figg.
23. ——. À propos de l'Hémogregarine de l'émyde lépreuse (*Emys leprosa* Schw.) de l'Afrique du Nord. T.c. pp. 601-603, 8 text-figg.
24. ——. Sur l'Hémogregarine du lézard ocellé d'Algérie. T. c. pp. 741-743, 10 text-figg.
25. ——. Sur les corpuscules paranucléaires des hématies de la tarente d'Algérie. Op. cit. lvii, pp. 160 & 161. [See II. c. 2.]
26. ——. Sur le *Trypanosoma inopinatum* de la grenouille verte d'Algérie et sa relation possible avec les *Drepanidium*. T. c. pp. 161-164, 16 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 724.
27. BLANCHARD, R. Sur un travail de M. le Dr Brumpt intitulé "Quelques faits relatifs à la transmission de la maladie du sommeil par les mouches tsétsé." Arch. parasit. viii, pp. 572-589.

28. BORGERT, A. Mittheilungen über die Tripyleen-Ausbeute der Plankton-Expedition. II. Die Tripyleenarten aus den Schliessnetzfangen. Zool. Jahrb. Syst. xix, pp. 733-760, 18 text-figg.
29. BOSC, F. J. Note préliminaire à l'étude des parasites du cancer. C.R. Soc. Biol. lvi, pp. 337-339.
30. —. Recherches sur le parasitisme du cancer. I. Formes parasitaires non enkystées. T. c. pp. 470-472, 26 text-figg.
31. —. [Same title.] II. Modes de division nucléaire des parasites. T. c. pp. 472 & 473. [See preceding for figg.]
32. —. Les maladies bryocytiques (maladies à Protozoaires). I. Mémoire. Introduction générale à l'étude des maladies bryocytiques. Centrbl. Bakter. (1) xxxvi, Orig. pp. 487-493.
33. —. [Same title.] II. Mémoire. La maladie vaccinale et son parasite (*Plasmodium vaccine*). T. c. pp. 630-645, and op. cit. xxxvii, pp. 35-48, 5 pls., pp. 195-213, 2 pls. [See II. c. 2.]
34. —. Recherches sur la structure et l'appareil nucléaire des Trypanosomes (à propos d'un Trypanosome observé chez le lapin). Arch. Protistenk. v, pp. 40-77, 3 (68) text-figg.
35. BOUGON, —. Famille des Cryptomonadinées (suite). Microgr. prep. xii, pp. 27-31, 86-89, 114-117.
General account.
36. —. Les Infusoires ciliés (suite). T. c. pp. 61-67, 162-167.
General account.
37. —. Les Infusoires tentaculifères. T. c. pp. 226-229, 261-270, pls. 15, 29.
General account.
38. BOWHILL, T. & LE DOUX, C. A. A contribution to the study of *Piroplasmosis canis*—malignant jaundice of the dog (Hutcheon). J. Hygiene iv, pp. 217 & 218, pl. 11.
BOYCE, R. [See ROSS & BOYCE (290) & STEPHENS & BOYCE (339).]
39. BRANDES, G. Die elastische Faser des Vorticellenstiels. Zeitschr. Naturw. lxxvi, pp. 368 & 369.
40. BRASIL, L. Sur une Coccidie nouvelle, parasite d'un Cirratulien. C.R. Ac. Sci. cxxxix, pp. 645 & 646.
41. —. Contribution à la connaissance de l'appareil digestif des Annélides polychètes. L'épithélium intestinal de la Pectinaire. Arch. Zool. exp. (4) ii, pp. 91-255, pls. 4-8, 24 text-figg. (Sporozoa, pp. 213-235, pl. 8.)
Abstract in Bull. Inst. Pasteur ii, p. 573.
42. BREHM, V. & ZEDERBAUER, E. Beiträge zur Planktonuntersuchung alpiner Seen. Theil. II. Verh. Ges. Wien liv, pp. 635-643, 5 text-figg.
43. BRODEN, A. Ueber einige Fälle von Infektion mit Trypanosomen am Congo, an Menschen und Thieren beobachtet. Zeitschr. ang. Mikr. x, pp. 35-37.
44. —. Trypanosomiasis et maladies du sommeil. Bull. Soc. Etudes Colon. xi, pp. 701-713, 2 pls. and 1 text-fig.
45. BROWNE, E. T. On the Marine Fauna of the Isles of Scilly. Part I. The pelagic Fauna. J. Inst. Cornwall xvi, i, pp. 120-127.
[See II. c. 1.]

46. BRÜCKMANN, R. Die Foraminiferen des litanisch-kurischen Jura. Schr. Ges. Königsb. xlv, pp. 1-36, pls. 1-4.
47. BRUMPT, E. La maladie désignée sous le nom d'Aïno par les Somalis de l'Ogaden est une trypanosomose probablement identique au Nagana de l'Afrique orientale. C.R. Soc. Biol. lvi, pp. 673-675.
Abstract in Centrbl. Bakter. (1) xxxv, Ref. p. 406.
48. —. Contribution à l'étude de l'évolution des Hémogregarines et des Trypanosomes. Op. cit. lvii, pp. 165-167.
Abstract in Bull. Inst. Pasteur ii, p. 724.
49. —. À propos de la *Glossina decorsei* Brumpt. T. c. pp. 430-432.
[See II. G. 1.]
50. — & LEBAILLY, C. Description de quelques nouvelles espèces de Trypanosomes et d'Hémogregarines parasites des Téléostéens marins. C.R. Ac. Sci. cxxxix, pp. 613-615.
Abstract in Bull. Inst. Pasteur ii, p. 990.
51. — & WURTZ, —. Maladie du sommeil expérimentale chez les souris, rats, cobayes, lapins, marmottes et hérissons. C.R. Soc. Biol. lvi, pp. 567-569.
Abstract in Centrbl. Bakter. (1) xxxv, Ref. p. 406.
52. — & —. Maladie du sommeil expérimentale chez les singes d'Asie et d'Afrique. T. c. pp. 569-571.
53. — & —. Maladie du sommeil expérimentale chez les singes d'Amerique, les makis de Madagascar, le chien et le porc. T. c. pp. 571-573.
54. BYLOFF, K. Ein Beitrag zur Kenntniss der Rattentrypanosomen. SB. Ak. Wien cxiii, pl. 111-138, 2 pls.
55. CALDERON, S. Nota sobre el terreno nummulítico del Guadalquivir. Bol. Soc. espan. iv, pp. 56-59.
56. CALKINS, G. N. Studies on the Life-history of Protozoa. iv. Death of the A Series. Conclusions. J. exp. Zool. i, pp. 423-461, 3 pls., 3 text-figg.
[See II. D. 2.]
57. —. Evidences of a sexual cycle in the Life-history of *Amœba proteus*. Arch. Protistenk. v, pp. 1-16, 3 pls., 1 text-fig.
58. —. The Life-history of *Cytoryctes variolæ* Guarnieri. Stud. Path. Etiol. Variola 1904 (Office J. Med. Res. Boston), pp. 136-172, pls. 16-20, 5 text-figg.
59. —. Protozoa and Disease. The Century Magazine lxvii, pp. 931-940, 8 text-figg.
Popular account.
60. CASH, J. On some new and little-known British freshwater Rhizopoda. J. Linn. Soc. xxix, pp. 218-225, pl. 26.
61. CASTELLANI, A. "*Leishmania donovani*" in Ceylon. Brit. Med. J. 1904, ii, pp. 656 & 657, 2 figg.
62. —. Some researches on the Etiology of dysentery in Ceylon. J. Hygiene iv, pp. 495-510, 1 text-fig.
63. — & WILLEY, A. Observations on the Hæmatozoa of Vertebrates in Ceylon. (A preliminary note.) Spolia Zeylan. ii, pp. 78-92, 1 pl.
Abstract in Bull. Inst. Pasteur ii, p. 770.

64. CAULLERY, M. & MESNIL, F. Sur un type nouveau (*Sphaeractinomyxon stolci* n. g., n. sp.) d'Actinomyxidies, et son développement. C.R. Soc. Biol. lvi, pp. 408-410.
65. — & —. Sur les affinités des Actinomyxidies. T. c. pp. 410-412.
66. — & —. Revue annuelle de Zoologie. Rev. gen. Sci. xv, pp. 594-610. [Able review of important contributions to Protozoan knowledge during 1904, pp. 601-604.]
67. *CHAINSKEY, A. Ueber Veränderungen im Bau des Kernes bei *Paramoecium*. Arb. Lab. Warsaw xxx, 1903. [In Russian.]
Abstract in Zool. Zentrbl. xi, p. 509.
CHALMERS, A. J. [See WILLEY, CHALMERS & PHILIP (359).]
68. CHAPMAN, F. On the mineralogical structure of the porcellaneous Foraminifera. Ann. Nat. Hist. (7) xiv, p. 310.
69. —. Foraminifera and Ostracoda from the Cretaceous of East Pondoland, South Africa. Ann. S. African Mus. iv (v), pp. 221-237, pl. 29.
70. —. On some Foraminifera and Ostracoda from Jurassic (Lower Oolite) Strata, near Geraldton, Western Australia. P. Soc. Victoria xvi (n. s.), pp. 185-206, pls. 22 & 23.
71. —. On some Cainozoic Foraminifera from Brown's Creek, Otway Coast. Rec. geol. Surv. Victoria i, pp. 227-230, pl. 22.
72. CHECCHIA-RISPOLI, G. I Foraminiferi eocenici del gruppo del M. Judica e dei dintorni di Catenanuova in provincia di Catania. Boll. Soc. geol. Ital. xxiii, pp. 25-66, pl. 2.
CHOFFAT, P. [See SCHLUMBERGER & CHOFFAT (306).]
CHOWNING, W. M. [See WILSON & CHOWNING (360).]
73. CHRISTOPHERS, S. R. Tropical splenomegaly and oriental sore. Brit. Med. J. 1904, ii, pp. 655 & 656.
74. —. On a parasite found in persons suffering from enlargement of the spleen in India. Preliminary Report. Sci. Mem. India 1904, viii, 17 pp., 2 pls.
Abstract in Bull. Inst. Pasteur ii, p. 438.
75. —. [Same title.] Second Report. Op. cit. 1904, ii, 21 pp., 2 pls.
CHRISTY, C. [See DUTTON, TODD & CHRISTY (89).]
76. CLEVE, P. T. Report on Plankton collected by Mr Thorold Wulff during a voyage to and from Bombay. Arkiv Zool. i, pp. 329-381, pls. 16-19.
77. COHN, L. Zwei parasitische Infusorien aus *Discoglossus pictus*. Arch. Protistenk. iv, pp. 43-63, pl. 4.
Abstract in Bull. Inst. Pasteur ii, p. 853.
78. COUNCILMAN, W. T., MAGRATH, G. B. & BRINCKERHOFF, W. R. The pathological anatomy and histology of Variola. Stud. Path. Etiol. Variola 1904 (Office J. Med. Res. Boston), pp. 7-135, pls. 1-15.
[See II. c. 2.]
79. v. DADAY, E. Mikroskopische Süsswasserthiere aus Turkestan. Zool. Jahrb. Syst. xix, pp. 469-553, pls. 27-30, 5 text-figg. [See II. c. 1.]
80. DANGEARD, P. A. Contribution à l'étude des Diplozoaires l'*Arcella vulgaris*. Microgr. prep. xii, pp. 84-86. [See Zool. Rec. 1903 (76).]

81. DERVIEUX, E. La formazione geologica di Moncalieri ed il *Loess*. Atti Acc. Pont. Lincei lvii, pp. 28-32.
Occurrence of Foraminifera noted.
82. DIAZ VILLAR, J. M. Hematozoarios de los animales. Bol. Soc. espan. iii (1903), pp. 348-351.
83. DONOVAN, C. Human piroplasmosis. Lancet 1904, ii, pp. 744-750, 1 pl.
Abstract in Bull. Inst. Pasteur ii, p. 957.
84. DOUVILLÉ, R. Sur la géologie de la vallée du Guadalquivir. Bull. Soc. geol. France (4) iii, pp. 620 & 621.
85. —. Nummulitique du Sud-Ouest. Op. cit. (4) iv, pp. 283 & 284.
— [See also LEMOINE & DOUVILLÉ (200 & 201).]
LE DOUX, C. A. [See BOWHILL & LE DOUX (38).]
DREYER, G. [See SALOMONSEN & DREYER (297).]
86. DSCHUNKOWSKY, E. & LUHS, J. Die Piroplasmosen der Rinder. Centrbl. Bakter. (1) xxxv, orig. pp. 486-492, 3 pls. [See II. c. 2.]
Abstract in Bull. Inst. Pasteur ii, p. 258.
87. DUBOSCQ, O. Changement de génération et changement d'hôte chez *Trypanosoma* et *Spirochæte*. Arch. zool. exp. Notes (4) ii, pp. 155 & 156, 169-172, 188-193.
Detailed review of SCHAUDINN's work (301).
— [See also LÉGER & DUBOSCQ (192-195).]
88. DUCLOUX, L. Sur une Hémogrégarine de *Emys leprosa*. C.R. Soc. Biol. lvi, pp. 564 & 565.
89. DUTTON, J. E., TODD, J. L. & CHRISTY, C. Human trypanosomiasis on the Congo. Brit. Med. J. 1904, i, pp. 186-188.
Abstract in Bull. Inst. Pasteur ii, p. 304.
90. DYÉ, L. Les parasites des Culicides. Arch. parasit. ix, pp. 5-77, 6 text-figg.
Gives a general account of the Protozoan parasites which infest *Culicidæ*, and their life-history where known (pp. 18-44).
91. EDINGTON, A. On the occurrence of an epidemic among the domesticated animals in Mauritius, in which *Trypanosomata* were found in the blood. Rep. S. Afric. Ass. i, pp. 258 & 259.
92. ELMASSIAN, M. & MIGONE, E. Mal de Caderas chez les animaux domestiques et sauvages (épidémies parallèles). Ann. Inst. Pasteur xviii, pp. 587-589.
93. ENTZ, G. A Quarnero Tintinnidai. Allatt. Kozl. Magyar Tars. 1904, pp. 121-133, 36 text-figg.
94. D'ESPINE, A. & JUNG, —. La maladie du sommeil, avec une note sur le genre *Trypanosoma*. Arch. Sci. Nat. (4) xvii, pp. 308-330.
95. FAURÉ, E. Sur le pédoncule de quelques Vorticelles. C.R. Ac. Sci. cxxxviii, pp. 994-996.
Abstract in J. R. Micr. Soc. 1904, p. 660.
96. —. Sur la structure du protoplasma chez les *Vorticellidæ*. C.R. Soc. Biol. lvi, pp. 764-766.
97. —. Sur la structure du protoplasma chez les Infusoires ciliés. Op. cit. lvii, pp. 123-125.

98. [FAURÉ, E.] Note sur la structure du pédoncule du *Carchesium aselli* (Eng.). T. c. pp. 19 & 20.
99. —. Sur l'appareil contractile des *Vorticellidæ*. T. c. pp. 575-577.
100. —. L'appareil fixateur des Discotriches et ses indications au point de vue de la phylogénèse. T. c. pp. 464 & 465.
101. —. Sur la structure du pédoncule des *Vorticellidæ*. T. c. pp. 506-508.
102. —. La *Vorticella citrina* et la fonction adipogénique chez les *Vorticellinæ*. T. c. pp. 390-392.
103. —. Épuration et rajeunissement chez les *Vorticellidæ*. T. c. pp. 428-430.
104. —. Sur la formation et la structure de la coque des *Vaginicolinæ*. T. c. pp. 551 & 552.
105. —. Note sur un groupe nouveau d'*Opercularia*. Arch. anat. micr. vii, pp. 181-197, 4 text-figg.
106. —. La Vorticelle muguet. Nature (La) xxxii, ii, pp. 33 & 34, 2 figg. [Popular account of (95, 99, 101).]
107. FERRETTI, U. Di alcuni Protozoi e dei loro agenti di trasmissione. Boll. Soc. zool. Ital. xiii, pp. 259-264. [Hæmatozoa and Insects.]
108. *FLORENTIN, R. La faune des grottes de Saint-Reine. Feuille Natural. (4) xxxiv, pp. 176-179. [Protozoa.]
109. FOA, A. Ricerche intorno a due specie di Flagellati parassiti. Rend. Acc. Lincei xiii, 1, pp. 121-130, 6 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 336.
110. —. Recherche sulla riproduzione dei Flagellati. II. Processo di divisione delle Triconinfe. Op. cit. xiii, 2, pp. 618-625, 5 text-figg.
— [See also GRASSI & FOA (126).]
111. FORNASINI, C. Illustrazione di specie Orbignyane di "Nummulitidæ" istituite nel 1826. Boll. Soc. geol. Ital. xxii, pp. 395-398, pl. 14.
112. —. Distribuzione delle Testilarine negli strati miocenici d' Italia. Op. cit. xxiii, pp. 89-116.
113. FOWLER, G. H. Notes on the Anatomy of *Gazelletta*. Quart. J. Micr. Sci. xlviii, pp. 483-488, 3 text-figg.
114. FRIEDBERG, W. Tekst do zeszytu szesnastego. Atlas geol. Galicyi xvi, 1903, 147 pp. [In Hungarian. Lists of Foraminifera given.]
115. GALLI-VALERIO, B. Die Piroplasmose des Hundes. Zusammenfassende Uebersicht. Centrbl. Bakter. (1) xxxiv, Ref. pp. 367-371, 3 text-figg.
Abstract in J. R. Micr. Soc. 1904, p. 661.
116. GIARD, A. Sur une faunule caractéristique des sables à diatomées d'Ambleteuse (Pas-de-Calais). C.R. Soc. Biol. lvi, pp. 295-298.
117. GIEMSA, G. Ein Vereinfachung und Vervollkommnung meiner Methylenazur-Methylenblau-Eosin-Färbemethode zur Erzielung der Romanowsky-Nochtschen Chromatinfärbung. Centrbl. Bakter. (1) xxxvii, Orig. pp. 308-311. [See II. G. 2.]
118. GILSON, G. Exploration de la mer sur les côtes de la Belgique en 1899. Mem. Mus. Belgique i (1903), 81 pp., 3 charts.

119. GINESTE, C. L'organogénèse et l'histogénèse au point de vue phylogénique. Trav. Lab. Arcachon vii, pp. 87-161, 63 text-figg.
Draws on the Protozoa for illustration.
120. GIRTY, G. H. *Triticites*, a new genus of Carboniferous Foraminifers. Amer. J. Sci. (4) xvii, pp. 234-240, 5 text-figg.
121. —. Note on the Carboniferous Fossils. (In "The Geology and Ore deposits of the Bisbee Quadrangle, Arizona.") Prof. Pap. U. S. Geol. Surv. xxi, pp. 46-54, pls. 10 & 11.
122. —. The Carboniferous Formations and Faunas of Colorado. Op. cit. xvi (1903), 546 pp., 10 pls.
123. GOLDSCHMIDT, R. Die Chromidien der Protozoen. Arch. Protistenk. v, pp. 126-144, 1 text-fig.
GORKA, S. [See SANDOR GORKA (299).]
124. GOUGH, G. C. A short note on the Foraminifera of the Larne district. Irish Natural. xiii, pp. 37 & 38.
125. —. Foraminifera in Glacial sands. T. c. pp. 257 & 258.
126. GRASSI, B. & FOA, A. Ricerche sulla riproduzione dei Flagellati. I. Processo di divisione delle Joenie e forme affini. Rend. Acc. Lincei xiii, 2, pp. 241-253, 17 text-figg.
Abstracts in J. R. Micr. Soc. 1904, p. 659, and Bull. Inst. Pasteur ii, p. 953.
127. GREELEY, A. W. Experiments on the physical structure of the Protoplasm of *Paramœcium* and its relation to the reactions of the organism to Thermal, Chemical and Electrical stimuli. Biol. Bull. vii, pp. 3-32.
128. GRUBER, A. Ueber *Amœba viridis* Leidy. Zool. Jahrb. Suppl. vii (Festschr. Weissmann) 1904, pp. 67-76, pl. 7.
Abstract in Zool. Zentrbl. xi, p. 423.
129. GUIART, J. Morphological considerations on the anterior extremity of the Trypanosome. J. trop. Medicine vii, pp. 6-8, 4 text-figg.
Criticised in Bull. Inst. Pasteur ii, p. 296.
130. GUPPY, R. J. On some samples of rock from Borings at Sangre-grande, Trinidad. Part I. Geol. Mag. (5) i, pp. 193-199, pl. 7.
[Reprint of Zool. Rec. 1903 (141).]
131. —. Observations on some of the Foraminifera of the Oceanic Rocks of Trinidad. T. c. pp. 241-250, pls. 8 & 9. [Reprint of Zool. Rec. 1903 (142).]
132. HÄCKER, V. Bericht über die Tripyleen-Ausbeute der Deutschen Tiefsee-Expedition. Verh. Deutsch. zool. Ges. xiv, pp. 122-156, 21 text-figg.
133. HALBEN, R. Theoretisches über die Bedeutung des Pigmentes für den Sehakt der Wirbellosen speziell der Protozoen. Biol. Centrbl. xxiv, pp. 283-288.
Abstract in J. R. Micr. Soc. 1904, p. 536. [See II. B. 3.]
134. HAMBURGER, C. Die Konjugation von *Paramœcium bursaria* Focke. Arch. Protistenk. iv, pp. 199-239, pls. 7-9, 2 text-figg.
135. HARTMANN, M. Die Fortpflanzungsweisen der Organismen, Neubennennung und Eintheilung derselben, erläutert an Protozoen, Volvocineen und Dicyemiden. Biol. Centrbl. xxiv, pp. 18-61, 8 text-figg.
Abstract in J. R. Micr. Soc. 1904, p. 313.

136. HARTOG, M. Some problems of Reproduction.—II. *Quart. J. Mic. Sci.* xlvii, pp. 583-608.
137. HERTEL, E. Ueber Beeinflussung des Organismus durch Licht, speziell durch die chemisch wirksamen Strahlen. *Zeitschr. allg. Physiol.* iv, pp. 1-43, 1 pl., 1 text-fig.
138. HERTWIG, R. Ueber physiologische Degeneration bei *Actinosphaerium eichhorni*. Nebst Bemerkungen zur Aetiologie der Geschwülste. *Denk. Ges. Jena (Festschr. Haeck.)* xi, pp. 301-354, pls. 9-12.
139. —. Ueber Konjugation von *Dileptus gigas*. *SB. Ges. Munchen* xx, 1, pp. 1-3.
140. HESSE, E. *Thelohania legeri* n. sp., Microsporidie nouvelle, parasite des larves d'*Anopheles maculipennis* Meig. *C.R. Soc. Biol.* lvii, pp. 570 & 571.
141. —. Sur le développement de *Thelohania legeri* Hesse. *T. c.* pp. 571 & 572, 10 text-figg.
142. HODGES, A. D. Sleeping-sickness: a résumé. *Lancet* 1904, ii, pp. 290-292.
143. *HOFER, B. Die Schlafzucht des Karpfens. *Allg. Fischerei Zeitung* xix, pp. 48 & 49, 1 text-fig.
144. —. Handbuch der Fischkrankheiten. München (Verlag allgm. Fischereizeitung) 1904, 359 pp., 18 coloured plates, 22 text-figg.
Review in *Verh. Ges. Wien* liv, pp. 358-361; abstracts in *J. R. Mic. Soc.* 1904, p. 659, and *Centrbl. Bakter.* (1) xxxiv, Ref. p. 717.
145. HOLLAND, R. Notes on *Nummulites* in the Turkish Rocks described by Col. English. *Quart. J. Geol. Soc.* lx, pp. 292-295, pl. 25.
146. *HOLMES, J. D. Evolution of the *Trypanosoma evansi*. *J. comp. Path. and Therap.* xvii, pp. 210-214, 2 pls.
Abstract in *Bull. Inst. Pasteur* ii, p. 954.
147. HUTTON, F. W. *Index Faunæ Novæ Zealandiæ*. London (Dulau & Co.) 1904, pp. (viii+372). [See III. A.]
148. IMMERMANN, F. Die Tripyleen-Familie der Aulacanthiden der Plankton-Expedition. *Ergebn. Plankton-Exped. Humboldt-Stiftung* iii, L. h., 7 pls., 1 chart.
149. JAHN, J. Einige neue Fossilienfundorte in der ostböhmisches Kreideformation. *Jahrb. geol. Reichsanst.* liv, pp. 75-90.
150. JAKIMOFF, W. L. Zur Biologie der Trypanosomen der Nagana und des Mal de Caderas. *Centrbl. Bakter.* (1) xxxvii, Orig. pp. 668-677.
151. JENNINGS, H. S. A method of demonstrating the external discharge of the contractile vacuole. *Zool. Anz.* xxvii, pp. 656-658, 1 fig.
[See II. G. 2.]
Abstract in *J. R. Mic. Soc.* 1904, p. 421.
152. —. Physical imitations of the activities of *Amæba*. *Amer. Natural.* xxxviii, pp. 625-642.
The mechanical factors at work in the physical imitations are essentially different from the activities of the living animal.
153. JENSEN, H. J. Contributions to a knowledge of Australian Foraminifera. Part I. *P. Linn. Soc. N. S. Wales* xxix, pp. 810-831, pl. 23.

154. JUKES-BROWNE, A. J. The Cretaceous Rocks of Britain. Vol. III. The Upper Chalk of England. Mem. geol. Surv. U. K. 1904, pp. (x+566), 9 pls., 79 text-figg.
155. KEMMA, A. Les caractères structuraux de la coquille des Foraminifères flottants. Bull. Soc. malac. Belgique xxxviii, 1903 (publ. 1904), pp. cix-cxxvii.
156. KEYSSELITZ, G. Ueber *Trypanophis grobbeni* (*Trypanosoma grobbeni* Poche). Arch. Protistenk. iii, pp. 367-375, 3 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 428.
157. —. Über flagellate Blutparasiten bei Süßwasserfischen. SB. Ges. naturf. Berlin 1904, pp. 285-296.
Preliminary account of important work on piscine Trypanosomes confirmatory of Léger's investigations concerning an alternation of hosts, conjugation, etc.
158. KINKELIN, F. Die Originale der paläontologischen Sammlung im Senckenbergischen Museum und die auf dieselben bezügliche Literatur. Ber. Senckenberg. Ges. 1903, pp. 1-88. [Lists of Foraminiferan specimens.]
159. KOCH, R. Remarks on Trypanosome diseases. [Translation.] Brit. Med. J. 1904, ii, pp. 1445-1449.
General summary of the various Trypanosomes and trypanosomoses.
160. * —. Rhodesian redwater or African coast fever. J. comp. Path. & Therap. xvi (1903), pp. 273 & 390.
Abstract in Bull. Inst. Pasteur ii, p. 302.
161. DE KORTÉ, W. E. The parasites of small-pox, vaccinia and varicella. Lancet 1904, ii, pp. 1776-1778.
162. KÜSTER, E. Ciliaten in Valoniazellen. Arch. Protistenk. iv, pp. 384-390.
LABBÉ, M. [See BEZANÇON & LABBÉ (19).]
163. LANKESTER, E. R. The sleeping sickness. Quart. Rev. July, 1904, pp. 113-138, 7 text-figg.
Comprehensive review of the subject, including abstract of Schaudinn's work; interesting remarks on the Bionomics of parasites.
164. LAVERAN, A. Action du sérum humain sur quelques Trypanosomes pathogènes; action de l'acide arsénieux sur *Tr. gambiense*. C.R. Ac. Sci. cxxxviii, pp. 450-453.
Abstract in Centrbl. Bakter. (1) xxxiv, Ref. p. 813.
165. —. Sur l'agent pathogène de la trypanosomiase humaine, *Tr. gambiense* Dutton. T. c. pp. 841-844.
Abstracts in Centrbl. Bakter. (1) xxxv, Ref. p. 343 and Bull. Inst. Pasteur ii, p. 485.
166. —. Le trypanroth dans le traitement de quelques trypanosomiasés. Op. cit. cxxxix, pp. 19-22.
167. —. Immunité naturelle des Cynocéphales pour les trypanosomiasés; activité de leur sérum sur les Trypanosomes. T. c. pp. 177-179.
168. —. Les trypanosomiasés dans l'Ouest africain français. T. c. pp. 658-662. [See II. c. 2.]
169. —. Sur l'existence d'une trypanosomiase des Équidés dans la Guinée française. C.R. Soc. Biol. lvi, pp. 326 & 327. [See II. c. 2.]

170. [LAVERAN, A.] Sur des Culicides de la Guinée française et sur l'index endémique du paludisme dans cette région. T. c. pp. 555 & 556.
171. —. Sur un nouveau Trypanosome d'une grenouille. Op. cit. lvii, pp. 158-160, 2 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 770.
172. —. Trypanoplasme et Trypanosome du vairon. T. c. pp. 250 & 251.
173. — & MESNIL, F. Nouvelles observations sur *Piroplasma donovani* Lav. et Mesn. C.R. Ac. Sci. cxxxviii, pp. 187-189.
Abstract in Bull. Inst. Pasteur ii, p. 214.
174. — & —. Sur un Trypanosome d'Afrique pathogène pour les Équidés, *Tr. dimorphon* Dutton & Todd. T. c. pp. 732-737, 7 text-figg.
Abstracts in J. R. Micr. Soc. 1904, p. 537, and Centrbl. Bakter. (1) xxxv, Ref. p. 344.
175. — & —. Infections naturelles de rats blancs par *Trypanosoma lewisi*. C.R. Soc. Biol. lvii, pp. 247-249. [See II. G. I, III. c.]
Abstract in Bull. Inst. Pasteur ii, p. 987.
176. — & —. Trypanosomes et trypanosomiasés. Paris (Masson et Cie), 1904, 8vo, pp. (xi+417), 1 pl., 61 text-figg.
Comprehensive general account.
Abstract in Bull. Inst. Pasteur ii, p. 696.
177. LEARDI, Z. Foraminiferi eocenici di S. Genesio (Collina di Torino). Atti Mus. Milano xliii, pp. 158-171.
178. —. Il *Conulites ægyptiensis* Chapman e la *Baculogypsina sphærolata* (Parker e Jones) di S. Genesio. T. c. pp. 182-189, pl. 5.
179. LEBAILLY, C. Sur quelques Hémoflagellés des Téléostéens marins. C.R. Ac. Sci. cxxxix, pp. 576 & 577.
Abstract in Bull. Inst. Pasteur ii, p. 990.
— [See also BRUMPT, E. & LEBAILLY, C. (50).]
LEDINGHAM, J. C. [See MARCHAND & LEDINGHAM (221-223).]
180. LÉGER, L. Sur la morphologie du *Trypanoplasma* des vairons. C.R. Ac. Sci. cxxxviii, pp. 824 & 825. [For figures see (181).]
Abstracts in J. R. Micr. Soc. 1904, p. 421, and Centrbl. Bakter. (1) xxxv, Ref. p. 342.
181. —. Sur la structure et les affinités des Trypanoplasmes. T. c. pp. 856-859, 5 text-figg.
Abstracts in Centrbl. Bakter. (i) xxxv, Ref. p. 341, and Bull. Inst. Pasteur ii, p. 427.
182. —. Sur la sporulation du *Triactinomyxon*. C.R. Soc. Biol. lvi, pp. 844-846, 4 text figg.
183. —. Considérations sur le genre *Triactinomyxon* et les Actinomyxidies. T. c. pp. 846-848.
184. —. Sur les Hémoflagellés du *Cobitis barbatula* L. I. *Trypanosoma barbatulæ* n. sp. Op. cit. lvii, pp. 344 & 345.
185. —. *Trypanoplasma varium* n. sp., parasite du sang de *Cobitis barbatula* L. T. c. pp. 345-347.
186. —. Sur un nouveau Flagellé parasite des Tabanides. T. pp. 613-615, 6 text-figg.

187. [LÉGER, L.] Sur les affinités de l'*Herpetomonas subulata* et la phylogénie des Trypanosomes. T. c. pp. 615-617.
188. —. La reproduction sexuée chez les *Stylorhynchus*. Arch. Protistenk. iii, pp. 303-357, pls. 13 & 14, 8 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 521.
189. —. Sporozoaires parasites de l'*Embia solieri* Rambur. T. c. pp. 358-366, 7 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 521.
190. —. Sur les *Embia* du midi de la France. C.R. Ass. Franc. xxxii, 1, p. 228. [Mentions discovery of the Gregarines described in (189).]
191. —. Sur les Actinomyxidies. T. c. pp. 228 & 229. [Brief notice of (182 & 183).]
192. — & DUBOSCQ, O. Nouvelles recherches sur les Grégarines et l'épithélium intestinal des Trachéates. Arch. Protistenk. iv. pp. 335-383, pls. 13 & 14, 11 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 991.
193. — & —. Notes sur les Infusoires endoparasites. I. Les *Astomata* représentent-ils un groupe naturel? Arch. zool. exp. Notes (4) ii, pp. 98-100.
Abstract in Bull. Inst. Pasteur ii, p. 702.
194. — & —. [Same title.] II. *Anoplophrya brasili* Léger & Duboscq, parasite d'*Audouinia tentaculata*. Arch. Zool. exp. (4) ii, pp. 337-343, 2 text-figg.
195. — & —. [Same title.] III. *Opalina saturnalis* Léger & Duboscq, parasite de *Box boops* L. T. c. pp. 343-356, pl. 14, 1 text-fig.
196. LEISHMAN, W. B. Note on the nature of the parasitic bodies found in tropical splenomegaly. Brit. Med. J. 1904, i, p. 303.
Abstract in Bull. Inst. Pasteur ii, p. 215.
197. —. A method of producing chromatin staining in sections. J. Hygiene iv, pp. 434-436. [See II. G. 2.]
198. LEMMERMANN, E. Beiträge zur Kenntniss der Planktonalgen. XIX. Das Phytoplankton der Ausgrabenseen bei Plön. Forschber. Plön xi, pp. 289-311, 17 text-figg.
199. LEMOINE, P. Sur la présence de l'Oligocène à Madagascar. C.R. Ac. Sci. cxxxviii, pp. 311-313. [Occurrence of Foraminifera.]
200. — & DOUVILLÉ, R. Résultats paléontologiques et stratigraphiques de l'étude des Lépidocyclines. Bull. Soc. geol. France (4) iv, pp. 347-349. [Brief account of (201).]
201. — & —. Sur le genre *Lepidocyclina* Gümbel. Mem. Soc. geol. France xii (ii), 41 pp., 3 pls., 3 text-figg.
202. LESAGE, A. Culture de l'amibe de la dysenterie des pays chauds. C.R. Ac. Sci. cxxxix, pp. 1237-1239.
203. LINGARD, A. Can the "*Piroplasma bigeminum*" find a habitat in the human subject? Centrbl. Bakter. (1) xxxvi, Orig. pp. 214-216, 1 pl.
204. —. The *Trypanosoma* of Dourine and its life-history. Op. cit. 1) xxxvii, Orig. pp. 537-547.
LINTON, S. F. [See THOMAS & LINTON (343).]

205. LO BIANCO, S. Pelagische Tiefseefischerei der "Maja" in der Umgebung von Capri. Jena (G. Fischer), 1904, pp. (vi + 91), 41 pls., 1 chart.
206. LOEWENTHAL, W. Das Auftreten eines Mikronukleus-artigen Gebildes bei *Opalina ranarum*. Arch. Protistenk. iii, pp. 387-390, 10 text-figg. Abstract in Bull. Inst. Pasteur ii, p. 429.
207. LORD, J. E. On *Euglena deses*. Tr. Manchester Micr. Soc. 1903, pp. 75 & 76, pl. 3, fig. 2.
208. —. On a peculiar habit of *Pamphagus hyalinus*. T. c. pp. 76-78, pl. 3, fig. 1.
Low, G. C. [See MONSON & LOW (219 & 220).]
209. LÜHE, M. Bau und Entwicklung der Gregarinen. I. Theil: Die Sporoziten, die Wachstumsperiode und die ausgebildeten Gregarinen. (Zusammenfassende Uebersicht). Arch. Protistenk. iv, pp. 88-198, 31 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 701.
210. —. Flagellate Blutparasiten als Krankheitserreger bei Thieren und Menschen. SB. Ges. Königsb. xlv, pp. 48-53. [General review of the principal forms of Trypanosomes.]
211. —. Neue Untersuchungen über Trypanosomen und ähnliche Blutparasiten. T. c. pp. 85-88. [Mainly a full abstract of Schaudinn's work (301).]
LUHS, J. [See DSCHUNKOWSKY & LUHS (86).]
212. LUPI, A. Fauna miocenica presso Tagliacozzo. Boll. Soc. geol. Ital. xxiii, pp. xxviii & xxix. [Occurrence of Foraminifera.]
213. LUTZ, A. & SPLENDORE, A. Ueber Pebrine und verwandte Mikrosporidien. Centrbl. Bakter. (1) xxxvi, Orig. pp. 645-650, 2 pls. and 1 text-fig.
Abstract in Bull. Inst. Pasteur ii, p. 905.
214. LUZZANI, L. Nachweisung des spezifischen Parasiten in einem Falle von Tollwuth beim Menschen. Centrbl. Bakter. (1) xxxvi, Orig. pp. 540-545, 1 pl. [See II. C. 2.]
215. MACALLUM, A. B. The Palæochemistry of the ocean in relation to animal and vegetable protoplasm. Stud. Univ. Toronto (Physiolog. ser. 5) 1904, 30 pp.
On the part played by Foraminifera in forming deposits.
216. —. [Same title.] Tr. Canad. Inst. vii (iii), pp. 535-562. [Identical with (215).]
217. *MAGINZKY, R. S. *Chilodon notamoibos* nov. spec. Tageb. zool. sect. Ges. Naturw. Moskau iii (v), (1903) pp. 1-5, 1 pl., 6 text-figg. [In Russian.]
Abstract in Zool. Zentrbl. xi, p. 191.
218. MAGRATH, G. B. & BRINCKERHOFF, W. R. On the occurrence of *Cytoryctes variolæ* Guarnieri, in the skin of the monkey inoculated with variola virus. Stud. Path. Etiol. Variola 1904 (Office J. Med. Res. Boston), pp. 173-179, pls. 21 & 22.
— & —. [See also COUNCILMAN, MAGRATH, & BRINCKERHOFF (78).]

219. MANSON, P. & LOW, G. C. The Leishman-Donovan body and tropical splenomegaly. *Brit. Med. J.* 1904, i, pp. 183-186, 12 figg.
Abstract in *Bull. Inst. Pasteur* ii, p. 214.
220. — & —. The Leishman-Donovan body in ulcerated surfaces. A possible route of its escape from the human body. *J. trop. Medicine* vii, p. 239.
221. MARCHAND, F. & LEDINGHAM, J. C. On the question of *Trypanosoma*-infection in man. *Lancet* 1904, i, pp. 149 & 150, 1 text-fig. [Translation of (222).]
222. — & —. Zur Frage der *Trypanosoma*-Infektion beim Menschen. *Centrbl. Bakter.* (1) xxxv, orig. pp. 594-598, 1 text-fig.
Abstract in *Bull. Inst. Pasteur* ii, p. 214.
223. — & —. Ueber Infektion mit "Leishman'schen Körperchen" (Kala-Azar?) und ihr Verhältniss zur Trypanosomen-Krankheit. *Zeitschr. Hyg.* xlvii, pp. 1-40, 2 pls.
Abstracts in *Centrbl. Bakter.* (1) xxxv, Ref. p. 345; and *Bull. Inst. Pasteur* ii, p. 607.
224. MARINO, F. Coloration des Protozoaires et observations sur la neutrophilie de leur noyau. *Ann. Inst. Pasteur* xviii, pp. 761-766, pl. 9.
225. MARKL, —. Beitrag zur Kenntniss der Naganainfektion bei Meer-schweinchen. *Centrbl. Bakter.* (1) xxxvii, orig. pp. 530-537, 1 pl.
226. MARPMANN, G. Ueber die Präparation der Diatomaceen, Foraminiferen, Polycystineen und Spongillen. *Zeitschr. ang. Mikr.* x, pp. 141-145.
[See II. G. 2.]
227. MARTELLI, A. Il Flysch del Montenegro sud-orientale. *Rend. Acc. Lincei* 12, ii, pp. 166-171.
228. MARTIN, G. C. Radiolaria. *Maryland geol. Surv. (Miocene)*. Baltimore, 1904, pp. 447-459, pl. 130.
229. MARTIN, K. Jungtertiäre Kalksteine von Batjan und Obi. *Samm. geol. Mus. Leiden* (1) vii, pp. 225-230.
230. *MARTINI, E. Vergleichende Beobachtungen über Bau und Entwicklung der Tsetse u. Ratten-Trypanosomen. *R. Koch's Festschr. Jena* (1903), pp. 220-238, 2 pls., 33 text-figg.
Abstract in *Bull. Inst. Pasteur* ii, p. 379.
231. DI MAURO, S. Sopra un nuovo Infusorio ciliato parassita dello *Strongylocentrotus lividus* e dello *Sphaerechinus granularis* (*Anophrys echini* n. sp.). *Boll. Acc. Gioen.* lxxxi (May), pp. 13-19, 3 text-figg.
232. MAYER, P. Protozoa. Bericht für 1903. *Zool. Jahresber.* 1903 (publ. 1904), 26 pp.
[See II. G. 3.]
233. MEISSNER, W. Notiz über das Plankton des Flusses Murgab (Merw, Turkestan). *Zool. Anz.* xxvii, pp. 648-650, 3 text-figg.
234. MESNIL, F. [No title. Important note on work of Sergent, confirmatory of Schaudinn (301).] *C.R. Soc. Biol.* lvii, p. 164.
235. —, NICOLLE, F. & REMLINGER, P. Sur le Protozoaire du bouton d'Alep. *C.R. Soc. Biol.* lvii, pp. 167-169.
Abstract in *Bull. Inst. Pasteur* ii, p. 820.
— [See also CAULLERY & MESNIL (64-66) & LAVERAN & MESNIL (173-176).]
MIGONE, E. [See ELMASSIAN & MIGONE (92).]

236. MILLETT, F. W. Report on the Recent Foraminifera of the Malay Archipelago collected by Mr A. Durrand, F.R.M.S. Part xvi. J. R. Micr. Soc. 1904, pp. 489-506, pl. 10.
237. —. [Same title.] Part xvii. (Conclusion.) T. c. pp. 597-609, pl. 11.
238. MITROPHANOW, P. Note sur les corpuscules basaux des formations vibratiles. Arch. zool. exp. Notes (4) ii, pp. 167-169, text-figg. 3 & 4.
Abstract in J. R. Micr. Soc. 1904, p. 659.
239. —. Étude sur la structure, le développement, et l'explosion des trichocystes des Paramécies. Arch. Protistenk. v, pp. 78-91, 9 text-figg.
240. *—. Der Kernapparat der Paramœcien. Arb. Lab. Warsaw xxxi (1903), pp. 1-48, 31 text-figg. [In Russian.]
Abstracts in Zool. Zentrbl. xi, p. 509, and J. R. Micr. Soc. 1904, p. 660.
241. *—. Ueber Bau, Entwicklung und Thätigkeit der Trichocysten bei *Paramœcium*. Op. cit. xxxii, pp. 1-18, 9 text-figg. [In Russian.]
Abstracts in Zool. Zentrbl. xi, p. 510, and J. R. Micr. Soc. 1904, p. 660.
242. MONTI, R. Limnologische Untersuchungen über einige italienische Alpenseen. Forschber. Plon xi, pp. 252-275.
243. MOORE, S. J. Some observations pointing to an intracorpuseular stage of development in the Trypanosome. Lancet 1904, ii, p. 950.
244. MUNTHE, H. Om Faunan i vestgötaslättens Yoldialera mellan Skara-Herrljunga och veuern. Sveriges geol. Unders. Afh., Ser. c, No. 187, 46 pp., 1 chart. [List of Foraminifera, p. 40.]
245. MURRAY, J. Biology of the Lochs of the Tay Basin. Geogr. Journal xxiii, pp. 55-61.
246. —. [Same title.] Scott. geogr. Mag. xx, pp. 41-47.
247. NICOLLE, C. Sur une Hémogrégarine du Crapaud. C.R. Soc. Biol. lvi, pp. 330-332.
248. —. Sur une Hémogrégarine karyolysante de *Gongylus ocellatus*. T. c. pp. 608 & 609.
249. —. Sur une Hémogrégarine de *Lacerta ocellata*. T. c. pp. 912-914, 8 text-figg.
NICOLLE, F. [See also MESNIL, NICOLLE, & REMLINGER (235).]
NISHIKAWA, T. [See OKAMURA & NISHIKAWA (253).]
250. NOBRE, A. Subsídios para o estudo da Fauna marinha do sul de Portugal. Ann. Sci. nat. Porto viii (1903), pp. 153-160.
251. NOVY, F. G. & MCNEAL, W. J. On the cultivation of *Trypanosoma brucei*. J. infect. Diseases i, pp. 1-30, 3 tables.
Abstract in Bull. Inst. Pasteur ii, p. 246.
252. NUTTALL, G. H. Canine piroplasmiasis.—I. J. Hygiene iv, pp. 219-257, 7 text-figg. and 7 charts.
253. OKAMURA, K. & NISHIKAWA, T. A List of the Species of *Ceratium* in Japan. Annot. zool. Japon. v, pp. 121-131, pl. 6.
254. OSTENFELD, C. H. On two new marine species of Heliozoa occurring in the plankton of the North Sea and the Skager Rak. Medd. komm. Havundersog. i (ii), 5 pp., 7 text-figg.

255. [OSTENFELD, C. H.] & PAULSEN, O. Planktonprøver fra Nord-Atlanterhavet (c. 58°–60° N. Br.), samlede i 1899 af Dr K. J. V. Steenstrup. Medd. Gronland xxvi, pp. 143–207. (Résumé in English, pp. 208–210.)
256. PAEHLER, F. Ueber die Morphologie, Fortpflanzung und Entwicklung von *Gregarina ovata*. Arch. Protistenk. iv, pp. 64–87, pls. 5 & 6. Abstract in Bull. Inst. Pasteur ii, p. 853.
PANISSET, —. [See VALLÉE & PANISSET (347).]
257. PANSE, O. *Trypanosoma theileri* (?) in Deutsch-Ostafrika. Zeitschr. Hyg. xlv, pp. 376–378, 1 fig.
Abstract in Centrbl. Bakter. (1) xxxv, Ref. p. 405.
258. PAULSEN, O. Plankton investigations in the waters round Iceland in 1903. Medd. komm. Havundersog. i (i), 48 pp., 12 text-figg., 2 maps.
——. [See also OSTENFELD & PAULSEN (255).]
259. PENARD, E. Quelques nouveaux Rhizopodes d'eau douce. Arch. Protistenk. iii, pp. 391–422, 11 text-figg.
260. —. Étude sur la *Chlamydomyxa montana*. Op. cit. iv, pp. 296–334, 19 text-figg.
261. —. Sur la décharge de la vésicule contractile dans l'*Amœba terricola*. Rev. Suisse Zool. xii, pp. 659–652, 2 text-figg.
262. —. Les Hélozoaires d'eau douce. Genève (Kündig.) 1904, 341 pp., numerous text-figg.
Review in Bull. Inst. Pasteur ii, p. 428.
263. PEREZ, C. Sur une Microsporidie parasite du *Carcinus maenas*. C.R. Soc. Biol. lvii, pp. 214 & 215.
Abstract in Bull. Inst. Pasteur ii, p. 810.
264. —. Sur un organisme nouveau, *Blastulidium pædophthorum*, parasite des embryons de Daphnies. Pr.-verb. Soc. Sci. Bordeaux 1902–1903, pp. 75 & 76. [Brief account of Zool. Rec. 1903 (294).]
Abstract in J. R. Micr. Soc. 1904, p. 537.
265. PETERS, A. W. Metabolism and division in Protozoa. P. Amer. Ac. xxxix, pp. 441–516.
266. PETRIE, G. F. A note on the occurrence of a Trypanosome in the rabbit. Centrbl. Bakter. (1) xxxv, Orig. pp. 484–486.
Abstract in Bull. Inst. Pasteur ii, p. 250.
267. *PETSCHENKO, B. Ueber Veränderungen im Bau des Kernes bei *Paramœcium* in natürlichen Existenzbedingungen. Arb. Lab. Warsaw xxx, 1903. [In Russian.]
Abstract in Zool. Zentrbl. xi, p. 509.
PHILIP, W. M. [See WILLEY, CHALMERS & PHILIP (359).]
268. PHILLIPS, L. Note on the occurrence of the Leishman-Donovan parasite in Arabia and Egypt. J. trop. Medicine vii, pp. 236 & 237.
269. PLEHN, M. Ueber die Drehkrankheit der Salmoniden. [*Lentospora cerebalis* (Hofer) Plehn.] (Vorläufige Mittheilung.) Arch. Protistenk. v, pp. 145–166, pl. 5, 7 text-figg.
270. POPOFSKY, A. Die Acantharia der Plankton-Expedition. Theil I. *Acanthometrea*. Ergebn. Plankton-Exped. Humboldt-Stiftung iii, I, f. i, 158 pp., 12 pls., 14 text-figg.
271. POPOW, M. *Opercularia clepsinis* nov. sp. Zool. Anz. xxvii, pp. 340–343, 2 text-figg.

272. PREVER, P. L. Osservazioni sopra alcune nuove *Orbitoides*. Atti Acc. Torino xxxix, pp. 981-988, 1 pl.
273. —. *La Paronœa curvispira* (Mngh.). Riv. Ital. pal. x, pp. 28-41, 1 table.
274. —. Osservazioni sulla sottofamiglia delle *Orbitoidinæ*. T. c. pp. 111-128, pl. 6.
275. —. Considerazioni sullo studio delle Nummuliti. Boll. Soc. geol. Ital. xxii, pp. 461-487, 7 text-figg., 1 table.
276. — & RZEHA, A. Ueber einige Nummuliten und Orbitoiden von österreichischen Fundorte. Verh. Ver. Brunn xlii, pp. 190-201, 2 pls.
277. PROWAZEK, S. Die Entwicklung von *Herpetomonas*, einem mit den Trypanosomen verwandten Flagellaten. (Vorläufige Mittheilung.) Arb. Kaiserl. Gesundheitsamte xx, pp. 440-452, 7 text-figg. Abstracts in Centrbl. Bakter. (1) xxxv, p. 313, and Bull. Inst. Pasteur ii, p. 296.
278. —. Untersuchungen über einige parasitische Flagellaten. Op. cit. xxi, pp. 1-41, pls. 1-4, 2 text-figg. Abstract in Bull. Inst. Pasteur ii, p. 471.
279. —. *Entamoeba buccalis* n. sp. (Vorläufige Mittheilung). T. c. pp. 42-44. Abstract in Bull. Inst. Pasteur ii, p. 522.
280. QUILTER, H. J. Note on a method of taking internal casts of Foraminifera. J. Quekett Club (2), viii (1903), pp. 551 & 552.
281. RAYMOND, G. Sur un parasite très commun dans les moules (*Mytilus edulis*), l'*Anoplophrya mytili* de Quenn. Microgr. prep. xii, pp. 215 & 216, 2 text-figg.
282. READE, T. M. On some borings at Altcar made by the Lancashire and Yorkshire Railway Company. P. Liverp. geol. Soc. ix (iv), pp. 359-369.
283. REBOUL, P. Catalogue des types paléontologiques contenus dans les collections de Grenoble. Trav. Lab. geol. Grenoble vii (i), pp. 127-149. [Foraminifera, pp. 131, 136.]
REMLINGER, P. [See MESNIL, NICOLLE & REMLINGER (235).]
284. RENAULT, B. Sur quelques nouveaux Infusoires fossiles. Bull. Soc. Autun xvi (1903), Pr.-verb. pp. 25-27, pl. A.
285. ROGERS, L. Preliminary note on the development of *Trypanosoma* in cultures of the Cunningham-Leishman-Donovan bodies of cachexial fever and Kala-Azar. Lancet 1904, ii, pp. 215 & 216.
286. —. On the development of Flagellated Organisms (Trypanosomes) from the Spleen Protozoic Parasites of Cachexial Fevers and Kala-Azar. Quart. J. Micr. Sci. xlviii, pp. 367-377, pl. 25. Abstract in Bull. Inst. Pasteur ii, p. 957.
287. —. Cachexial fever in India associated with Cunningham-Leishman-Donovan bodies. Brit. Med. J. 1904, ii, pp. 644-650, 3 text-figg. [See (286) for fuller account relating to the parasites themselves.] Abstract in Bull. Inst. Pasteur ii, p. 607.
288. —. Note on the rôle of the Horse-Fly in the transmission of *Trypanosoma*-infection. T. c. pp. 1454 & 1455.

289. ROSS, R. A new parasite of man. Thompson Yates Lab. Rep. (5), ii, pp. 79-82, 1 pl.
Abstract in Bull. Inst. Pasteur ii, p. 214.
290. — & BOYCE, R. Note on the discovery of *Trypanosoma gambiense* Dutton. T. c. p. 85. [See II. G. 3.]
291. ROUGET, J. Trypanosome de la Dourine; son inoculation aux souris et aux rats. C.R. Soc. Biol. lvi, pp. 744 & 745.
292. RUATA, G. R. Trypanosomiasis in man. J. trop. Medicine vii, pp. 147-149, 167 & 168, 184-186, 198-200.
293. —. Kala-Azar, or tropical splenomegaly. T. c. pp. 350-352.
294. *RZEHAŁ, A. Ueber das Vorkommen von Foraminiferen in den Ablagerungen der pannonischen Stufe in Mähren. Zeitschr. Mähr. Landesmus iv, pp. 55-69.
— [See also PREVER & RZEHAŁ (276).]
295. SABRAZÈS, J. & MURATET, L. Trypanosome de l'anguille. Processus de division. C.R. Soc. Biol. lvi, pp. 66 & 67.
296. — & —. Vitalité du Trypanosome de l'anguille dans des sérosités humaines et animales. Osmonocivité de l'eau. T. c. p. 159.
297. SALMONSEN, C. J. & DREYER, G. Recherches sur les effets physiologiques du radium. C.R. Ac. Sci. cxxxviii, pp. 1543-1545.
298. SAMBON, L. The elucidation of sleeping-sickness. J. trop. Medicine vii, pp. 61-63 & 68-74. (Discussion by various workers. T. c. pp. 87-91.)
299. SANDOR GORKA. Az alomkor es okozoja. Termes. Kozl. Magyar Tars. 1904, pp. 284-288, 2 text-figg.
Summary of knowledge relating to sleeping-sickness, its parasite, and transmitting agent.
300. *SAUL, H. Ueber Reinculturen von Protozoën. Arch. Physiol. 1904, pp. 374-376.
301. SCHAUDINN, F. Generations- und Wirthswechsel bei *Trypanosoma* und *Spirochæte* (Vorläufige Mittheilung). Arb. Kaiserl. Gesundheitsamte xx, pp. 387-439, 20 text-figg. [An English translation runs through the J. trop. Medicine for 1904.]
Review in Bull. Inst. Pasteur ii, p. 199; abstract in Centrbl. Bakter. (1) xxxv, p. 312.
302. —. Protozoen Literatur 1904. I. Theil. Arch. Protistenk. iv, pp. 391-400. [See II. G. 3.]
303. SCHEWIAKOFF, W. Beiträge zur Kenntniss der Radiolaria-Acanthometrea. Mem. Ac. St. Petersb. xii, 10 (1902), 40 pp., 4 pls.
Abstract in J. R. Micr. Soc. 1903, p. 503.
304. SCHILLING, A. Ueber die Tsetsekrankheit oder Nagana. Arb. Kaiserl. Gesundheitsamte xxi, pp. 476-536.
Abstract in Bull. Inst. Pasteur ii, p. 916.
305. SCHLUMBERGER, C. Quatrième note sur les Orbitoïdes. Bull. Soc. geol. France (4) iv, pp. 119-135, pls. 3-6, 7 text-figg.
306. — & CHOFFAT, P. Note sur le genre *Spirocyclus* Munier-Chalmas et quelques autres genres du même auteur. T. c. pp. 358-368, pls. 9 & 10, 3 text-figg.

307. SCHOENICHEN, W. Der physiologische Tod bei den Protozoen. *Zeitschr. naturw.* lxxvii, pp. 128-130.
Brief account of HERTWIG's work (138) on degeneration in *Actinosphaerium*.
308. SCHUBERG, A. Bemerkungen zu einigen Beobachtungen Feinberg's an "mit Coccidien angefüllten Darmcysten vom Kaninchen." *Arch. Protistenk.* v, pp. 122-125. [See II. c. 2.]
309. SCHUBERT, R. J. Die Ergebnisse der mikroskopischen Untersuchung der bei der ärarischen Tiefbohrung zu Wels durchteuften Schichten. *Jahrh. geol. Reichsanst.* liii, pp. 385-422, pl. 19.
310. SCHÜLLER, M. Ueber die Chromatinkörper der Krebs- und Sarkomparasiten des Menschen. *Centrbl. Bakter.* (1) xxxvii, Orig. pp. 547-566, 1 pl.
311. SERGENT, E. & E. Note préliminaire sur une trypanosomiasse des Dromadaires d'Algérie. *C.R. Soc. Biol.* lvi, pp. 120-122.
312. —. Seconde note sur une trypanosomiasse des Dromadaires d'Algérie. *T. c.* pp. 914-916.
313. —. Sur un Trypanosome nouveau, parasite de la grenouille verte. *T. c.* pp. 123 & 124, 1 text-fig.
Abstract in *Bull. Inst. Pasteur* ii, p. 297.
314. —. Sur une Hémogrégarine, parasite de *Testudo mauritanica*. *T. c.* pp. 130 & 131.
315. —. Sur les Hématozoaires des Oiseaux d'Algérie. *T. c.* pp. 132 & 133. [See III. c.]
— [See also MESNIL (234).]
316. SHVEIER, A. V. Ueber den Bau und die Vermehrung der *Tintinnoidea* (Vorläufige Mittheilung). *Protok. St. Peterb. Obshch.* xxxv, i, pp. 158-160. [In Russian. Abstract in German. *T. c.* p. 264.]
317. SIDEBOTTOM, H. Report on the Recent Foraminifera from the Coast of the Island of Delos (Grecian Archipelago). *Mem. Manchester Soc.* xlviii, *Mem.* v, 26 pp., pls. 2-5, 10 text-figg.
318. SIEGEL, J. Beiträge zur Kenntniss des Vaccineerreger. *SB. Ak. Berlin* 1904, pp. 965-974, 13 text-figg.
319. SILVESTRI, A. Intorno ad una varietà della *Virgulina screibersiana* Czjczek. *Atti Acc. Pont. Lincei* lvii, pp. 22-27, 7 text-figg.
320. —. La forma microsferica della *Cyclammina cancellata*. *T. c.* pp. 180-185, 4 text-figg.
321. —. Forme nuove o poco conosciute di Protozoi miocenici piemontesi. *Atti Acc. Torino* xxxix, pp. 4-15, 7 text-figg.
Abstract in *J. R. Micr. Soc.* 1904, p. 313.
322. —. La *Sagrina nodosa* del Pliocene Senese. *Boll. Naturalista* xxiii, pp. 129-132, 2 text-figg.
323. —. Località Toscana del genere *Chapmania* Silv. et Prev. *Op. cit.* xxiv, pp. 117-119, 3 text-figg.
324. SKORIKOW, A. S. Ueber das Sommer-Plankton der Newa und aus einem Theile des Ladoga-Sees. *Biol. Centrbl.* xxiv, pp. 353-366, 385-391.

325. SMITH, J. C. A preliminary contribution to the Protozoan fauna of the Gulf Biologic Station, with notes on some rare species. 2nd Rep. Louisiana Gulf Biologic Station for 1903 (May, 1904), pp. 43-55.
Abstract in J. R. Mic. Soc. 1904, p. 537.
326. SNOW, J. W. The plankton Algæ of Lake Erie, with special reference to the Chlorophyceæ. Bull. U. S. Fish Comm. xxii, 1902 (publ. 1904), pp. 369-394, 4 pls.
327. SOULIÉ, H. Sur une Hémogregarine de *Psammodromus algirus*. C.R. Ac. Sci. cxxxix, pp. 371-373.
328. SOVINSKI, V. Introduction à l'étude de la faune du bassin marin Ponto-Aralo-Kaspien sous le point de vue d'une province zoogéographique indépendante. Zapiski Kiev. Obshch. xviii, pp. i-xiii, 1-487, 1-216. [In Russian.]
Lists of Protozoa, pp. 4-29 (2nd pagination).
329. SPANDEL, E. Die Foraminiferen des Permo-Carbon von Hooser, Kansas, Nord-Amerika. Festschr. Ges. Nurnberg 1901, pp. 175-194, 10 text-figg.
330. SPITZNER, V. Foraminifery (dirkonosci) v tretihornich jilech v okoli Prostejova u Pteni a Cech. Vestnik. Klub. Prostejove vi, pp. 142-145. [List of Foraminifera.]
SPLENDORE, A. [See LUTZ & SPLENDORE (212).]
331. STANTON, T. W. Note on the Cretaceous Fossils. (In "The Geology and Ore deposits of the Bisbee Quadrangle, Arizona.") Prof. Pap. U. S. Geol. Surv. xxi, pp. 70-73, pl. 16.
332. STATKEWITSCH, P. Zur Methodik der biologischen Untersuchungen über die Protisten. Arch. Protistenk. v, pp. 17-40.
333. —. Galvanotropismus und Galvanotaxis der Ciliata. Zeitschr. allg. Physiol. iv, pp. 296-332, 14 text-figg.
334. DE STEFANI, C. Su alcuni terreni eocenici della Dalmazia. Rend. Acc. Lincei xiii, 2, pp. 567-571.
Occurrence of *Nummulitidae*, and their value in determining strata.
335. DI STEFANO, G. Osservazioni geologiche nella Calabria settentrionale e nel Circondario di Rossano. Mem. Carta geol. Ital. ix (appendix), 1 pl. [Lists of Foraminifera occurring.]
336. STEMPELL, W. Ueber *Nosema anomalum* Monz. Arch. Protistenk. iv, pp. 1-42, pls. 1-3.
Abstract in Bull. Inst. Pasteur ii, p. 811.
337. —. Ueber die Entwicklung von *Nosema anomalum* Monz. (Vorläufige Mittheilung). Zool. Anz. xxvii, pp. 293-295, 5 text-figg. [Brief notice of (336).]
Abstract in J. R. Mic. Soc. 1904, p. 190.
338. STEPHENS, J. W. Sleeping-sickness. Nature lxix, pp. 345-347, 2 text-figg.
339. — & BOYCE, R. A parasitic disease in the haddock. Thompson Yates Lab. Rep. (5), ii, pp. 105-107, 2 pls. [Doubtfully of Protozoan nature.]
340. TEMPÈRE, J. Les Radiolaires, leur recherche et leur préparation. Microgr. prep. xii, pp. 109-113, pl. 14.
General account.

341. THEILER, A. Beitrag zur Frage der Immunität bei der Piroplasmosis des Hundes. (Vorläufige Mittheilung.) Centrbl. Bakter. (1) xxxvii, Orig. pp. 401-405.
342. THIROUX, —. Sur un nouveau Trypanosome des Oiseaux. C.R. Ac. Sci. cxxxix, pp. 145-148, 5 text-figg.
Abstract in Bull. Inst. Pasteur ii, p. 769.
343. THOMAS, H. W. & LINTON, S. F. A comparison of the animal reactions of the Trypanosomes of Uganda and Congo Free State Sleeping-Sickness with those of *Trypanosoma gambiense* Dutton. Lancet 1904, i, pp. 1337-1340.
TODD, J. L. [See DUTTON, TODD & CHRISTY (89).]
344. TREUTLEIN, —. Demonstration tropischer Krankheitserregender Protozoen. SB. Ges. Würzburg 1904, pp. 66-69. [General notes on Trypanosomes.]
345. TYZZER, E. The etiology and pathology of Vaccinia. Stud. Path. Etiol. Variola 1904 (Office J. Med. Research, Boston), pp. 180-229, pl. 23-26.
346. UCKE, A. Beobachtungen über Flagellaten in Faeces des Menschen. Centrbl. Bakter. (1) xxxiv, Ref. p. 772.
Occurrence of *Trichomonas intestinalis* and *Megastoma entericum* in an encysted condition.
347. VALLÉE, — & PANISSET, —. Sur les rapports du Surra et de la Mbori. C.R. Ac. Sci. cxxxix, pp. 901 & 902.
348. *VENEZIANI, A. Ueber die physiologische Einwirkung des Radiums auf die *Opalina ranarum*. (Vorläufige Mittheilung.) Centrbl. Physiol. xviii, pp. 130-134.
349. VERDUN, —. Procédé de coloration de l'amibe de la dysenterie et des abcès tropicaux du foie. C.R. Soc. Biol. lvi, pp. 181-183.
[See II. G. 2.]
350. —. Sur quelques caractères spécifiques de l'amibe de la dysenterie et des abcès tropicaux du foie (*Amœba coli* Loesch). T. c. pp. 183-185.
Abstract (of both) in Bull. Inst. Pasteur ii, p. 293.
351. VERWORN, M. Die Lokalisation der Athmung in der Zelle. Denk. Ges. Jena (Festschr. Haeck.) xi, pp. 561-569.
352. WALLENGREN, H. Zur Kenntniss der Galvanotaxis. II. Eine Analyse der Galvanotaxis bei *Spirostomum*. Zeitschr. allg. Physiol. ii (1903), pp. 516-555, 14 text-figg.
353. WALTHER, J. Die Fauna der Solnhofener Plattenkalke. Bionomisch betrachtet. Denk. Ges. Jena (Festschr. Haeck.) xi, pp. 133-214, pl. 8, 21 text-figg.
Occurrence of fossil Foraminifera mentioned, p. 161.
354. WEIGELT, C. L'assainissement et le repeuplement des rivières. Mem. Cour. Ac. Belgique (8vo), lxiv, 1903, 668 pp., 128 text-figg.
[See II. B. I, IV. A.]
355. WELCH, R. *Astrorhiza* on the Antrim Coast. Irish Natural. xiii, p. 27.
356. WESENBERG-LUND, C. Studier over de Danske Søers Plankton. (Special part.) Dansk. ferskvands-biologisk Lab. v, 1904, 223 pp., 8 charts, 10 photographic plates, 9 plankton tables. (Abstract in English, 44 pp.)

357. WEYSSE, A. W. A synoptic text-book of Zoology for colleges and schools. London and New York (Macmillan & Co.) 1904, pp. (xxx + 545), 425 text-figg. (Protozoa, pp. 19-50, 32 figg.)
358. —. *Amæbæ* for the Laboratory. Science, n. s. xx, p. 650.
[See II. G. 2.]
- WILLEY, A. [See CASTELLANI & WILLEY (63).]
359. —, CHALMERS, A. J. & PHILIP, W. M. Report on parasites in the carcasses of buffaloes at the Colombo slaughter house. Spolia Zeylan. ii, pp. 65-72, 2 figg.
[See IV. C. 2.]
360. WILSON, L. B. & CHOWNING, W. M. Studies in *Piroplasmosis hominis*. ("Spotted fever" or "Tick fever" of the Rocky Mountains.) J. infect. Diseases i, pp. 31-57, 2 pls.
Abstract in Bull. Inst. Pasteur ii, p. 258.
361. WOODCOCK, H. M. On Myxosporidia in Flat-Fish. P. Liverp. biol. Soc. xviii, pp. 126-142, pl. 2.
Abstracts in J. R. Micr. Soc. 1904, p. 661, and Bull. Inst. Pasteur ii, p. 427.
362. —. Note on a remarkable parasite of Plaice and Flounders. T. c. pp. 143-152, pl. 3.
Abstract in Bull. Inst. Pasteur ii, p. 426.
363. —. Notes on Sporozoa. 1. On *Klossiella muris* gen. et spec. nov., Smith and Johnson, 1902. Quart. J. Micr. Sci. xlviii, pp. 153-163, 2 text-figg.
Abstract in J. R. Micr. Soc. 1904, p. 660.
364. —. On *Cystobia irregularis* (Minch.) and allied "neogamous" Gregarines. (Preliminary note.) Arch. zool. exp. Notes (4) ii, pp. 125-128.
Abstracts in J. R. Micr. Soc. 1904, p. 536, and Bull. Inst. Pasteur ii, p. 904.
365. WORTH, H. R. The Foraminifera. Rep. Plymouth Inst. xiii (v), Trans. pp. 367-370 (1903). [Short popular account.]
366. —. Foraminifera. (In Plymouth Marine Invertebrate Fauna, pp. 155-298.) J. Mar. Biol. Ass. vii (ii), pp. 174-185.
367. WRIGHT, J. H. Protozoa in a case of tropical ulcer (Delhi sore). J. Med. Research, Boston x, 1903, pp. 472-482, 4 pls.
Abstracts in Centrbl. Bakter. (1) xxxv, Ref. p. 635 and Bull. Inst. Pasteur ii, p. 114.
- WURTZ, —. [See BRUMPT & WURTZ (51-53).]
- YUNG, —. [See D'ESPINE & YUNG (94).]
368. ZACHARIAS, O. Ueber die Komposition des Planktons in thüringischen, sächsischen und schlesischen Teichgewässern. Forschber. Plon xi, pp. 181-251, 7 text-figg.
Abstract in Zool. Zentrbl. xi, p. 175.
- ZEDERBAUER, E. [See BREHM & ZEDERBAUER (42).]
369. ZUELZER, M. Beiträge zur Kenntniss von *Diffugia urceolata* Carter. Arch. Protistenk. iv, pp. 240-295, pls. 10-12, 2 text-figg.
370. ZYKOFF, W. Ueber das Plankton des Flusses Seim. Zool. Anz. xxvii, pp. 214 & 215.
371. —. Das Plankton des Seliger Sees. T. c. pp. 388-394.

II. BIOLOGY.

A. MORPHOLOGY.

1. General Anatomy.

(a) *Gymnomyxa*:—

Description of *Chlamydomyxa montana*, PENARD (260).

Interesting new British Rhizopods described, CASH (60).

Detailed account of *Diffugia urceolata*, ZUELZER (369); general description of *Entamæba buccalis* n. sp., PROWAZEK (279).

Microspheric form of *Cyclamina cancellata* described, SILVESTRI (320); note on a variety of *Virgulina screibersiana*, id. (319); description of *Triticites*, a new genus of Foraminifera, GIRTY (120).

General account of the morphology of the Heliozoa, PENARD (262).

Full account of the structure of the *Aulacanthide*, IMMERMANN (148); of the *Acanthometrea*, POPOFSKY (270).

Note on the anatomy of *Gazelletta*, FOWLER (113).

(b) *Sporozoa*:—

Short account of new Sporozoa, *Gregarina marteli*, *Diplocystis clerici* and *Adelea transita*, LÉGER (189).

General description of: the form and structure of Gregarines, LÜHE (209); *Gregarina ovata*, PAEHLER (256); the trophozoites of *Urospora lagidis*, BRASIL (41).

Preliminary note on "neogamy" or precocious association in Gregarines (*Cystobia* and *Diplocystis*), WOODCOCK (364).

Short account of a new Coccidian, *Angeiocystis audouinia*, BRASIL (40).

Short account of: a new Hæmogregarine, *Hæmocystidium*, CASTELLANI & WILLEY (63); several new Hæmogregarines, BILLET (21-24), DUCLOUX (88) & NICOLLE (247-249); *Hæmogregarina mauritanica* n. sp., from a land tortoise, SERGENT (314).

Notes on: the parasite of tropical splenomegaly, Kala-Azar, etc. (*Piroplasma donovani*), BENTLEY (16), CHRISTOPHERS (74 & 75), DONOVAN (83) and LAVERAN & MESNIL (173); the Protozoan parasite (allied to *Piroplasma donovani*) causing Delhi boil, etc. in man, MESNIL, NICOLLE & REMLINGER (235), & WRIGHT (367).

Account of: *Thelohania legeri* n. sp., HESSE (140); *T. mænadis* n. sp., PÉREZ (263).

Description of a new type of Actinomyxidial, *Sphæractinomyxon stolci*, CAULLERY & MESNIL (64).

Further notes on *Joyeuxella toxoides*, BRASIL (41).

Note on a remarkable Sporozoan parasite, *Lymphocystis johnstonei* n. g., n. sp., WOODCOCK (362).

(c) *Mastigophora*:—

Full account of: the morphology and form-variety of *Trypanosoma (Halteridium) noctuæ*, and *Spirochæta* ("*Hæmamæba*," "*Leucocytozoon*") *ziemannii*, SCHAUDINN (301); certain parasitic Flagellates (*Trichomastix lacertæ*, *Bodo lacertæ*, and *Trichomonas lacertæ* n. sp.), PROWAZEK (278); *Herpetomonas muscæ-domesticæ*, id. (277).

Description of *H. subulata* n. sp., monadiform and gregariniform phases, LÉGER (186); *Trypanophis* (n. g. for *Trypanosoma grobbeni*), a very interesting form, KEYSSELITZ (156).

Important redescription of the morphology of *Trypanoplasma borreli*, LÉGER (180).

Account of: a new avian Trypanosome, *Trypanosoma paddæ*, LAVERAN & MESNIL (176) & THIROUX (342); new piscine ones, *T. abramis*, *T. danielowskyi* and *T. tinca*, LAVERAN & MESNIL (176); *T. inopinatum* n. sp.,

from the green frog, differing greatly from the Amphibian type, SERGENT (313); *T. nelspruitense* n. sp., LAVERAN (171); *T. barbatulae* n. sp., and *Trypanoplasma varium* n. sp., LÉGER (184 & 185).

Different forms of *T. dimorphon* Dutton & Todd, described, LAVERAN & MESNIL (174); notes on *T. equiperdum* of Dourine, LINGARD (204).

Reasons for considering the non-flagellate end of a Trypanosome the anterior one, GUIART (129).

Description of *Joenia annectens*, GRASSI & FOA (126).

Brief account of a new Flagellate, *Ocyglossa velox*, of remarkable body-form, GIARD (116).

(d) Ciliophora:—

General description of: two new Infusoria, *Anoplophrya brasili* and *Opalina saturnalis*, LÉGER & DUBOSCQ (193, brief account) & (194 & 195); the parasitic Infusoria *Discophrya gigantea* and *Opalina intestinalis*, COHN (77); *Anophrys echini* n. sp., DI MAURO (231); new *Opercularia*, FAURÉ (105); a new colony-forming Infusorian, *Opercularia clepsinis*, POPOW (271).

Account of a new Suctorian, *Astrophrya arenaria* n. g., n. sp., AVERINTZEV (6).

2. Minute structure of cell-organs.

(a) Membrane, test, shell:—

Structure of the test of *Diffugia urceolata*, ZUELZER (369).

Note on the structure of the shells of porcellanous Foraminifera, CHAPMAN (68).—Structural characters of the shell of floating Foraminifera, and its adaptation to this mode of life, KEMNA (155).

On the chemical nature of the so-called acanthin skeleton of the *Acanthometrea*, SCHEWIAKOFF (303).

Double nature of the envelope around *Hæmogregarina tunisiensis* in the encysted endoglobular condition, BILLET (21).

Nature of the enveloping shell or "house" in the *Vaginicolinae*, FAURÉ (104).

Arenaceous "house" of *Astrophrya*, a new Suctorian, AVERINTZEV (6).

(b) Nucleus and cytoplasm:—

Minute description of the cytological appearances and changes occurring during "alteration" and physiological degeneration in *Actinosphaerium*, HERTWIG (138).

Cytological details in *Dicercomonas muris*, FOA (109).—Details of cytological structure in *Trypanoplasma borreli*, LÉGER (181).—Minute structure of *Anoplophrya brasili* and *Opalina saturnalis*, LÉGER & DUBOSCQ (194 & 195).

Minute structure of karyoplasm and cytoplasm of *Vorticellidae*; proteid spherules ("tonoplasts") in endoplasm; ultimate nature of the cytoplasm, FAURÉ (96); further remarks on the nature and function of the tonoplasts in Ciliates, id. (97).

Minute structure of nucleus and cytoplasm in Gregarines; comparative account, LÜHE (209).—Nucleus and cytoplasm in *Gregarina ovata*, PAEHLER (256).—Occurrence of large irregular vegetative nuclei in the cysts of *Glugea anomala*, STEMPELL (336).

Nuclear structure and changes in a Trypanosome of the rabbit, BOSC (34). [The Rec. is sceptical about many of the appearances depicted, which are perhaps artifacts. The author's figg. are very unconvincing.]

Nuclear structure of *Discophrya gigantea* and *Opalina intestinalis*, COHN (77).—Nuclear apparatus of *Paramœcium*, MITROPHANOW (239); changes in same, CHAINSKY (67) & PETSCHENKO (267).

On the chromidia and chromidial apparatus of various Protozoa in relation to the nucleus, GOLDSCHMIDT (123).

Occurrence of nuclear changes in *Opalina ranarum* which are thought to represent the differentiation of a micro- (or sexual) nucleus, LOEWENTHAL (206).

Well-differentiated ectoplasmic layer in *Trypanophis*; little ectoplasmic cap and beak at the anterior end, KEYSSELITZ (156).

Structure and formation of the trichocysts in *Paramæcium*, MITROPHANOW (239).

On the discharge of the contractile vacuole in *Amæba terricola*, PENARD (261).—The excretory canals of *Discophrya*, COHN (77).

On the hydrostatic apparatus of the *Acanthometrea*, SCHEWIAKOFF (303).

Plastogamy in *Diffugia urceolata*; detailed account of the chromidial substance in this form, ZÜTZER (369).

(c) Organs of attachment and movement:—

Structure of the filamentous pseudopodia of *Chlamydomyxa montana*; distinction of the "travelling corpuscles" from the nuclei, PENARD (260).

Cuticular striations, muscle-fibrillæ, etc., in *Gregarina ovata*, PAEHLER (256).

The basal corpuscles of Infusoria (*Paramæcium*, *Carchesium*) are of mechanical importance as points of insertion or attachment of the vibratile organellæ, MITROPHANOW (238).

Structural details of the peristome and ciliary apparatus in *Tintinnus*, SHVEIER (316).

Intimate structure of the contractile and fixative apparatus of various Vorticellids, FAURÉ (95, 98, 99 & 101). In its highest development (*Vorticella* and *Carchesium*) the peduncle consists of a basal portion or "scopula," an external elastic sheath, and a central contractile axis; the latter is again differentiated into a central "spasmonema" of united myonemes, and an outer plasmic cord.

On the elastic thread in the stalk of *Vorticella*, BRANDES (39).

B. PHYSIOLOGY.

1. Nutrition, excretion, osmosis, etc.

On the rôle played by Protozoa in the purification of rivers, by feeding on organic material, Bacteria, etc., WEIGELT (354).

Prolonged functional activity and metabolic interchange in *Actinosphaerium*, brings on "depression" and ultimately physiological degeneration; analogy between the cellular reactions in such a case, and those resulting in malignant growths in Metazoa, HERTWIG (138).

Relations between general metabolism and the process of division in *Stentor*, and the different liquids (solutions of salts, infusions, etc.) in which the animals were maintained, PETERS (265).

Hunger-periods associated with conjugation in *Dileptus*, HERTWIG (139).

The trichocysts of *Paramæcium* function as an excretory apparatus, MITROPHANOW (239).

Investigations on *Spirostomum* lead to the conclusion that respiration goes on only in the cytoplasmic constituent of the cell, and not in the nucleus, VERWORN (351).

Adipogenic function in *Vorticella convallaria*; associated production of a pigment (lipochrome?) and abundant fat grains, and subsequent expulsion "en masse"; epidemic occurrence of this "*V. citrina*"-phase, FAURÉ (102).

2. Locomotion.

Remarks on the movement of Gregarines, LÜHE (209).

Locomotion in *Ocyglossa*, a new Flagellate, is principally by the con-

traction of a median, tongue-like, posterior prolongation of the body, GIARD (116).

Considerations with regard to the movement of *Trypanophis*, KEYSSELITZ (156).

3. Response to stimuli; effect of reagents.

Physiological experiments on *Trypanosoma brucei* and *T. equinum*; action of warmth, disinfectants, conservation-media, etc. on the parasites, JAKIMOFF (150).

Vitality of *T. granulosum* in human and other sera; destructive effect of water and other hypotonic liquids on the parasites, SABRAZÈS & MURATET (296).

Human serum has a slight action on the *T.* of horses in Gambia (*T. dimorphon*) but none on the human parasite (*T. gambiense*); arsenic acid exerts some influence on the latter, however, LAVERAN (164).

"Trypanroth" has little or no permanent effect on Trypanosomes, especially on *T. gambiense*, LAVERAN (166).

Cytoplasmic reactions of *Paramœcium* (as indicated by staining propensity) to chemotactic influences, BARRATT (10); effects of acids and bases on *P.*, id. (11).

Relation of the physical structure of the protoplasm in *Paramœcium* to the reactions of the organism towards thermal, chemical and electrical stimuli, GREELEY (127).

Effects of chemical and electrical stimuli on the myonemes of the hydrostatic apparatus in the *Acanthometrea*, SCHEWIAKOFF (303).

"Galvanotropism" (movement, or change in direction of movement, induced by electric current) and "galvanotaxis" (change of position, axial direction) in various Infusoria, STATKEWITSCH (333).

Galvanotaxis in *Spirostomum*; reactions of the Infusorian towards electric currents of different strengths, WALLENGREN (352).

Physiological effects of radium on various Protozoa (*Amœba*, *Nassula*, *Trypanosoma*), SALOMONSEN & DREYER (297).—Action of radium on *Opalina ranarum*, VENEZIANI (348).

Action of light-rays (mostly chemical) on Infusoria (*Paramœcium* and *Colpidium*), HERTEL (137).—The significance of pigment in light-perception by the Protozoan cell, HALBEN (133).

C. BIONOMICS.

1. Plankton.

Protozoan plankton (mostly Peridinida) collected in the North Atlantic (57°–60°), OSTENFELD & PAULSEN (255).—Atlantic plankton, Tripylaria, many n. spp., BORBERT (28).—Plankton distribution in the Atlantic: of the *Aulacanthida*, IMMERMANN (148); of the *Acanthometrea*, POPOFSKY (270).

Abundant occurrence of *Noctiluca miliaris*, forming a great shoal, off the Scilly Isles, BROWNE (45).—Tay Basin, Protozoan plankton occurring, mostly Peridinida, MURRAY (245 & 246).

Dinoflagellate plankton from Iceland, PAULSEN (258).—In plankton from North Sea and Skagerack, two new marine species of Heliozoa, OSTENFELD (254).—Protozoan plankton of Danish seas, WESENBERG-LUND (356).

Plankton from Ausgraben lakelets near Plön (Dinoflagellates), LEMMERMANN (198).—Protozoan plankton from various ponds and lakelets in Thuringia, Saxony, and elsewhere, ZACHARIAS (368).—*Ceratium hirundinella* in plankton, Alpine lakelets, BREHM & ZEDERBAUER (42).

Radiolarian plankton, Gulf of Capri, LO BIANCO (205).

Plankton from Quarnero (Hungary), chiefly Tintinnids, ENTZ (93).

Protozoan plankton from : river Seim (tributary of the Dnieper), ZYKOFF (370) ; Lake Selig (Gov. Tver), id. (371) ; the Neva and Lake Ladoga, SKORIKOW (324).

In plankton from the Volga (Woloshka), *Astrophrya*, a new Suctorian, AVERINTZEV (6).

Plankton from : Turkestan, Protozoa, listed, v. DADAY (79) ; River Murgab (Merv, Turkestan), Protozoa, MEISSNER (233).

Protozoan plankton collected on a voyage to and from Bombay, CLEVE (76).

In plankton, Lake Erie, a new *Chlamydomonas*, SNOW (326).

2. Parasitism, effects on host: relation to disease.

[For infection, transmission, see II. G. 1 ; and for hosts, III. c.]

Biological peculiarity of *Chlamydomyxa montana*. This organism, though itself no longer actually parasitic or saprophytic, always occurs in the putrid liquid around decaying and half-decomposed *Hypnum*-moss. PENARD (260) looks upon this habitat as reminiscent of an ancestral parasitic or saprophytic one.

Destruction of nucleus in *Amæba* by fungal parasite, GRUBER (128).

Gregarinosis:—

Relations between growing Gregarines and the intestinal host-cells, LÉGER & DUBOSCQ (192).

Relations between *Urospora lagidis*, in the trophic and sporulating phases, and the cœlomic phagocytes of its host, *Audouinia* ; healthy parasites appear quite uninjured by the phagocytes, BRASIL (41).

Coccidiosis:—

Harmful effects of *Diplocystis clerici* on its host, when strongly infected, LÉGER (189).—Attachment of *Doliocystis pellucida* to its intestinal host-cell, BRASIL (41).

Haemosporidiosis:—

Karyolysis of the blood-corpuscles brought about by *Hæmogregarina viperini* and *H. sergentium*, BILLET (22) & NICOLLE (248) ; relation of *H. curvirostris* to the nucleus of the corpuscle, BILLET (24).

The occurrence of paranuclear corpuscles in the hæmatids of tortoises infected with *Hæmogregarines* perhaps stands in relation with the presence of these parasites, even though not all the hæmatids exhibiting this karyolysis are actually parasitized, BILLET (25).

Piroplasmosis:—

The different piroplasmoses of cattle, with figures of the parasites (unspecified), DSCHUNKOWSKY & LUHS (86).

Canine piroplasmosis, general account, GALLI-VALERIO (115).—A study of canine piroplasmosis and the tick which conveys the disease, BOWHILL & LE DOUX (38), also NUTTALL (252).—On the immunization of dogs against *Piroplasma canis*, THEILER (341).

Can *Piroplasma bigeminum* live in the human blood ? Difficulty of distinguishing certain forms of this parasite from certain of those exhibited by the parasite of benign tertian malaria, LINGARD (203).

Good figures showing the relation of *Piroplasma donovani* to the leucocytes and blood-corpuscles are given by DONOVAN (83).—Minute forms of *P. d.*, free or endoglobular, in the peripheral circulation, LAVERAN & MESNIL (173).

“Leishman-Donovan” bodies (*Piroplasma donovani*) in persons suffering from tropical splenomegaly ; their relation to the splenic cells and leucocytes of the host ; nature of the “matrix” ; comparison with other *Piroplasmata* and involution forms of Trypanosomes, CASTELLANI (61), CHRISTOPHERS

(73-75), LEISHMAN (196), MANSON & LOW (219 & 220), and MARCHAND & LEDINGHAM (223).

Kala-Azar, general account of the disease and its parasite, RUATA (293).

Delhi boil, "bouton d'Alep," and like maladies caused by a Protozoan parasite ("*Helcosoma tropicum*, WRIGHT [367]); this parasite is almost certainly a *Piroplasma*, and closely allied to *P. donovani*, MESNIL, NICOLLE & REMLINGER (235).

Account of "spotted fever" or "tick-fever" of the Rockies; a true human piroplasmosis caused by *P. hominis* n. sp., WILSON & CHOWNING (360).

Trypanosomosis:—(BLANCHARD (27) maintains that the term *trypanosomosis* is the correct one to use for diseases due to Trypanosomes, for the following reasons:—(a) it has priority over all others, having been proposed by BRUMPT, 1901; (b) it is pure and not a latinized hybrid like *trypanosomiasis*; (c) it agrees with the nomenclature of all other Protozoan diseases. [The Recorder lays stress on this point, which he has consistently supported.]

Sleeping-sickness and other trypanosomoses (general review), D'ESPINE & YUNG (94).—Trypanosomes and sleeping-sickness, BRODEN (43 & 44), HODGES (142), and SAMBON (298).—Sleeping sickness, its parasite and transmissive agent, STEPHENS (338).—Human trypanosomosis; general account of the parasite, its relation to others, and the course of the disease, RUATA (292).—Trypanosomoses (including sleeping-sickness) and tse-tse flies, BLANCHARD (27).

Sleeping-sickness experimentally produced in many animals (e.g. mice, rats, guinea-pigs, rabbits, dogs, monkeys); the behaviour of the trypanosomes and their effect upon the hosts agrees with the observations of Dutton & Todd on the parasite of *T.*-fever; hence one and the same Trypanosome is concerned in both cases, BRUMPT & WURTZ (51-53).—Essentially similar pathogenic behaviour of *T. gambiense* Dutton and *T. ugandense* Castellani, LAVERAN (165).—The Trypanosome of sleeping-sickness in Uganda and Congo Free State identical with *T. gambiense*, DUTTON, TODD & CHRISTY (89), also THOMAS & LINTON (343).

The trypanosomosis known as Aino, occurring in Somaliland (Ogaden) is, BRUMPT (47) thinks, probably the same as Nagana.—A trypanosomosis of Dromedaries in Algeria allied to Mbori (Timbuctoo); effects of the parasites on different animals, SERGENT (311 & 312).—Trypanosomoses in French West Africa, LAVERAN (168).—Existence of an equine trypanosomosis (probably a distinct variety) in French Guinea, id. (169).—A trypanosomosis among cattle, horses, mules, donkeys in Mauritius, EDINGTON (91).—Trypanosomosis in a rabbit, PETRIE (266).

The trypanosomes of Surra and Mbori appear to be identical and animals immunized against the one disease are immune to the other, VALLÉE & PANISSET (347).

Nagana-infection (*T. brucei*) in the guinea-pig, MARKL (225).—Nagana and *T. brucei*, full account of, SCHILLING (304).

Infection of rats and mice with *T. equiperdum* of Dourine; remarks on Algerian trypanosomoses, ROUGET (291).—The lesions of Dourine and the relation of the parasite (*T. equiperdum*) to them, LINGARD (204).

Effects of *T. dimorphon* on horses, LAVERAN & MESNIL (174).

T. theileri (?) in cattle in German East Africa, PANSE (257).

Immunity of *Cynocephalidae* against various trypanosomoses; activity of their serum on the parasites, LAVERAN (167).

Detailed account of the relation between *Trypanosoma noctuæ* and the cells and tissues of its hosts, both Avian and Insectan; endoglobular phases; also for *Spirochæta ziemanni*, SCHAUDINN (301).—*T. inopinatum* certainly penetrates the red blood corpuscles of the frog, becoming endo-

globular, BILLET (26).—Observations pointing to an endoglobular phase in the life-history of a Trypanosome (not unlike *Piroplasma donovani*), MOORE (243).

Myxosporidiosis:—

Thelohania mænadis does not appear to injure to any extent the infected *Carcinus*, though the host's muscles may be infested with it, PEREZ (263).

Severe epidemics of "Drehkrankheit" (characterized by spasmodic irregular movement) in young rainbow-trout, due to *Lentospora cerebralis*; relation of the parasites to the host's tissue [see also III. c.], PLEHN (269).

Relation between the host's tissue and the parasitic invasion in the case of *Glugea stephani*; "pseudocysts" the result of a condition of diffuse infiltration, WOODCOCK (361).

Protozoa and other diseases:—

The development of the Amœba of tropical dysentery (*Entamoeba histolytica*) shews that it is distinct from *E. coli*, LESAGE (202).—*Amœba coli* and its relation to so-called tropical dysentery and hepatic abscess, VERDUN (350).—Amœbic dysentery in Ceylon, CASTELLANI (62).

Cysts of *Trichomonas intestinalis* and *Megastoma entericum* in human faeces, UCKE (346).

Cytoryctes variolæ certainly seems to be the cause of small-pox; relation of the parasite to the cells and nuclei of the lesions in this disease fully described, CALKINS (58).—The "vaccine" bodies are phases of an organism very closely allied to *Cytoryctes variolæ* if not identical; the difference between the effects in the two cases (small-pox and vaccinia) is apparently due to the fact that in the latter the parasite does not become intranuclear, TYZZER (345).

Inoculation of Monkeys (*Rhœsus* and *Macacus*) with small-pox virus; occurrence of different forms of the parasite (*Cytoryctes*) which are described, MAGRATH & BRINCKERHOFF (218).

Photomicrographs of the small-pox parasite, shewing its relation to the cells and nuclei, COUNCILMAN, MAGRATH & BRINCKERHOFF (78).

The supposed Protozoan parasite of vaccinia (cow-pox and horse-pox)—[most unsuitably termed "*Plasmodium*" *vaccinæ*]*—*and its relation to the malady discussed, BOSC (32 & 33).

DE KORTÉ (161) describes what he considers as the Protozoan parasite of small-pox and vaccinia, terming it "*Amœba variolæ*."

SEIGEL (318) considers the cause of vaccinia to be a peculiar spore-forming parasite of Sporozoan affinity, readily found in the kidney-tissue.

BOSC (29-31) maintains the parasitic nature of the inclusions in cancerous cells, regarding them as Protozoa. He compares these organisms [?] with the bodies he has found in "clavelée," small-pox, vaccinia, etc.

SCHUBERG (308) points out that Feinberg [Zool. Rec. 1903 (109)] has mistaken for "intestinal cysts filled with *Coccidia*" what are really *Cysticerci* of a tape-worm! It would follow, therefore, that much reliance cannot be placed upon the Protozoan nature of his cancer-inclusions.

The "one and only true cancer parasite" has again revealed itself, this time to SCHÜLLER (310), who regards it as a Protozoan and gives numerous unconvincing figures of it.

According to LUZZANI (214) a Protozoan parasite has been observed in a case of hydrophobia, and is considered to be the cause.

D. REPRODUCTION.

Comparative review of the different modes of reproduction in the Protozoa, and their classification, HARTMANN (135).

1. Asexual: fission, schizogony, etc.

Schizogony in *Adelea transita* n. sp., LÉGER (189).—Schizogony of *Klossiella* described and compared with that of *Caryotropha mesnili*, WOODCOCK (363).

Schizogony of: *Hæmogregarina biretorta*, NICOLLE (249); *H. mauritanica* n. sp., 8 merozoites being formed, SERGENT (314).

Meronts and merogony in *Thelohania legeri*, HESSE (141).—Schizogonous multiplication in *T. mænadis* n. sp., PEREZ (263).

Asexual multiplication (binary fission and multiple rosette-formation) in *Herpetomonas muscæ-domesticeæ*, PROWAZEK (277).—Multiplication by longitudinal fission of *H. subulata*, LÉGER (186).—Process of division described: in *Joenia annectens*, GRASSI & FOA (126); in *Trichonympha agilis*, FOA (110).—Multiplication of *Trypanosoma granulosum* by unequal division, SABRAZÈS & MURATET (295).

Fission in *Anophrys echini* n. sp., DI MAURO (231).—Division in *Discophrya* and *Opalina intestinalis*, COHN (77).

2. Sexual: gametes and conjugation.

On the general significance of conjugation, CALKINS (56).—Notes on conjugation ("exogamy") in certain Protozoa, HARTOG (136).

"Association" and conjugation in *Diffugia urceolata*, ZÜLZER (369).—Evidences pointing to sexual (*Pelomyxa*-) forms in the life-history of *Amœba proteus*, CALKINS (57).

Formation of gametes (sporoblasts) in *Gregarina ovata*, PAEHLER (256).—Markedly anisogamous conjugation in *Stylorhynchus*; certain very motile, spermatozoon-like, male elements are sterile and have acquired a subsidiary function, LÉGER (188).

Two types of form (micro- and megagametocytes?) and multiplication (micro- and megagamete-formation?) in *Joyeuxella*, BRASIL (41). [These two types of multiplication seem to the Recorder to possess a certain agreement with what occurs in *Schaudinnella* (Nusbaum, Zool. Rec. 1903 [282]) and suggest that the affinities of *J.* may be sought in that direction.]

Micro- and megagametocytes in *Adelea transita*, LÉGER (189); (association observed but not actual gamete-formation).—Micro- and megagametocytes and microgametes of *Angeiocystis*, a new Coccidian, described, BRASIL (40).

Distinction of male and female forms (gametocytes) in "*Leucocytozoon*" *danilewskyi*, BERESTNEFF (18).

Important account of the sexual process in certain parasitic Flagellates; autogamy (or self-fertilization) in *Trichomastix*, and heterogamy (true sexual conjugation) as well as autogamy in *Bodo*; comparison with the heterogamy of *Trichomonas*, PROWAZEK (278).—Sexual processes (fertilization, "etho-genesis" or male autogamy, and parthenogenesis) in *Herpetomonas muscæ-domesticeæ*, id. (277).

True conjugation in *Trypanosoma noctuæ* and *Spirochaeta ziemanni*, taking place in the gnat, described, SCHAUDINN (301).

Note on conjugation in *Dileptus gigas*, HERTWIG (139).—Conjugation in *Paramœcium bursaria* described, HAMBURGER (134).

3. Nuclear division: directive centres, etc.

Description of nuclear division in *Amœba proteus*, AVERINTZEV (7).—Nuclear changes, fragmentation, and the significance of the multinucleate condition in *Amœba proteus*, CALKINS (57).—Behaviour of the nuclei and chromidial substance during conjugation and also during encystment in *Diffugia urceolata*, ZÜLZER (369).

Nuclear changes during sporoblast-formation in *Gregarina ovata*; curious "maturation"-process, PAEHLER (256).—Nuclear changes and multiplication during sexual reproduction in *Stylorhynchus*; the nuclei are dis-

tinguishable into somatic and germinal (sexual) nuclei, the former of which take no part in gamete-formation; karyokinetic division, LÉGER (188).—Nuclear multiplication in sporulating cysts of *Urospora*, BRASIL (41).

Nuclear multiplication and behaviour of the chromatin in *Thelohania maenadis*, PEREZ (263).

Nuclear behaviour during the various phases of the life-history of *Herpetomonas muscae-domestice*, PROWAZEK (277).—Nuclear differentiation, reduction, and fission in *Trichomastix* and *Bodo*, PROWAZEK (278).

Nuclear complexity and differentiation in *Trypanosoma noctue* and *Spirocheta ziemanni*; the so-called "blepharoplast" is more than a centrosome—a kinetic nucleus of equal functional importance with the larger or trophic nucleus, SCHAUDINN (301).

Nuclear changes during conjugation in *Opalina intestinalis*; comparison in this respect with other ciliates, COHN (77).—Nuclear multiplication in *O. saturnalis*, LÉGER & DUBOSCQ (194).—Nuclear maturation or purification during division in *Opercularia stenostoma* associated with "recuperation," FAURÉ (103).

E. DEVELOPMENT; LIFE-CYCLE.

Encystment, and formation of little flagellate embryos, in *Chlamydomyxa montana*, PENARD (260).

Encystment in *Diffugia urceolata* follows after conjugation; it is not merely protective or for resting-purposes, but plays an important part in further development, ZÜLZER (369).

Development and growth of various intestinal Gregarines of Tracheates; different types of development, LÉGER & DUBOSCQ (192).—Comprehensive comparative account of the growth and development of Gregarines from the sporozoite-stage, LÜHE (209).

Cysts and spores of *Diplocystis clerci* n. sp., LÉGER (189).—Development and growth of the young individuals in *Gregarina ovata* from sporozoites, PAEHLER (256).—Spores and sporozoites of *Urospora lugidis*, BRASIL (41).

Development of oocysts and spores in *Adelea transita*, LÉGER (189).—Oocysts, spores, and sporozoites of *Angeiocystis* n. g., BRASIL (40).

Ookinetes of *Hemogregarina bagensis* observed in *Placobdella catenigera* with two nuclear bodies, one much resembling the "centrosome" of a Trypanosome, BRUMPT (48).

Development of the different forms of *Trypanosoma noctue* and *Spirocheta ziemanni* from different types of ookinete; complex life-history, a true Hæmosporidian (*Halteridium*) phase alternating with the Trypanosome phase, SCHAUDINN (301).

Further evolution of *Trypanosoma barbatulae* in *Piscicola*, along the lines revealed by Schaudinn, and, similarly, of *Trypanoplasma varium* in *Hemiclepsis*, described by LÉGER (184 & 185).

Evidence pointing to ontogenetic relationship between *T. inopinatum* and a *Drepanidium* of the green frog, which probably both represent phases in one complete life-cycle; forms transitional between "sporozoites" [probably merozoites] and *Spirocheta*-like Trypanosomes, BILLET (26).—Important experiments tending to prove that the *Trypanosoma*, in a leech, gives rise to the *Drepanidium*, in the frog, id. (20).

Development of a flagellate (Trypanosome) phase in the splenic parasites of Kala-azar (*Piroplasma donovani*), ROGERS (286).

Notes on pansporoblasts and spores of various *Microsporidia*, LUTZ & SPLENDORE (213).—Development and growth of the cyst, "sporonts" [pansporoblasts] and spores in *Glugea anomala*, STEMPFEL (336).—Cysts and spores of *G. stephani*, WOODCOCK (361).—Sporonts and development of spores in *Thelohania legeri*, HESSE (141).

Formation and development of the cyst, spores, and sporozoites in

Sphaeractinomyxon n. g., CAULLERY & MESNIL (64); in *Triactinomyxon* LÉGER (182).

Detailed account of the complicated life-history of *Cytoryctes variolæ*, CALKINS (58).

Cyst-formation, development, and life-history of *Herpetomonas muscæ-domesticæ*, PROWAZEK (277).—Life-cycle of *Trichomastix* and *Bodo lacertæ* (particularly complex in this form) described, id. (278).

Varieties of encystment in the *Opalina*, LÉGER & DUBOSCQ (193 & 195).

F. GROUP RELATIONSHIPS; CLASSIFICATORY CHANGES.

Chlamydomyxa is to be placed in the Mycetozoa, being probably allied to the *Mycetozoidæ* (*Euplasmodidæ*), PENARD (260).

POPOFSKY (270) considerably amplifies the classification of the *Acanthometrea*, introducing especially several new families and sub-genera.

Relationship of the Actinomyxidia to the Myxosporidia, CAULLERY & MESNIL (65) & LÉGER (183).

CALKINS (58) creates the family *Cytoryctidæ* for *Cytoryctes*, *Caryoryctes* n. g., and *Lymphosporidium*, which he places in the sub-order *Microsporidia*, though with reservations. [The Recorder fails to see much resemblance between these forms and a typical Microsporidian. Considering, for one thing, the very different character of the nucleus (of the "distributed" type in his family), it seems much better to leave these forms in the Serosporidia, where, indeed, *Lymphosporidium* has been hitherto placed.]

On the affinities of *Trypanoplasma* and *Trypanosoma* and the derivation of the latter, LÉGER (181).

Affinities of Trypanosomes with the flagellum morphologically anterior (type *T. noctuæ*, after Schaudinn) with Herpetomonads, LÉGER (187).

The *Astomata* so-called do not represent a natural group; the *Opalina* are very different from the other members and should be placed in a distinct family, LÉGER & DUBOSCQ (193).

Basing his views on a comparative study of the fixative apparatus of *Vorticellidæ*, FAURÉ (100) derives the Discotricha (or Peritricha) directly from the Holotricha, through forms like *Scyphidia* and *Hemispeira*, which are to be regarded as primitive. This has more in its favour than a Hypotrichous origin through the *Urceolaridæ*.

G. MISCELLANEA.

1. Cultivation and infection.

Artificial cultivation of the Amœba of tropical dysentery, LESAGE (202).

On the artificial cultivation of Trypanosomes, ANON. (4); on the artificial cultivation of *Trypanosoma brucei*, NOVY & McNEAL (251).

Culture media for Infusoria, STATKEWITSCH (332).

Piroplasma hominis is conveyed by a tick, *Dermacentor reticulatus*, WILSON & CHOWNING (360).

Transmission of *Trypanosoma noctuæ* and *Spirochæta ziemanni* by the gnat *Culex*, which is a true alternate host; hereditary infection of the same, SCHAUDINN (301).

After his investigations on leeches as the alternate hosts of piscine Trypanosomes and Hæmogregarines, BRUMPT (49) is fully convinced that the *Glossinæ* are true alternate hosts of mammalian Trypanosomes.

White rats found naturally infected with *T. lewisi*; infection undoubtedly conveyed by fleas or lice, LAVERAN & MESNIL (175).

Probably a mosquito transmits *Trypanosoma equinum* from the native host (*Hydrochærus*) to domestic animals, at the hour of drinking, ELMASSIAN & MIGONE (92).

In *Hemiclepsis marginata* infected with Trypanosomes, the ova and embryos are not parasitized. Hence BRUMPT (48) concludes that hereditary infection does not occur in this case.

Hereditary (ovarian) infection of the common house-fly with *Herpetomonas muscae-domestice*, PROWAZEK (277).

2. Technique.

Description of Steenstrup's apparatus for collecting plankton, OSTENFELD & PAULSEN (255).

On a method of obtaining *Amæbæ* for the laboratory, WEYSSE (358).

On the preparation of Foraminifera, MARPMANN (226).—On a method of taking internal casts of Foraminifera, QUILTER (280).

Effect of media of different consistency in hindering and limiting the movement of Infusoria, STATKEWITSCH (332).

On a method of fixing Infusoria (*Vorticella*, *Carchesium*) nicely expanded, DE BEAUCHAMP (15).

A method of demonstrating the external discharge of the contractile vacuole in *Paramœcium* and other Infusorians, JENNINGS (151).

On the "neutrophile" staining character of Protozoan nuclei, MARINO (224).

Laveran's Borrel-blue method used as a stain for dysenteric *Amæbæ*, VERDUN (349).—Simplification and improvement of his methylene-blue-eosin stain for Hæmatozoa, GIEMSA (117).—On a modification of Romanowsky's stain which will stain Trypanosomes, etc., in sections, LEISHMAN (197).

3. Bibliography, etc.

Protozoan bibliography for 1903, with abstracts of several papers, MAYER (232).

List of Protozoan literature for 1904 (1st part), SCHAUDINN (302).

Protozoan bibliography for 1901, ANON. (1).

Useful bibliography of the Gregarines, LÜHE (209).

Changes in nomenclature for the different types of Protozoan reproduction suggested, HARTMANN (135).

ROSS & BOYCE (290) maintain that Forde and Dutton first discovered the human Trypanosome.

III. DISTRIBUTION.

A. GEOGRAPHICAL.

Distribution (geographical and bathymetrical) of the *Tripylaria* found by the German Deep-Sea Expedition ("Valdivia"), HÄCKER (132).

Europe:—England (Cheshire and Essex), new *Rhizopods*, CASH (60).

Plymouth Sound and neighbourhood, list of Foraminifera occurring in, WORTH (366).

Lough Larne district, Foraminifera from, including *Bulima elongata* new to British seas, GOUGH (124).

Coast of Antrim, off Rathlin Island, an unusually large specimen of *Astrorhiza*, WELCH (355).

Belgian coast, Foraminifera, GILSON (118).

Ambleteuse (Pas-de-Calais), from diatomaceous sand, *Ocyglossa velox*, a new Flagellate, GIARD (116).

Lagos, and Southern Portugal, marine Foraminifera from, NOBRE (250).

Lake of Geneva and neighbourhood, new *Rhizopods*, PENARD (259); Heliozoa, id. (262).

Various Italian Alpine lakelets, Protozoa from, MONTI (242).

Coast around Delos (Grecian Archipelago), Foraminifera, SIDEBOTTOM (317).

Asia:—Malay Archipelago, Foraminifera, MILLETT (236 & 237).

Seas around Japan, list of *Ceratia* from, OKAMURA & NISHIKAWA (253).

Australasia:—Australia, Foraminifera from, JENSEN (153).

New Zealand, complete list of Protozoan fauna of, HUTTON (147).

America:—Gulf of Mexico, Biological Station, Protozoan fauna from neighbourhood of, SMITH (325).

B. GEOLOGICAL.

Quaternary:—Post-glacial beds, Altcar, Lancs., Foraminifera, READE (282).

Glacial sands, Malone (Belfast), Foraminifera from, GOUGH (125).

Tertiary:—Miocene, Italy, distribution of *Textularidae* in, FORNASINI (112).

Miocene, Piedmont, new Foraminifera, SILVESTRI (321).

Miocene, Maryland, Foraminifera, BAGG (9); Radiolaria, MARTIN (228).

Miocene (?), Andalusia (Guadalquivir), Foraminifera (*Lepidocyclina* and *Discospirina*), DOUVILLÉ (84).

Tertiary (Miocene?) Wels, Austria, Foraminifera, SCHUBERT (309).

Upper Eocene and Oligocene, Brown's Creek, Victoria, Foraminifera, CHAPMAN (71).

Eocene, Maritime Alps and Pyrenees, *Orbitoidea*, many n. spp., SCHLUMBERGER (305).

Eocene, S. Genesio (Turin), Foraminifera, LEARDI (177 & 178).

Eocene, Mt. Judica and district of Catenanuova (Catania), Foraminifera, CHECCHIA-RISPOLI (72).

Middle Eocene, Dardanelles, *Nummulites* from, HOLLAND (145).

Eocene (*Nummulites*-chalk), Austria, various *Nummulitidae* and *Orbitoidea*, PREVER & RZEHA (276).

Eocene ("Flysch"), Montenegro, Foraminifera, mostly *Nummulitidae*, MARTELLI (227).

Tertiary, table of comparative distribution of the chief forms of *Nummulites* sens. lat. in, PREVER (275).

Tertiary, Valley of the Guadalquivir, *Nummulitidae*, CALDERON (55).

Early Tertiary limestones, Batjan and Obi (Malay Archipelago), occurrence of Foraminifera, MARTIN (229).

Tertiary, Saratow (region of Volga), *Nodosaria raphanistrum*, ARKHANGELSKII (5).

Secondary:—Cretaceous to Miocene, Galicia, Foraminifera, listed, FRIEDBERG (114).

Upper Cretaceous, England, Foraminifera, JUKES-BROWNE (154).

Cretaceous, Eastern Bohemia, Foraminifera, JAHN (149).

Cretaceous, Bisbee, Arizona, *Orbitolina texana*, STANTON (331).

Cretaceous, Pondoland, South Africa, Foraminifera, CHAPMAN (69).

Lower Cretaceous, Spain, new *Orbitoides* and *Orthophragmina*, PREVER (272).

Jurassic (lower Oolite), W. Australia, Foraminifera, CHAPMAN (70).

Jurassic, Memel (Königsberg), Foraminifera, BRÜCKMANN (46).

Primary:—Coal measures, Mississippi Valley, *Triticites*, a new Foraminiferan, GIRTY (120).

Coal-measures, in the pollen chambers of *Stephanospermum*, Infusoria allied to *Cinetoconia*, RENAULT (284).

Carboniferous limestone, Bisbee, Arizona, *Fusulina cylindrica*, GIRTY (121).

Carboniferous, Colorado, *Fusulina cylindrica*, GIRTY (122).

Permo-Carboniferous, Kansas, Foraminifera, SPANDEL (329).

C. PARASITIC (including commensalism).

Algae:—In the cells of *Valonia* (one of the Siphonæ), *Nassula* sp., KÜSTER (162).

Protozoa:—In *Amœba viridis*, nucleus, a Fungus, GRUBER (128).

In *Paramœcium caudatum*, meganucleus, *Caryoryctes cytoryctoides* n. g., n. sp., CALKINS (58).

Echinodermata:—In *Cucumaria pentactes* and *C. planci*, respiratory trees and celome, *Cystobia minchinii* n. sp., WOODCOCK (364).

In *Sphærechinus granularis* and *Strongylocentrotus lividus*, intestine, *Anophrys echini* n. sp., DI MAURO (231).

Chaetopoda:—In *Audouinia tentaculata*, "cardiac body," *Angeiocystis audouinii* n. g., n. sp., BRASIL (40); in *A. t.*, intestine, *Anoplophrya brasili* n. sp., LÉGER & DUBOSCQ (193).

In marine *Tubificidæ* (*Clitellio arenarius* and *Hemitubifex benedii*), intestine, *Sphaeractinomyzon stolci* n. g., n. sp., CAULLERY & MESNIL (64).

In *Tubifex tubifex*, chloragogenous cells, a Sporozoan unidentified (either a Coccidian or a Gregarine), LÉGER (183).

Hirudinea:—In digestive tube of various Hirudinea parasitic on fishes (*Placobdella soleæ*, *P. scorpii*, *Branchellion torpedinis*, *Trachelobdella lubrica*), bodies very like ookinetes of *Hæmogregarines*, BRUMPT (48).

Ectoparasitic on *Clepsine bioculata*, *Opercularia clepsinis* n. sp., POW (271).

In *Helobdella algira*, digestive tube, *T. inopinatum*, BILLET (20).

In *Hemiclepsis marginata*, digestive tube, *Trypanoplasma varium* n. sp., LÉGER (185); in *H. m.* (ectoparasitic on fish), digestive tube, small, active Trypanosomes, BRUMPT (48).

In *Placobdella catenigera*, digestive tube, *Hæmogregarina bagensis*, BRUMPT (48).

In *Piscicola* sp., digestive tube, *Trypanosoma barbatulæ* n. sp., LÉGER (184).

Crustacea:—In *Carcinus mœnas*, musculature, *Thelohania mœnadis* n. sp., PEREZ (263).

Myriapoda:—In *Chordeuma sylvestre*, intestine, *Stenophora chordeumæ* n. sp., LÉGER & DUBOSCQ (192).

In *Craspedosoma rawlinii simile*, intestine, *Stenophora aculeata* n. sp., LÉGER & DUBOSCQ (192).

In intestine of *Julus albipes*, *J. londinensis*, *Schizophyllum mediterraneum* and *S. sabulosum*, *Stenophora juli*, LÉGER & DUBOSCQ (192).

In *Lysiopetalum fetidissimum*, intestine, *Stenophora silene* n. sp., LÉGER & DUBOSCQ (192).

In *Pachygyulus varius*, intestine, *Stenophora producta* n. sp., LÉGER & DUBOSCQ (192).

Insecta:—In the following Lepidoptera, new *Glugeidæ*, viz.: *Halesidotis* sp.,—*Glugea halesidotis*, *Cæculia* sp.,—*G. cæculia*, *Hydria* sp.,—*G. hydria*, *Heliotis armigera*—*G. heliotidis*, *Micrattacus nana*—*G. micrattaci*, LUTZ & SPLENDRE (213).

In *Anopheles maculipennis* (larvæ), fat bodies only, *Thelohania legeri* n. sp., HESSE (140).

In *Embia solieri*, intestine, *Gregarina marteli* n. sp., body cavity, *Diplocystis clerici* n. sp., and *Adelea transita* n. sp., LÉGER (190 & 189).

In *Olocrates gibbus*, intestine, *Stylorhynchus oblongatus*, LÉGER (188).

In *Periplaneta orientalis*, cœlome, *Diplocystis schneideri*, WOODCOCK (364).

In *Sarcophaga hæmorrhoidalis*, digestive tube, *Herpetomonas sarcophagæ* n. sp., PROWAZEK (277).

In *Scaurus tristis*, intestine, *Stylorhynchus longicollis*, LÉGER (188).

In *Tabanus glaucopis* (probably also in *Hæmatopota italica*), digestive tube, *Herpetomonas subulata* n. sp., LÉGER (186).

Pisces:—In blood of marine Teleosteans, new Hæmatozoa, as follows: *Platessa vulgaris*—*Trypanosoma platessæ* and *Hæmogregarina p.*, *Flesus vulgaris*—*T. flesi* and *H. f.*, *Platophrys laterna*—*T. laternæ* and *H. l.*, LEBAILLY (179); also in *Blennius pholis*—*T. delagei*, *Callionymus dracunculus*—*T. callionymæ*, *H. c.* and *H. quadrigemina*, *Cottus bubalis*—*T. cotti* and *H. c.*, *Gobius niger*—*T. gobii*, *H. g.* and *H. blanchardi*, *Limanda platesoides*—*T. limandæ*, BRUMPT & LEBAILLY (50).

In *Box boops*, rectum, *Opalina saturnalis* n. sp., LÉGER & DUBOSCQ (193).

In blood of: bream, *Trypanosoma abramis* n. sp.; carp, *T. danilewskyi* n. sp.; *Tinca tinca*, *T. tincæ* n. sp., LAVERAN & MESNIL (176).

In carp, blood, *Trypanosoma danilewskyi*, LAVERAN (172).

In *Cobitis barbatula*, blood, *Trypanosoma barbatulæ* n. sp., and *Trypanoplasma varium* n. sp., LÉGER (184 & 185).

In *Phoxinus lævis* (minnow), blood, *Trypanoplasma borreli*, LÉGER (180)

In plaice and flounders, lymph channels (dermal and mesenteric) *Lymphocystis johnstonei* n. g., n. sp., WOODCOCK (362).

In *Pleuronectes platessa*, gut-wall, *Glugea stephani*; otic capsule, *Sphærospora platessæ* n. sp., WOODCOCK (361).

In *Pseudopleuronectes americanus* (winter-flounder), gut-wall, *Glugea stephani*, WOODCOCK (361).

In *Rhombus triacanthus* (butter-fish), liver, *Pleistophora* sp., WOODCOCK (361).

In rainbow-trout, skeletal and connective tissue, principally of the head region (auditory organ), but not the brain itself, *Lentospora* (nom. nov.) *cerebralis*, PLEHN (269).

Amphibia:—In *Rana esculenta*, blood, *Trypanosoma inopinatum* n. sp., SERGENT (313).

In the blood of a frog (undetermined), *Trypanosoma nelspruitense* n. sp., LAVERAN (171).

Reptilia:—In *Bufo mauritanicus*, blood, *Hæmogregarina tunisiensis* n. sp., NICOLLE (247).

In *Emys leprosa*, blood, *Hæmogregarina bagensis* n. sp., DUCLOUX (88).

In *Gongylus ocellatus*, blood, *H. sergentium* n. sp., NICOLLE (248).

In *Hemidactylus leschenaultii* (a gecko), blood, *Hæmocystidium simondi* n. g., n. sp., CASTELLANI & WILLEY (63).

In *Lacerta muralis*, cloaca and rectum, *Trichomonas lacertæ* n. sp., PROWAZEK (278); in *L. ocellata*, blood, *Hæmogregarina curvirostris* n. sp., BILLET (24), and *H. biretorta* n. sp., NICOLLE (249).

In *Nicoria trijuga* (a tortoise), blood, *Hæmogregarina nicoriæ* n. sp., CASTELLANI & WILLEY (63).

In *Psammodromus algirus*, blood, *H. psammodromi* n. sp., SOULIÉ (327).

In *Testudo mauritanica*, blood, *H. mauritanica* n. sp., SERGENT (314).

In *Tropidonotus piscator*, blood, *H. mirabilis* n. sp., CASTELLANI & WILLEY (63).

In *Tropidonotus viperinus*, blood, *H. viperini* n. sp., BILLET (22).

Aves:—Occurrence of "*Hæmamæbæ*" and Trypanosomes in the blood of various Algerian birds, and their relative abundance, SERGENT (315).

In *Padda oryzivora*, blood, *Trypanosoma paddæ* n. sp., LAVERAN & MESNIL (176).

In *Scops bakkamæna* (an owl), blood, *Halteridium danilewskyi*, CASTELLANI & WILLEY (63).

Mammalia:—In *Mus musculus*, intestine, *Dicercomonas muris* and *D. intestinalis*, FOA (109).

In white rats, blood, *Trypanosoma lewisi*, LAVERAN & MESNIL (175).

In the rat, intestine, *Octomitus intestinalis* n. sp., PROWAZEK (278).

In a rabbit, blood, a Trypanosome, PETRIE (266).

In man, blood (free and endoglobular), *Piroplasma hominis* n. sp., WILSON & CHOWNING (360); (probably *Spermophilus columbianus*, in whose blood the parasites also occur, is the "natural" vertebrate host).

In buccal cavity of man, in relation with the teeth (caries, cement), *Entamæba buccalis* n. sp., PROWAZEK (279).

IV. SYSTEMATIC.

[Note. Only new forms, forms whose occurrence is of special interest, and forms described and figured are mentioned specifically.]

A. PROTOZOA IN GENERAL.

[For lists of Protozoa from various localities, see under Plankton (II. c. 1) and Distribution (III. A.).]

Protozoa, their rôle in purifying rivers, WEIGELT (354) pp. 507-514, with figg. 57-77 illustrative of different forms.

B. GYMNOXYXA.

1. MYCETOZOA.

(a) Protomyxidea:—

Biomyxa vagans, note on occurrence, SMITH (325) p. 48.

Vampyrella flabellata n. sp., occurrence and description, CASH (60) p. 224, pl. xxvi, figg. 5 & 6.

(b) Mycetozoidea:—

Allied to Mycetozoidea.

Chlamydomyxa montana, general account of, PENARD (260) pp. 296-334, 19 text-figg.

2. RHIZOPODA.

(a) Lobosa:—

Amœba coli, of so-called tropical dysentery, specific characters described, VERDUN (350) pp. 184 & 185; *A. dumetosa* n. sp., p. 392, 6 text-figg., *A. pulverulenta* n. sp., p. 395, 4 text-figg., occurrence and diagnoses, PENARD (259); *A. pilosa* n. sp., occurrence and description, CASH (60) p. 219, pl. xxvi, fig. 8; *A. proteus*, evidences of a sexual cycle in the life-history of, CALKINS (57) pp. 1-16, 3 pls., 1 text-fig.; *A. p.*, division, especially of the nucleus, described, AVERINTZEV (7) pp. 399 & 400; *A. terricola*, discharge of the contractile vacuole in, described, PENARD (261) pp. 659-662, 2 text-figg.; *A. viridis*, notes on, and nuclear infection of, by a Fungal parasite, GRUBER (128) pp. 67-76, pl. vii.

Cochliopodium ambiguum n. sp., p. 405, 4 text-figg., *C. spumosum* n. sp., p. 401, 5 text-figg., occurrence and diagnoses, PENARD (259).

- Diffugia minutissima* **n. sp.** occurrence and diagnosis, PENARD (259) p. 410, 2 text-figg.; *D. urceolata*, full account of, with special reference to the chromidial substance, conjugation, and the nature of encystment, ZÜLZER (369) pp. 240-295, pls. x-xii, 2 text-figg.
- Diffugiella* **n. g.** diagnosed, p. 224, *D. apiculata* **n. sp.**, occurrence and description, CASH (60) p. 225, pl. xxvi, fig. 7.
- Entamæba buccalis* **n. sp.**, from buccal cavity of man, described, PROWAZEK (279) pp. 42-44; *E. histolytica* (of tropical dysentery) shewn by its development to be quite distinct from *E. coli*, LESAGE (202) pp. 1237-1239.
- Gringa filiformis*, note on, SMITH (325) p. 47.
- Pelomyxa fragilis* **n. sp.**, occurrence and diagnosis, PENARD (259) p. 397, 4 text-figg.
- Penardia* **n. g.** diagnosed, p. 223, *P. mutabilis* **n. sp.**, occurrence and description, CASH (60) p. 223, pl. xxvi, figg. 1 & 2.
- Pseudochlamys arcelloides* **n. sp.**, occurrence and diagnosis, PENARD (259) p. 408, 4 text-figg.
- Pseudodiffugia virescens* **n. sp.**, occurrence and diagnosis, PENARD (259) p. 421, 2 text-figg.

(b) Foraminifera:—

- Foraminifera, structural characters of the shell of floating forms; their adaptation to this mode of life, KEMNA (155) pp. cix-cxxvii.
- Foraminifera from:—Belgian coast, GILSON (118) p. 33; Lough Larne district, with mention of less common forms, GOUGH (124); Australia, listed, JENSEN (153); Malay Archipelago, occurrence and notes on, MILLETT (236 & 237); Lagos and Southern Portugal, NOBRE (250), p. 153; coast of the Island of Delos (Grecian Archipelago), SIDEBOTTOM (317); Plymouth Sound and neighbourhood, listed, WORTH (366) pp. 174-185.
- †Foraminifera, mostly lists, from:—Tertiary, Valley of the Guadalquivir (*Nummulitidae*), CALDERON (55); Eocene, Mount Judica and district of Catenanuova (Catania), described, CHECCHIA-RISPOLI (72); Miocene (?), Andalusia, occurrence (*Lepidocyclina* and *Discospirina*), DOUVILLÉ (84); Cretaceous to Miocene, Galicia, FRIEDBERG (114); Glacial sands, Malone (Belfast), GOUGH (125) p. 258; Cretaceous, Eastern Bohemia, JAHN (149) p. 89; Upper Chalk, England, including several unnamed **n. spp.**, JUKES-BROWNE (154) pp. 303-5, 308, 316, 318, 323, 324, 328-337, 340, 343, 347-353, 366, 371-375 & 510-519; Eocene, near Turin, notes on, LEARDI (177); Eocene ("Flysch"), Montenegro, mostly *Nummulitidae*, MARTELLI (227); early Tertiary limestones, Batjan and Obi (Malay peninsula), occurrence, MARTIN (229); Eocene, Austria, *Nummulitidae* and *Orbitoideæ*, PREVER & RZEHAKE (276); Post-glacial beds, Altcar, Lancs., READE (282) pp. 361-368; Tertiary (Miocene?), Wels, Austria, notes on, SCHUBERT (309).
- †*Ammodiscus concavus* **n. sp.**, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329), p. 179, fig. 1; *A. incertus* var. *macilenta* **n. var.**, occurrence and diagnosis, CHAPMAN (71) p. 228, pl. xxii, fig. 5; *A. nidiformis* **n. sp.**, Jurassic, Memel, described, BRÜCKMANN (46) p. 29, pl. iii, figg. 22 & 23.
- †*Anomalina grosserugosa*, Miocene, Maryland, described, BAGG (9) p. 466, pl. cxxxi, fig. 11.
- Articulina lineata*, p. 17, pl. v, fig. 1, *A. sagra*, p. 17, pl. iv, figg. 18-20, text-fig. 6, *A. sulcata*, p. 16, pl. iv, figg. 16 & 17, text-fig. 5, notes on, SIDEBOTTOM (317).
- †*Assilina depressa*, p. 397, pl. xiv, fig. 9, *A. discoidalis* varr., p. 396, pl. xiv, fig. 8, *A. nitida*, p. 397, pl. xiv, fig. 11, *A. radiolata*, p. 397, pl. xiv, fig. 12, *A. undata*, p. 397, pl. xiv, fig. 10, forms originally described by

- D'Orbigny in the "Prodrome," notes on, FORNASINI (111), figures taken from the "Planches inédites"; *A. leymeriei*, p. 194, pl. i, figg. 9-17, *A. placentula*, p. 193, pl. i, figg. 1-8, Eocene, Austria, described, PREVER & RZEHAŁ (276); *A. spira* (A-form), occurrence and note on, CHECCHIA-RISPOLI (72) p. 53, pl. ii, fig. 3.
- Astrorhiza* sp., occurrence of an unusually large specimen off Rathlin Island (Antrim), WELCH (355) p. 27.
- †*Baculogypsina*, remarks on the genus, p. 117, *B. sphaerulata*, fig. 14, *B. sp.*, figg. 12 & 13, occurrence, PREVER (274); *B. sphaerulata* (Pkr. & J.), Eocene, S. Genesio, described, LEARDI (178), p. 185, pl. v, figg. 6-14.
- †*Bathysiphon filiformis*, p. 412, pl. xix, fig. 13, *B. taurinensis*, p. 412, pl. xix, figg. 10-12, Tertiary, Wels, Austria, notes on, SCHUBERT (309).
- †*Bigenerina agglutinans*, Jurassic, Memel, described, BRÜCKMANN (46) p. 29, pl. iv, fig. 25; *B. eximia*, Permo-Carboniferous, Kansas, note on, SPANDEL (329) p. 181, fig. 2; *B. robusta*, Tertiary, Austria, note on, SCHUBERT (309) p. 415, pl. xix, fig. 9.
- Biloculina elongata* d'Orb., note on, SIDEBOTTOM (317) p. 3, pl. ii, fig. 8; *B. sphaera*, in plankton, Capri, Lo BIANCO (205) p. 62, pl. xli, fig. 179.
- †*Bolivina beyrichii* var. *alata*, Miocene, Maryland, described, BAGG (9) p. 473, pl. cxxxii, fig. 14.
- †*Brugueria* (*Camerina*) *laevigata*, Eocene, Austria, note on, PREVER & RZEHAŁ (276) p. 197, pl. ii, fig. 35; *B. libyca* **n. sp.**, diagnosis and synonymy, PREVER (273) p. 32.
- Bulima elongata*, occurrence in British seas (Lough Larne), GOUGH (124) p. 37.
- †*Bulimina affinis* var. *tenuissimestriata* **n. var.**, p. 416, pl. xix, fig. 5, *B. elegans*, var. *gibba* **n. var.**, p. 416, pl. xix, fig. 6, *B. rotula* **n. sp.**, p. 416, pl. xix, fig. 7, Tertiary, Austria, diagnosed, SCHUBERT (309); *B. gregorii* **n. sp.**, Oolite, W. Australia, diagnosed, CHAPMAN (70) p. 187, pl. xxii, fig. 3; *B. trigonula* **nom. nov.**, var. *inornata* **n. var.**, Cretaceous, Pondoland, diagnosed, id. (69) p. 224, pl. xxix, fig. 3.
- †*Calcarina tetraëdra*, occurrence and remarks on, CHECCHIA-RISPOLI (72) p. 31, pl. ii, fig. 12.
- †*Camerina laevigata*, p. 34, *C. italica* (A-form), p. 37, pl. ii, figg. 28 & 29, occurrence and remarks on, CHECCHIA-RISPOLI (72).
- Carpenteria proteiformis* Goës, note on, MILLETT (236) p. 496, pl. x, figg. 1 & 2.
- †*Chapmanina aegyptiensis*, occurrence in Tuscany (Cretaceous) and note on, SILVESTRI (323) pp. 117-119, 3 text-figg.
- †*Conulites aegyptiensis* Chapman, Eocene, S. Genesio, described, LEARDI (178) p. 182, pl. v, figg. 1-4.
- †*Cristellaria baltica* **n. sp.**, p. 13, pl. ii, fig. 13, *C. bronni*, p. 17, pl. ii, figg. 5-12, *C. cornucopiae*, p. 17, pl. ii, figg. 17-19, *C. flagellum*, p. 14, pl. ii, fig. 14, *C. harpa*, p. 18, pl. ii, figg. 20-22, *C. hauerina*, p. 19, pl. ii, fig. 25, *C. lithuanica* **n. sp.**, p. 15, pl. ii, fig. 15, *C. manubrium*, p. 19, pl. ii, figg. 23 & 24, *C. mitellata* **n. sp.**, p. 22, pl. ii, figg. 26 & 27, *C. rotulata*, p. 14, pl. ii, figg. 1-4, pl. iii, figg. 1-5, *C. virgata* **n. sp.**, p. 16, pl. ii, fig. 16, Jurassic, Memel, described, BRÜCKMANN (46); *C. colligata* **n. sp.**, p. 20, pl. iii, figg. 6 & 7, *C. flexuosa* **n. sp.**, p. 20, pl. iii, fig. 8, *C. italica*, p. 21, pl. iii, figg. 10-12, *C. mamilligera*, p. 16, pl. iii, fig. 17, *C. osnabrugensis*, p. 15, pl. iii, figg. 14-16, *C. reniformis*, p. 21, pl. iii, fig. 13, *C. subangulata*, p. 22, pl. iii, fig. 9, Jurassic, Memel, described, id. (46); *C. costata* var. *compressa* **n. var.**, p. 194, pl. xxii, fig. 14, *C. c.* var. *seminuda* **n. var.**, p. 195, pl. xxii, fig. 15, *C. daintreei* **n. sp.**, p. 194, pl. xxii, fig. 13, *C. decipiens*, p. 193, pl. xxii, fig. 12, *C. limata*, p. 195, pl. xxii, fig. 16, *C. prominula*, p. 193, pl. xxii, fig. 11, *C. rotulata*, p. 192, pl. xxii, fig. 9, *C. subalata*, p. 193, pl. xxii, fig. 10,

- Oolite, W. Australia, remarks on, CHAPMAN (70); *C. cultrata*, p. 474, pl. cxxxii, fig. 15, *C. wetherellii* p. 475, pl. cxxxii, fig. 16, Miocene, Maryland, described, BAGG (9); *C. josephina* var. *umbonata* n. var., Tertiary, Austria, diagnosed, SCHUBERT (309) p. 418, pl. xix, fig. 4; *C. subalata*, Cretaceous, note on, CHAPMAN (69) p. 227, pl. xxix, figg. 10; *C. n. sp.*, Eocene, Turin, diagnosed, LEARDI (177) p. 163.
- Cyclammina cancellata*, microspheric form of (recent and fossil), described, SILVESTRI (320) pp. 180-185, 4 text-figg.
- +*C. complanata* n. sp., p. 228, pl. xxii, fig. 7, *C. paupera* n. sp., p. 229, pl. xxii, fig. 6, Oligocene, Victoria, diagnosed, CHAPMAN (71); *C. gracilis*, Tertiary, Austria, notes on, SCHUBERT (309) p. 414, pl. xix, figg. 1-3.
- +*Dentalina bradyi* n. sp., Permo-Carboniferous, KANSAS, diagnosed, SPANDEL (329) p. 190, fig. 9; *D. communis*, p. 29, pl. iii, figg. 30, 32 & 33, *D. pinguiculus*, p. 28, pl. iii, figg. 29 & 31, Jurassic, Memel, BRÜCKMANN (46).
- +*Dicyclina schlumbergeri*, Cretaceous, Berre, note on, SCHLUMBERGER & CHOFFAT (306) p. 362, 2 text-figg.
- +*Discorbina orbicularis*, Miocene, Maryland, described, BAGG (9) p. 463, pl. cxxxi, fig. 5; *D. rosacea*, Oolite, W. Australia, note on, CHAPMAN (70) p. 198, pl. xxii, fig. 23.
- Ellipsulimina sequenzai* n. sp., occurrence and diagnosis, SILVESTRI (321) p. xii, fig. 7.
- Ellipsopleurostomella pleurostomella* n. sp., p. 8, figg. 4 & 5, *E. rostrata* n. sp., p. 7, fig. 3, *E. schlichti* n. sp., p. 5, figg. 1 & 2, occurrence and description, SILVESTRI (321).
- +*Epistomina porcellanea* n. sp., p. 26, pl. iv, figg. 17-19, *E. reticulata*, p. 23, pl. iv, figg. 6-9, *E. spinulifera*, p. 25, pl. iv, figg. 1-5, *E. stelligera*, p. 23, pl. iv, figg. 10 & 11, *E. sp.*, p. 27, pl. iv, figg. 20 & 21, Jurassic, Memel, described, BRÜCKMANN (46).
- +*Flabellina dilatata*, Oolite, W. Australia, remarks on, CHAPMAN (70) p. 196, pl. xxii, fig. 18.
- +*Frondicularia*, diagnosis of the genus, p. 6, *F. borussica* n. sp., p. 11, pl. i, fig. 5, *F. distorta* n. sp., p. 11, pl. i, fig. 23, *F. glandulinoides*, p. 12, pl. i, fig. 27, *F. molleri*, p. 7, pl. i, figg. 1-4, 6-8, *F. nikitini*, p. 9, pl. i, figg. 9-14, *F. schellureni* n. sp., p. 10, pl. i, figg. 15-17, *F. spatulata*, p. 13, pl. i, figg. 18-22, *F. supracallovienensis*, p. 12, pl. i, figg. 24, 26, Jurassic, Memel, described, BRÜCKMANN (46).
- +*Fusulina cylindrica*, occurrence, Carboniferous limestone, Bisbee, Arizona, GIRTY (121) p. 50, pl. xi, fig. 1; *F. c.*, Carboniferous, Colorado, note on, GIRTY (122) p. 317; *F. regularis*, Permo-Carboniferous, diagnosed, SPANDEL (329) p. 192, fig. 10.
- +*Geinitzina postcarbonica* n. sp., Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 189, fig. 8.
- +*Glandulina lahusei*, Jurassic, Memel, described, BRÜCKMANN (46) p. 27, pl. iii, fig. 28.
- Globigerina bulloides*, occurrence, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 156.
- +*G. bulloides*, p. 468, pl. cxxxii, figg. 1 & 2, *G. cretacea*, p. 469, pl. cxxxii, fig. 3, Miocene, Maryland, described, BAGG (9); *G. canaliculata*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 229, pl. xxix, fig. 12.
- +*Gümbelia (Lenticulina) nicolisi* n. sp., Eocene, Monte Baldo, diagnosed, PREVER (275) p. 478, figg. 3 & 4, *G. sub-montis fractii* n. sp., p. 33, *G. sub-oosterii* De la Harpe, p. 35, var. *pretiosa* n. var., p. 36, diagnoses and synonymy, PREVER (273).
- +*Haplophragmium latidorsatum*, p. 227, pl. xxii, fig. 1, *H. canariense*, p. 228, pl. xxii, fig. 2, occurrence and note, CHAPMAN (71); *H. meridionale* n. sp., p. 223, pl. xxix, fig. 2, *H. neocomianum*, p. 223, pl. xxix, fig. 1,

- Cretaceous, Pondoland, diagnosed, id. (69) ; *H. n.*, Oolite, W. Australia, note on, id. (70) p. 186, pl. xxii, fig. 1.
- Hauerina compressa* d'Orb., note on, SIDEBOTTOM (317) p. 19, pl. v, figg. 7 & 8, text-fig. 8.
- †*Heterostegina suborbicularis*, notes on forms of, originally described by D'Orbigny in the "Prodrome," FORNASINI (111) p. 396, pl. xiv, figg. 5-7, figures taken from the "Planches inédites."
- Lagena levis*, Australian sands, note on, JENSEN (153) p. 816, pl. xxiii, fig. 2 ; *L. ventricosa* **n. sp.**, occurrence and description, SILVESTRI (321) p. 11, fig. 6.
- †*L. apiculata* var. *tetracarinata* **n. var.**, Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22.
- †*Laharpeia* (*Camerina*) *gassinensis* **n. sp.**, Eocene, Roc di Gassin, diagnosed, PREVER (275) p. 477, figg. 1 & 2.
- †*Lenticulina garganica* (A) p. 38, pl. ii, figg. 7 & 8, var. *samnitica* (A) p. 39, pl. ii, fig. 30, *L. curvispira*, p. 40, pl. ii, fig. 31, *L. kaufmanni*, p. 42, pl. ii, fig. 32, *L. irregularis* (B) p. 44, *L. ramondi* (A) p. 44, *L. beaumonti* (B) p. 45, *L. guettardi*, p. 47, pl. ii, figg. 4-6, *L. contorta* (B) p. 51, pl. ii, fig. 1, *L. budensis*, p. 52, pl. ii, fig. 2, occurrence and remarks on, CHECCHIA-RISPOLI (72).
- †*Lepidocyclus*, description, distribution and relationships of the genus, *L. mantelli*, p. 10, pl. i, fig. 4, pl. ii, fig. 18, pl. iii, figg. 7, 12, *L. rawlini* **n. sp.**, p. 11, pl. i, figg. 3, 6, 9, 13, 16, pl. ii, figg. 3, 10, pl. iii, figg. 4, 14, *L. dilatata*, p. 12, pl. i, fig. 2, pl. ii, figg. 8, 21, pl. iii, figg. 10, 15, *L. elephantina*, p. 13, pl. ii, figg. 13, 19, *L. schlumbergeri* **n. sp.**, p. 14, pl. i, fig. 10, pl. ii, fig. 6, *L. chaperi* **n. sp.**, p. 14, pl. ii, fig. 5, *L. gallieni* **n. sp.**, p. 15, pl. i, fig. 8, pl. ii, fig. 1, *L. joffrei* **n. sp.**, p. 16, pl. ii, fig. 17, pl. iii, fig. 11, *L. marginata*, p. 16, pl. i, fig. 7, pl. ii, figg. 7, 9, 11, 20, pl. iii, figg. 3, 8, 9, 13, *L. morgani* **n. sp.**, p. 17, pl. i, figg. 12, 15, 17, pl. ii, figg. 4, 12, pl. iii, fig. 2, *L. sumatrensis*, p. 18, pl. i, fig. 14, pl. ii, fig. 15, pl. iii, fig. 6, *L. tournoueri* **n. sp.**, p. 19, pl. i, fig. 5, pl. ii, figg. 2, 14, pl. iii, fig. 1, *L. canellei* **n. sp.**, p. 20, pl. i, fig. 1, pl. iii, fig. 5, *L. verbeeki*, p. 20, pl. i, fig. 11, pl. ii, fig. 16, *L. munieri* **n. sp.**, p. 20, pl. ii, fig. 22, diagnoses and occurrence, LEMOINE & DOUVILLÉ (201) ; *L.*, discussion of the genus, p. 119, *L. burdigalensis*, fig. 24, *L. dilatata*, fig. 15, *L. formai* **n. sp.**, diagnosed, p. 127, figg. 20 & 21, *L. mantelli*, figg. 16 & 17, *L. marginata*, fig. 23, *L. saccoi* **n. sp.**, p. 127, fig. 19, *L. vidali*, fig. 1, *L. sp.* figg. 18, 22, 25, occurrence and notes, PREVER (274) ; *L. (?) aspera*, occurrence and note, CHECCHIA-RISPOLI (72) p. 64, pl. ii, figg. 10, 11, 15, 16.
- Lingulina carinata*, Australian sands, note on, JENSEN (153) p. 822, pl. xxiii, fig. 13.
- †*Lituola simplex* **n. sp.**, Oligocene, Victoria, diagnosed, CHAPMAN (71) p. 228, pl. xxii, figg. 3 & 4.
- †*Marginulina compressa*, p. 188, p. xxii, fig. 4, *M. solida*, p. 189, pl. xxii, fig. 17, Oolite, W. Australia, notes on, CHAPMAN (70) ; *M. macilenta*, Jurassic, Memel, described, BRÜCKMANN (46) p. 31, pl. iii, fig. 21.
- Massilina annectens* (d'Orb.), p. 18, pl. v, figg. 2-4, *M. rugosa* **n. sp.**, p. 18, pl. v, figg. 5 & 6, text-fig. 7, notes on, SIDEBOTTOM (317).
- Microgromia elegantula* **n. sp.**, p. 416, 1 text-fig., *M. levipes* **n. sp.**, p. 418, 4 text-figg., occurrence and diagnoses, PENARD (259).
- †*Microgypsina*, remarks on the genus, p. 125, *M. dervieuxi* **n. sp.**, p. 127, figg. 32 & 33, *M. irregularis*, figg. 26-28, 30, 31, 34, *M. taurinensis* **n. sp.**, p. 127, fig. 29, occurrence and diagnoses, PREVER (274).
- Miliolina bicornis*, p. 14, pl. iv, figg. 13 & 14, *M. contorta*, p. 13, pl. iv, figg. 7-9, *M. gracilis*, p. 14, pl. iv, figg. 10-12, *M. laevigata*, p. 12, pl. iv, figg. 1-3, text-fig. 4, *M. pulchella*, p. 15, pl. iv, fig. 15, *M. pygmæa*, p. 13, pl. iv, figg. 4-6, *M. reticulata*, p. 10, pl. iii, figg. 8-10, *M.*

- seminulum*, p. 10, pl. iii, figg. 13-15, var. *cornuta* **n. var.**, p. 11, pl. iii, figg. 11 & 12, text-fig. 3, *M. subrotunda*, p. 8, pl. iii, figg. 1-7, text-fig. 2 notes on, SIDEBOTTOM (317); *M. excisa*, occurrence and note, MILLETT (237) p. 607, pl. xi, fig. 4.
- +*M. gramen* **n. sp.**, *M. tenuis* **n. sp.**, Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22; *M. seminulum*, Miocene, Maryland, described, BAGG (9) p. 481, pl. cxxxiii, fig. 12.
- +*Monogenerina* **n. g.**, characteristics of the genus, p. 181, *M. atava* **n. sp.**, p. 183, fig. 3, *M. nodosariformis* **n. sp.**, p. 184, fig. 4, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329).
- Nodosaria scalaris*, Australian sands, note on, JENSEN (153) p. 816, pl. xxiii, fig. 1.
- +*N. postcarbonica* **n. sp.**, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 188, fig. 7; *N. prima*, Jurassic, Memel, described, BRÜCKMANN (46) p. 28, pl. iii, fig. 27; *N. prismatica*, p. 225, pl. xxix, fig. 5, *N. zippei*, p. 226, pl. xxix, fig. 6, Cretaceous, Pondoland, notes on, CHAPMAN (69); *N. raphanistrum*, Tertiary, Saratow (near the Volga), note on, ARKHANGHELSKII (5) p. 60, pl. xi, fig. 26.
- Nonionina orbicularis* Brady, note on, MILLETT (237) p. 600, pl. xi, fig. 1.
- +*N. scapha*, Miocene, Maryland, described, BAGG (9) p. 460, pl. cxxxi, figg. 1-3.
- Nubecularia divaricata* Brady, p. 2, pl. ii, figg. 5-7, *N. lucifuga* Defr., p. 2, pl. ii, figg. 1-4, notes on, SIDEBOTTOM (317).
- +*Nummulites* sens. lat. (see Prot. Rec. 1902, p. 66), general considerations of, and its sub-divisions, distribution in space and time, PREVER (275) pp. 461-487, 7 text-figg., 1 table; *N. distans* (A and B forms) p. 293, pl. xxv, figg. 5 & 6, *N. dufrenoyi* (A & B) pp. 292 & 293, pl. xxv, figg. 1-4, Middle Eocene, Dardanelles, described, HOLLAND (145).
- +*Operculina costata*, p. 395, pl. xiv, fig. 1, *O. gaimardi*, p. 396, pl. xiv, fig. 4, *O. madagascariensis*, p. 395, pl. xiv, fig. 3, *O. thounii*, p. 395, pl. xiv, fig. 2, originally described by D'Orbigny in the "Prodrome," notes on, FORNASINI (111), the figures being taken from the "Planches inédites"; *O. granulosa*, p. 32, pl. ii, fig. 13, *O. canalifera* (B-form) p. 33, pl. ii, fig. 14, occurrence and notes on, CHECCHIA-RISPOLI (72).
- +*Orbitoides viduli* **n. sp.**, Lower Cretaceous, Spain, diagnosed, PREVER (272) p. 981, figg. 1-5.
- +*Orbitoidinæ*, discussion of the sub-family and constituent genera, PREVER (274) pp. 111-128, pl. vi.
- +*Orbitolina texana*, occurrence, Cretaceous, Bisbee, Arizona, STANTON (331) p. 70, pl. xvi, fig. 4.
- Orbulina universa*, occurrence, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 157.
- +*O. universa*, Jurassic, Memel, described, BRÜCKMANN (46) p. 32, pl. iv, fig. 24.
- +*Orthophragmina*, discussion of the genus, p. 122, *O. aspera*, figg. 4 & 5, *O. nummulitica*, fig. 9, *O. radians*, fig. 11, *O. rovasendai* **n. sp.**, p. 127, fig. 8, *O. stellata*, figg. 6, 10, *O. varicostata*, fig. 7, occurrence and notes, PREVER (274); *O. aprutina* **n. sp.**, p. 983, fig. 11, *O. circumvallata* **n. sp.**, p. 987, fig. 8, *O. chelussii* **n. sp.**, p. 984, fig. 10, *O. illyrica* **n. sp.**, p. 984, fig. 12, *O. rugosa* **n. sp.**, p. 987, fig. 6, *O. samnitica* **n. sp.**, p. 985, fig. 9, *O. schlumbergeri* **n. sp.**, p. 986, fig. 7, *O. vinassai* **n. sp.**, p. 985, fig. 13, Cretaceous, Spain, diagnosed, PREVER (272); *O. dispansa*, p. 56, pl. ii, figg. 9, 23, *O. tenuicostata*, p. 60, pl. ii, figg. 17 & 18, *O. patellaris*, p. 61, pl. ii, fig. 35, *O. stellata*, p. 62, pl. ii, figg. 19-21, *O. stella*, p. 63, pl. ii, fig. 22, occurrence and remarks on, CHECCHIA-RISPOLI (72); *O. patellaris*, p. 120, pl. iii, fig. 6, pl. iv, figg. 13 & 14, *O. gümbeli* **n. sp.**, p. 122, text-fig. 2, *O. radians*, p. 122, pl. iii,

- fig. 7, 9, pl. iv, figg. 15-17, *O. decorata* n. sp., p. 124, pl. iii, fig. 11, *O. munieri*, p. 125, pl. iii, fig. 12, *O. multiplicata*, p. 125, pl. iii, fig. 10, pl. iv, figg. 18, 20, *O. stellata*, p. 126, pl. v, figg. 31-36, pl. vi, figg. 37-40, *O. lanceolata* n. sp., p. 128, pl. 5, figg. 25-30, *O. taramellii*, p. 131, pl. vi, figg. 41-46, 51, 57, *O. bayani*, p. 131, pl. v, fig. 23, pl. iv, figg. 21 & 22, *O. stella*, p. 132, pl. vi, figg. 47-50, 52-56, *O. sp.*, p. 133, pl. iii, fig. 8, Eocene, Pyrenees and Maritime Alps, described, SCHLUMBERGER (305); *O. varians*, Eocene, Austria, note on, PREVER & RZEHAK (276) p. 199, pl. ii, fig. 36.
- Pamphagus bathybioticus* n. sp., occurrence and diagnosis, PENARD (259) p. 413, 6 text-figg.; *P. hyalinus*, peculiar habit of, LORD (208), pp. 76-78, pl. iii, fig. 1.
- +*Paronæa contorta*, p. 192, pl. ii, figg. 28-34, *P. ramondi*, p. 192, pl. i, figg. 18-20, pl. ii, figg. 21 & 22, *P. subramondi*, p. 193, pl. ii, figg. 23-27, Eocene, Austria, described, PREVER & RZEHAK (276); *P. curvispira* (Mngh.), subdivided into four sections, *P. curvispira* sensu stricto (diagnosis and synonymy, p. 31), and *Bruguieria libyca* n. sp., *Gümbelia sub-montis fractii* n. sp., and *G. sub-oosterii* De la H. (qq. v.), PREVER (273).
- Pelosina distoma* n. sp., diagnosed, MILLETT (237) p. 608, pl. xi, figg. 5 & 6. *Planispirina schlumbergeri* n. sp., p. 20, pl. v, figg. 9-11, text-fig. 10, *P. striata* n. sp., p. 21, pl. v, figg. 12-14, text-fig. 9, diagnosed, SIDEBOTTOM (317).
- +*Planorbulina mediterraneensis*, Miocene, Maryland, described, BAGG (9) p. 463, pl. cxxxi, fig. 6.
- +*Pleurostomella subnodosa*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 224, pl. xxix, fig. 4.
- Polymorphina alveoliniformis* n. sp., p. 821, pl. xxiii, figg. 8-12, *P. hedleyi* n. sp., p. 828, pl. xxiii, fig. 14, *P. sororia*, p. 817, pl. xxiii, fig. 3, Australian sands, diagnoses and notes, JENSEN (153).
- +*P. burdigalensis*, p. 196, pl. xxii, fig. 19, *P. compressa*, p. 197, pl. xxii, figg. 21 & 22, *P. gutta*, p. 197, pl. xxii, fig. 20, Oolite, W. Australia, notes on, CHAPMAN (70); *P. compressa*, p. 476, pl. cxxxiii, fig. 1, var. *striata* n. var., p. 476, pl. cxxxiii, fig. 2, *P. elegantissima*, p. 476, pl. cxxxiii, fig. 3, *P. gibba*, p. 477, pl. cxxxiii, fig. 4, *P. lactea*, p. 477, pl. cxxxiii, figg. 5 & 6, *P. regina*, p. 478, pl. cxxxiii, fig. 7, Miocene, Maryland, described, BAGG (9); *P. gibba*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 228, pl. xxix, fig. 11; *P. irregularis* n. sp., Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22; *P. oolithica*, Jurassic, Memel, described, BRÜCKMANN (46) p. 31, pl. iii, figg. 24-26.
- Polystomella crispa* (Linn.) p. 603, pl. xi, fig. 2, *P. verriculata* Brady, p. 604, pl. xi, fig. 3, notes on, MILLETT (237); *P. macella* (perhaps n. sp.), Australian sands, note on, JENSEN (153) p. 817, pl. xxiii, fig. 4.
- +*P. striatopunctata*, Miocene, Maryland, described, BAGG (9) p. 462, pl. cxxxi, fig. 4.
- Pulvinulina brongiartii* (d'Orb.), p. 498, pl. x, fig. 4, *P. oblonga* (Will.) var. *carinata* n. var., p. 498, pl. x, fig. 3, notes on, MILLETT (236).
- +*P. carpenteri*, p. 230, pl. xxix, figg. 14, 18, *P. elegans*, p. 230, pl. xxix, fig. 13, *P. pondensis* n. sp., p. 231, pl. xxix, fig. 19, *P. reticulata*, p. 231, pl. xxix, fig. 15, Cretaceous, Pondoland, notes on, CHAPMAN (69); *P. rjäsanensis*, Jurassic, Memel, described, BRÜCKMANN (46) p. 26, pl. iv, figg. 12-16.
- +*Rhabdogonium pericardium* n. sp., Jurassic, Memel, described, BRÜCKMANN (46) p. 32, pl. iv, fig. 26.
- Rheophae euneta* n. sp., Australian sands, diagnosed, JENSEN (153) p. 821, pl. xxiii, figg. 5-7.
- Rotalia annectens* Park. & J., p. 505, pl. x, fig. 6, var. *concinna* n. var.,

- p. 505, pl. x, fig. 7, *R. schroeteriana* Park. & J., var. *inflata* **n. var.**, p. 504, pl. x, fig. 5, notes on, MILLETT (236).
- +*R. beccarii*, p. 467, pl. cxxxi, figg. 12 & 13, var. *bræckhiana*, p. 467, pl. cxxxi, fig. 14, Miocene, Maryland, described, BAGG (9); *R. soldanii* var. *nitida*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 232, pl. xxix, fig. 17.
- +*Sagrina dimorpha* var. *ornata* **n. var.**, Tertiary, Austria, diagnosed, SCHUBERT (309) p. 419, pl. xix, fig. 8; *S. nodosa*, Pliocene, note on, SILVESTRI (322) pp. 129-132, 2 text-figg.; *S. spinosa* **n. sp.**, Miocene, Maryland, diagnosed, BAGG (9) p. 480, pl. cxxxiii, fig. 11.
- Sigmoilina ovata* **n. sp.**, diagnosed, SIDEBOTTOM (317) p. 6, pl. ii, figg. 12 & 13, text-fig. 1.
- +*Silvestrina* **n. g.**, p. 122, *S. apiculata* (Schlumb.) fig. 3, *S. vandenbröcki* **n. sp.**, p. 127, fig. 2, occurrence and diagnoses, PREVER (274).
- +*Spirocyclina choffati*, history, description, and synonymy of, SCHLUMBERGER & CHOFFAT (306) pp. 358-368, pls. ix & x.
- Spiroloculina impressa* Terq., note on, SIDEBOTTOM (317) p. 5, pl. ii, figg. 9-11.
- +*S. grata*, p. 482, pl. cxxxiii, fig. 14, *S. tenuis*, p. 483, pl. cxxxiii, fig. 13, Miocene, Maryland, described, BAGG (9); *S. sp.*, Jurassic, Memel, note on, BRÜCKMANN (46) p. 30, pl. iv, figg. 22 & 23.
- +*Tetrataxis conica* Ehr. var. *lata* **n. var.**, Permo-Carboniferous, Kansas, diagnosed, SPANDEL (329) p. 186, fig. 6.
- +*Textularia abbreviata*, p. 470, pl. cxxxii, fig. 4, *T. agglutinans*, p. 470, pl. cxxxii, fig. 5, *T. articulata*, p. 471, pl. cxxxii, figg. 6 & 7, *T. carinata*, p. 472, pl. cxxxii, fig. 10, *T. gramen*, p. 471, pl. cxxxii, figg. 8 & 9, *T. sagittula*, p. 472, pl. cxxxii, figg. 11 & 12, *T. subangulata*, p. 473, pl. cxxxii, fig. 13, Miocene, Maryland, described, BAGG (9); *T. crater* **n. sp.**, Oolite, W. Australia, diagnosed, CHAPMAN (70) p. 187, pl. xxii, fig. 2; *T. gibbosa*, Permo-Carboniferous, Kansas, note on, SPANDEL (329) p. 185, fig. 5.
- +*Textulariidae*, distribution of, in Miocene of Italy, FORNASINI (112) pp. 89-116.
- Thuramina favosa* Flint, occurrence and note, MILLETT (237) p. 608, pl. xi, fig. 7.
- +*Triticites* **n. g.**, described, for *T. (Miliolites) secalicus*, Carboniferous, Mississippi Valley, Girty (120) pp. 234-240, 5 text-figg.
- +*Trochammina bifaciata* **n. sp.**, *T. mirabilis* **n. sp.**, *T. simplex* **n. sp.**, *T. variegata* **n. sp.**, Cretaceous, Galicia, mentioned, FRIEDBERG (114) p. 22.
- +*Truncatulina lobatula*, p. 464, pl. cxxxi, figg. 7 & 8, *T. variabilis*, p. 465, pl. cxxxi, figg. 9 & 10, Miocene, Maryland, described, BAGG (9); *T. schloenbachi*, Cretaceous, Pondoland, note on, CHAPMAN (69) p. 229, pl. xxix, fig. 16; *T. wuellerstorfi*, Oolite, W. Australia, note on, id. (70) p. 198, pl. xxii, fig. 24.
- +*Uvigerina canariensis*, p. 478, pl. cxxxiii, fig. 8, *U. pygmaea*, p. 479, pl. cxxxiii, fig. 9, *U. tenuistriata*, p. 479, p. cxxxiii, fig. 10, Miocene, Maryland, diagnosed, BAGG (9).
- +*Vaginulina humilis*, p. 226, pl. xxix, fig. 7, *V. intumescens*, p. 227, pl. xxix, fig. 9, *V. legumen*, p. 226, pl. xxix, fig. 8, Cretaceous, Pondoland, notes on, CHAPMAN (69); *V. intumescens*, p. 191, pl. xxii, fig. 8, *V. lata*, p. 190, pl. xxii, fig. 6, *V. schloenbachi*, var. *interrupta* **n. var.**, p. 190, pl. xxii, fig. 5, *V. strigillata*, p. 191, pl. xxii, fig. 7, Oolite, W. Australia, remarks on, id. (70); *V. mosquensis*, p. 30, pl. iii, figg. 18 & 19, *V. sp.*, p. 30, pl. iii, fig. 20, Jurassic, Memel, described, BRÜCKMANN (46).
- Virgulina*, its relation to *Bulimina* and *Bolivina*, p. 23, *V. schreibersiana*, a variety of, described, SILVESTRI (319) p. 22, 7 text-figg.

3. HELIOZOA.

Full account of the Heliozoa and "Pseudo-Heliozoa" of Lake Geneva and neighbourhood, with text-figg. of all species described; classification of genera and species, PENARD (262).

(a) **Aphrothoraca**:—

Actinophrys sol var. *fusca* **n. var.**, Lake of Geneva, diagnosed, PENARD (262) p. 113, 5 figg.

Actinosphaerium arachnoideum **n. sp.**, Lake of Geneva, diagnosed, PENARD (262) p. 137, 1 fig.; *A. eichhorni*, full description of cytological changes in, indicative of physiological degeneration, HERTWIG (138) pp. 307–342, pls. ix–xii; *A. e. varr. majus* **n. var.**, Lake of Geneva, diagnosed, PENARD (262) p. 130, 1 text-fig.

(b) **Chlamydomphora**:—

Astrodisculus laciniatus **n. sp.**, p. 146, 1 fig., *A. zonatus* **n. sp.**, p. 142, 1 fig., Lake Geneva, diagnosed, PENARD (262).

Heterophrys glabrescens **n. sp.**, p. 161, 6 figg., *H. myriopoda* var. *holochlora* **n. var.**, p. 154, 4 figg., Lake Geneva, diagnosed, PENARD (262).

(c) **Chalarothoraca**:—

Acanthocystis pelagica **n. sp.**, occurrence and diagnosis, OSTENFELD (254) p. 4, figg. 4–7; *A. mimetica* **n. sp.**, p. 229, 4 figg., *A. pantopoda* **n. sp.**, p. 255, 1 fig., *A. rubella* **n. sp.**, p. 232, 1 fig., Lake of Geneva, diagnosed, PENARD (262).

Lithocolla flavescens **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 220, 1 fig.

Pompholyxophrys ovuligera **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 214, 1 fig.

Raphidiophrys ambigua **n. sp.**, p. 179, 3 figg., *R. caerulea* **n. sp.**, p. 187, 1 fig., *R. intermedia* **n. sp.**, p. 183, 1 fig., *R. symmetrica* **n. sp.**, p. 181, 1 fig., Lake Geneva, diagnosed, PENARD (262); *R. marina* **n. sp.**, occurrence and diagnosis, OSTENFELD (254) p. 4, figg. 1–3.

Raphidocystis **n. g.**, p. 189, *R. glutinosa* **n. sp.**, p. 199, 3 figg., *R. stellata* **n. sp.**, p. 191, 3 figg., *R. tubifera* **n. sp.**, p. 193, 1 fig., Lake Geneva, diagnosed, PENARD (262).

(d) **Desmothoraca**:—

Choanocystis **n. g.**, *lepidula* **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 288, 1 fig.

Hedriocystis reticulata **n. sp.**, Lake Geneva, diagnosed, PENARD (262) p. 284, 4 figg.

4. RADIOLARIA.

(a) **Peripylaria**:—

†*Acanthosphaera parvula*, Miocene, Maryland, diagnosed, MARTIN (228) p. 458, pl. cxxx, fig. 21.

†*Cannartidium* sp., Miocene, Maryland, note on, MARTIN (228) p. 456, pl. cxxx, fig. 18.

†*Cannartiscus amphicylindricus*, p. 457, pl. cxxx, fig. 19, *C. marylandicus* **n. sp.**, p. 457, pl. cxxx, fig. 20, Miocene, Maryland, diagnosed, MARTIN (228).

†*Cenosphaera porosissima*, Miocene, Maryland, diagnosed, MARTIN (228) p. 459, pl. cxxx, figg. 24 & 25.

Collozoum inerme, plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 158.

- +*Dictyocoryne profunda*, Miocene, Maryland, diagnosed, MARTIN (228) p. 454, pl. cxxx, figg. 11-13.
 +*Hexalonche microsphaera*, Miocene, Maryland, diagnosed, MARTIN (228) p. 458, pl. cxxx, fig. 22.
 +*Hexastylus simplex*, Miocene, Maryland, diagnosed, MARTIN (228), p. 459, pl. cxxx, fig. 23.
 +*Phacodiscus calvertanus* **n. sp.**, Miocene, Maryland, diagnosed, MARTIN (228) p. 456, pl. cxxx, fig. 17.
 +*Porodiscus concentricus*, Miocene, Maryland, diagnosed, MARTIN (228) p. 455, pl. cxxx, fig. 16.
 +*Rhopalodictyum calvertense* **n. sp.**, p. 455, pl. cxxx, fig. 15, *R. marylandicum* **n. sp.**, p. 455, pl. cxxx, fig. 14, Miocene, Maryland, diagnosed, MARTIN (228).
Sphaerozoum punctatum, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 159.
 +*Spongasteriscus marylandicus* **n. sp.**, Miocene, Maryland, diagnosed, MARTIN (228) p. 453, pl. cxxx, fig. 10.
Spongosphæra streptacantha, in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 165.
Thalassicolla pelagica, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 160.

(b) **Acantharia** :—

- The *Acanthometrea*, classification of the group, many alterations and amplifications suggested, POPOFSKY (270) pp. 28-45; occurrence and description, id. pp. 47-115; nature of skeleton and hydrostatic apparatus in, fully described, illustrated from various genera (*Acanthometra*, *Amphilonche*, *Acanthonia*, etc.), SCHEWIAKOFF (303) 40 pp., 4 pls.
Acanthapophysia **n. subg.** (of *Acanthometron*) diagnosed, POPOFSKY (270) p. 64.
Acanthochiasma cruciata, p. 52, pl. iv, fig. 2, *A. decacantha* **n. sp.**, p. 53, *A. bicuspidata* **n. sp.**, p. 53, pl. v, fig. 1, *A. plana* **n. sp.**, p. 53, pl. iv, fig. 7, *A. torta* **n. sp.**, p. 54, pl. iv, fig. 6, *A. quadrangula* **n. sp.**, p. 54, pl. iv, fig. 4, *A. hertwigi* **n. sp.**, p. 54, pl. iv, fig. 5, occurrence and diagnoses, POPOFSKY (270).
Acanthochiasmarium **n. subg.** (of *Acanthochiasma*) diagnosed, POPOFSKY (270) p. 51.
Acanthochiasmidium **n. subg.** (of *A.*) diagnosed, POPOFSKY (270) p. 53.
Acanthochiasmonium **n. subg.** (of *A.*) diagnosed, POPOFSKY (270) p. 54.
Acantholonche **n. subg.** (of *Amphilonche*) diagnosed, POPOFSKY (270) p. 113.
Acanthometra sp., in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 162; [see also under *Acanthrometron*].
Acanthometridæ (**sensu nov.**) diagnosed, POPOFSKY (270) p. 59.
Acanthometron **n. subg.**, diagnosed, POPOFSKY (270) p. 60.
Acanthometron (as genus = *Acanthometra*) p. 60, *A. bifidum*, p. 62, pl. iii, fig. 7, *A. cordiforme* **n. sp.**, p. 62, pl. vi, fig. 2, *A. sphaericum* **n. sp.**, p. 62, pl. vi, fig. 1, *A. piriforme* **n. sp.**, p. 63, pl. v, fig. 5, *A. armatum* **n. sp.**, p. 64, pl. iv, fig. 3, *A. arachnoide* **n. sp.**, p. 64, pl. vi, fig. 4, *A. spinosum* **n. sp.**, p. 66, pl. viii, fig. 5, occurrence and diagnosis, POPOFSKY (270).
Acanthonia **n. subg.** diagnosed, POPOFSKY (270) p. 84.
Acanthonia (**sensu nov.**) *abscisa* **n. sp.**, p. 86, *A. quadricorna* **n. sp.**, p. 89, pl. vii, fig. 6, occurrence and diagnoses, POPOFSKY (270).
Acanthonidæ **n. fam.**, diagnosis, POPOFSKY (270) p. 84.
Acanthonidium **n. g.**, p. 91, *A. echinoides*, p. 91, pl. i, fig. 2, *A. clapedei*, p. 91, pl. i, fig. 3, *A. acutum* **n. sp.**, p. 93, pl. vii, fig. 7, *A. astroide* **n. sp.**, p. 99, pl. vii, fig. 8, *A. tetrapterum*, p. 100, pl. vii, fig. 9, occurrence and diagnoses, POPOFSKY (270).

- Acanthoptera* n. g., p. 104, for *A. (Lithoptera) mülleri*, p. 104, *A. (L.) do-decaptera*, p. 104, pl. viii, fig. 4, diagnoses, POPOFSKY (270).
- Acolonche* n. subg. (of *Acanthonia*) diagnosis, POPOFSKY (270) p. 90.
- Actinastridae* n. fam., diagnosed, POPOFSKY (270) p. 57.
- Actinelius minimus* n. sp., diagnosis and occurrence, POPOFSKY (270) p. 49.
- Amphiacantha* n. subg. (of *Acanthonidium*) diagnosis, POPOFSKY (270) p. 100.
- Amphilonche* n. subg. p. 106, diagnosis, POPOFSKY (270).
- Amphilonche* (genus) *belonoides*, p. 107, pl. x, figg. 1 & 2, *A. pertenuis* n. sp., p. 108, pl. viii, fig. 8, pl. x, fig. 10, *A. elongata*, p. 109, pl. x, figg. 3-6, pl. ix, fig. 4, *A. heteracantha*, p. 109, pl. x, figg. 7-9, *A. quadrialata* n. sp., p. 109, pl. x, fig. 13, *A. atlantica* n. sp., p. 110, pl. iii, figg. 1-6, *A. anomala*, p. 110, pl. ix, fig. 7, *A. nodulosa* n. sp., p. 111, pl. vii, figg. 9 & 10, *A. mira* n. sp., p. 111, pl. ix, fig. 8, pl. x, fig. 12, *A. amphihastata* n. sp., p. 112, pl. viii, fig. 7, *A. biformis* n. sp., p. 113, pl. ii, fig. 8, *A. rara* n. sp., p. 113, pl. ix, fig. 6, occurrence and diagnoses, POPOFSKY (270).
- Amphilonchidium ellipsoide* n. sp., p. 114, pl. viii, fig. 11, pl. ix, fig. 5, *A. haeckeli* n. sp., p. 115, pl. ix, fig. 3, *A. nationalis* n. sp., p. 114, pl. x, fig. 11, occurrence and diagnoses, POPOFSKY (270).
- Amphimetron* n. subg. (of *Acanthometron*) diagnosed, POPOFSKY (270) p. 65.
- †*Lithasteriscus radiatus*, Miocene, Maryland, note on, MARTIN (228) p. 453, pl. cxxx, fig. 9.
- Lithoptera* n. subg., diagnosed, POPOFSKY (270) p. 103.
- Lithoptera* (genus) *fenestrata*, p. 103, pl. viii, fig. 3, occurrence and diagnosis, POPOFSKY (270).
- Phyllolonche* n. subg. (of *Phyllostaurus*) diagnosed, POPOFSKY (270) p. 68.
- Quadrimetron* n. subg. (of *Acanthometron*) p. 64, diagnosed, POPOFSKY (270).
- Quadristaurus* n. subg. (of *Acanthonia*) diagnosed, POPOFSKY (270), p. 90.
- Rosetta* n. g., p. 55, *R. elegans* n. sp., p. 56, pl. v, fig. 3, *R. triangularis* n. sp., p. 56, pl. v, fig. 2, occurrence and diagnoses, POPOFSKY (270).
- Rosettidae* n. fam., diagnosed, POPOFSKY (270) p. 55.
- Stellacantha* n. subg. (of *Acanthonidium*) diagnosed, POPOFSKY (270) p. 99.
- Stellolonche* n. subg. (of *Zygacantha*) diagnosed, POPOFSKY (270) p. 75.
- Trizona* n. g., p. 56, *T. brandti* n. sp., p. 56, pl. v, fig. 4, occurrence and diagnoses, POPOFSKY (270).
- Trizonidae* n. fam., diagnosed, POPOFSKY (270) p. 56.
- Zygacantha* n. subg., diagnosed, POPOFSKY (270) p. 71.
- Zygacantha* (genus) *latifolia* n. sp., p. 71, pl. vi, figg. 6 & 7, *Z. concreta* n. sp., p. 72, pl. v, fig. 6, *Z. septentrionalis* n. sp., p. 72, *Z. rotunda* n. sp., p. 75, *Z. elegans* n. sp., p. 75, pl. ix, fig. 2, occurrence and diagnoses, POPOFSKY (270).
- Zygacanthidae* n. fam., diagnosed, POPOFSKY (270) p. 69.
- Zygacanthidium longum* n. sp., p. 76, pl. vii, fig. 3, *Z. hastatum* n. sp., p. 77, pl. vii, fig. 4, *Z. gladiusum* n. sp., p. 77, pl. vii, fig. 1, *Z. atlanticum* n. sp., p. 83, pl. vii, fig. 5, occurrence and diagnoses, POPOFSKY (270).
- Zygapophysia* n. subg. (of *Zygacantha*) diagnosed, POPOFSKY (270) p. 73.
- Zygolonche* n. subg. (of *Amphilonche*) diagnosed, POPOFSKY (270) p. 112.
- Zygonchidium* n. subg. (of *Amphilonchidium*) diagnosed, POPOFSKY (270) p. 114.
- Zygoptera* n. g., p. 104, for *Z. (Lithoptera) quadrata*, p. 104, pl. viii, fig. 5, diagnosed, POPOFSKY (270).

(c) **Monopylaria**.:—

- †*Anthocyrtium doricum*, Miocene, Maryland, diagnosed, MARTIN (228) p. 451, pl. cxxx, fig. 8.
- †*Eucyrtidium calvertense* n. sp., Miocene, Maryland, diagnosed, MARTIN (228) p. 450, pl. cxxx, fig. 5.

†*Lithocampe marylandica* **n. sp.**, Miocene, Maryland, diagnosed, MARTIN (228) p. 450, pl. cxxx, fig. 4.

†*Stichocapsa macropora*, Miocene, Maryland, diagnosed, MARTIN (228) p. 451, pl. cxxx, figg. 6 & 7.

(d) **Tripylaria or Phæodaria**:—

Tripylaria from Atlantic plankton, notes on, BORGERT (28); found by the German Deep-sea Expedition, general account of, HÄCKER (132) pp. 122–156.

Aulacantha, p. 47, *A. scolymantha*, p. 47, pl. i, figg. 1–3, occurrence and description, IMMERMANN (148); *A. s.*, in plankton, Capri, Lo BIANCO (205) p. 58, pl. xxxvii, fig. 161.

Aulacanthidæ, description and classification of the family, IMMERMANN (148) pp. 35–39.

Aulastrum meridionale **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28) p. 737, fig. c.

Aulatractus (?) *proteus*, Atlantic plankton, note on, BORGERT (28) p. 736, fig. B.

Auloceros, p. 49, *A. arborescens* var. *dichodendrum* **n. var.**, p. 51, pl. v, figg. 11 & 12, *A. spathillaster* var. *birameus* **n. var.**, p. 50, pl. v, fig. 10, occurrence and description, IMMERMANN (148).

Aulocoryne, p. 58, *A. candelabrum*, p. 59, pl. vi, figg. 5–7, *A. dentata*, p. 59, pl. vi, fig. 8, *A. pulvinata*, p. 60, pl. vi, fig. 9, *A. zetesios*, p. 61, pl. vii, fig. 1, occurrence and description, IMMERMANN (148).

Aulographis, p. 52, *A. pandora*, p. 53, pl. v, fig. 6, *A. tetrancistra*, p. 56, pl. v, fig. 7, *A. tridactylus* **n. sp.**, p. 55, pl. v, fig. 9, *A. uncinata* **n. sp.**, p. 55, pl. v, fig. 8, occurrence and description, IMMERMANN (148).

Aulokleptes Immerk., p. 39, *A. corona* **n. sp.**, p. 41, pl. vi, fig. 1, *A. flosculus* var. *pistillum* **n. var.**, p. 42, pl. v, fig. 1, var. *inermis* **n. var.**, p. 42, pl. iii, fig. 1, var. *tridentatus* **n. var.**, p. 43, pl. vi, fig. 3, var. *typicus* **n. var.**, p. 43, pl. v, fig. 2, pl. vi, fig. 2, var. *confluens* **n. var.**, p. 43, pl. vi, fig. 4, *A. gemmascens*, p. 44, var. *bi(tri)-partitus* **n. var.**, p. 44, pl. v, fig. 3, var. *typicus* **n. var.**, p. 44, pl. v, fig. 4, var. *sceptrum* **n. var.**, p. 45, pl. v, fig. 5, *A. ramosus* **n. sp.**, p. 45, var. *longispina* **n. var.**, p. 46, pl. iii, figg. 4 & 5, pl. iv, figg. 1–3, var. *multituberculatus* **n. var.**, p. 46, pl. iii, fig. 3, occurrence and description, IMMERMANN (148).

Aulophyton **n. g.**, p. 57, *A. tetronyx* **n. sp.**, p. 57, pl. vi, fig. 10, occurrence and description, IMMERMANN (148).

Aulospathis, p. 62, *A. bifurca*, p. 62, pl. vii, fig. 2, *A. monodon* **n. sp.**, p. 63, pl. vii, fig. 3, *A. triodon*, p. 64, pl. vii, fig. 4, occurrence and description, IMMERMANN (148); *A. pinus* **n. sp.**, diagnosed, p. 127, fig. 3, *A. variabilis*, notes on the different subspp. or varieties of, p. 125, fig. 2, HÄCKER (132).

Aulosphæra sp., in plankton, Capri, Lo BIANCO (205) p. 59, pl. xxxviii, fig. 166.

Cadium inauris **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28), p. 747, fig. o.

Castanarium schütti **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28) p. 750.

Castanissa dahl **n. sp.**, p. 752, *C. hansen* **n. sp.**, p. 751, fig. p, Atlantic plankton, diagnosed, BORGERT (28).

Challengeria naresii, fig. 4a, *C. thomsoni*, fig. 4c, *C. tridens*, fig. 4d, *C. xiphodon*, fig. 4b, notes on, HÄCKER (132) p. 134.

Challengeron radians **n. sp.**, p. 743, fig. j, *C. sp.*, p. 744, fig. k, Atlantic plankton, notes on, BORGERT (28); *C. willemesii*, notes on, HÄCKER (132) p. 136, figg. 5a–c.

Cælechinus **n. g.**, a form intermediate between the *Cælodendridæ* and the

- Cælographidæ*, for *C. wapiticornis* **n. sp.**, diagnosed, HÄCKER (132) p. 123, fig. 1.
- Cælodendrum gracillimum*, p. 59, pl. xxxviii, fig. 163, *C. ramosissimum*, p. 59, pl. xxxviii, fig. 164, in plankton, Capri, Lo BIANCO (205).
- Conchellium lenticula* **n. sp.**, Atlantic plankton, diagnosed, BORGERT (28) p. 753, fig. q.
- Conchidium argiope*, p. 755, fig. r, *C. caudatum*, p. 756, fig. s, Atlantic plankton, diagnosed, BORGERT (28); *C. rhynchonella*, note on, HÄCKER (132) p. 136, fig. 7.
- Conchopsis* sp., note on, HÄCKER (132) p. 136, fig. 6.
- +*Dictyochoa fibula* (?), Miocene, Maryland, diagnosed, MARTIN (228) p. 449, pl. cxxx, fig. 3.
- +*Distephanus crux*, Miocene, Maryland, diagnosed, MARTIN (228) p. 448, pl. cxxx, figg. 1 & 2.
- Entocannula circularis*, p. 745, fig. L, *E. infundibulum*, p. 745, fig. M, Atlantic plankton, notes on, BORGERT (28).
- Gazelletta* cf. *viridis*, notes on the anatomy of, compared with that of *Planktonetta*, FOWLER (113) pp. 483-488, 3 text-figg.
- Pharyngella gastrula*, Atlantic plankton, note, BORGERT (28) p. 746, fig. N.
- Protocystis alata* **n. sp.**, p. 739, fig. E, *P. gravis* **n. sp.**, p. 741, fig. G, *P. nautiloides* **n. sp.**, p. 738, fig. D, *P. tridentata* **n. sp.**, p. 742, fig. H, *P. varians* **n. sp.**, p. 740, fig. F, Atlantic plankton, diagnoses, BORGERT (28).
- Sagenoarium* sp., Atlantic plankton, note on, BORGERT (28) p. 735, fig. A.
- Tuscaridium lucie* **n. sp.**, diagnosis and note, HÄCKER (132) pp. 140 & 149, fig. 8.
- Tuscarora bisternaria*, p. 141, fig. 9, *T. braueri* **n. sp.**, p. 143, fig. 11, var. *triangula* **n. var.**, p. 143, fig. 11a, *T. campanella* **n. sp.**, p. 143, fig. 13, *T. guleata* **n. sp.**, p. 145, fig. 12, *T. nationalis* **n. sp.**, p. 142, fig. 18, *T. scutellum* **n. sp.**, p. 143, fig. 10, occurrence and diagnoses, HÄCKER (132).
- Tuscarusa aëronauta* **n. sp.**, p. 146, fig. 16, *T. ampulla* **n. sp.**, p. 147, fig. 15, *T. chuni* **n. sp.**, p. 148, fig. 17, *T. globosa* **n. sp.**, p. 142, *T. passercula* **n. sp.**, p. 145, fig. 14, occurrence and diagnoses, HÄCKER (132).

C. SPOROZOA.

- A Sporozoan, unidentified (either a Coccidian or a Gregarine), occurrence and note on, LÉGER (183) p. 847.
- A new Sporozoan parasite of uncertain affinity, *Lymphocystis* **n. g. johnstonei** **n. sp.**, occurrence and preliminary description of, WOODCOCK (362) pp. 63-72, pl. 3.

1. TELOSPORIDEA.

(a) Gregarinidea:—

- Comparative account of development and growth in the Gregarines; their classification according to habitat, LÜHE (209) pp. 88-198, 31 text-figg.
- Cystobia irregularis* and *C. minchinii* **n. sp.**, habitat, occurrence and precocious association, or "neogamy," briefly described, WOODCOCK (364) pp. 125-128.
- Diplocystis clerci* **n. sp.**, short description of, LÉGER (189) pp. 360 & 361, text-figg. 3-5.
- Doliocystis pellucida*, attachment to intestinal host-cell described, BRASIL (41) pp. 233 & 234, text-figg. 20-22.

- Gregarina cuneata*, p. 357, text-figg. 5 & 7, *G. polymorpha*, p. 355, fig. 6, notes on development of, LÉGER & DUBOSCQ (192); *G. marteli* **n. sp.**, occurrence and short account of, LÉGER (189) pp. 358-360, text-figg. 1 & 2; *G. ovata*, general account of, PAEHLER (256) pp. 64-87, pls. v & vi.
- Steinina ovalis*, growth and development of, LÉGER & DUBOSCQ (192) p. 352, text-figg. 3 & 4.
- Stenophora aculeata* **n. sp.**, p. 368, pl. xiv, figg. 5, 14, *S. chordeumæ* **n. sp.**, p. 372, pl. xiv, figg. 11 & 15, *S. juli* (Frantz.), p. 363, pl. xiv, figg. 1-3, 13, *S. polyxeni* L. & D., p. 370, pl. xiv, fig. 6, *S. producta* **n. sp.**, p. 375, pl. xiv, figg. 7-10, *S. silene* **n. sp.**, p. 371, pl. xiv, figg. 4, 12, habitat and development described, LÉGER & DUBOSCQ (192).
- Stylorhynchus longicollis*, pl. xiv, *S. oblongatus*, pl. xv, sexual conjugation fully described in, LÉGER (188) pp. 303-357, also 8 text-figg.; *S. l.*, pp. 336-344, pl. xiii, figg. 1-16, text-figg. 1 & 2, *S. oblongatus*, pp. 344-350, pl. xiii, figg. 17-28, development and growth described, LÉGER & DUBOSCQ (192).
- Urospora lagidis*, description of trophic and sporulating phases, BRASIL (41) pp. 213-225, pl. viii, figg. 70-80, text-figg. 18.

(b) **Coccidiidea** :—

- Adelea transita* **n. sp.**, life-cycle partly described, LÉGER (189) pp. 361-365, text-figg. 6 & 7.
- Angeiocystis* **n. g.** *audouiniiæ* **n. sp.**, occurrence and brief description, BRASIL (40) pp. 645 & 646.
- Klossiella muris* Smith and Johnson, redescribed; its schizogony compared with that of *Caryotropha mesnili*, WOODCOCK (363) pp. 153-163, 2 text-figg.

(c) **Hæmosporidia** :—

- Hæmocystidium* **n. g.** *simondi* **n. sp.**, occurrence and diagnosis, CASTELLANI & WILLEY (63) p. 84, figg. 10-16.
- Halteridium danilewskyi*, occurrence and note on, CASTELLANI & WILLEY (63) p. 83, figg. 7-9; *H. noctuæ*, see under *Trypanosoma* **n.**
- Hæmogregarina biretorta* **n. sp.**, diagnosis and occurrence, NICOLLE (249) pp. 912-914, 8 text-figg.; *H. sergentium* **n. sp.**, diagnosis and occurrence, id. (248) pp. 608 & 609; *H. tunisiensis* **n. sp.**, diagnosis and occurrence, id. (247) pp. 330-332; *H. bagensis* **n. sp.**, diagnosis and occurrence, DUCLOUX (88) pp. 564 & 565; *H. b.*, further notes on, BILLET (23) pp. 602 & 603, 8 text-figg.; *H. curvirostris* **n. sp.**, diagnosis and occurrence, id. (24) pp. 741-743, 10 text-figg.; *H. tunisiensis*, notes on, id. (21) pp. 482-484, 8 text-figg.; *H. (Karyolysus) viperini* **n. sp.**, occurrence and diagnosis, id. (22) pp. 484 & 485, 6 text-figg.; *H. callionymi* **n. sp.**, p. 614, *H. cotti* **n. sp.**, p. 614, *H. blanchardi* **n. sp.**, p. 614, *H. gobii* **n. sp.**, p. 615, and *H. quadrigemina* **n. sp.**, p. 615, occurrence and diagnosis, BRUMPT & LEBAILLY (50); *H. flesi* **n. sp.**, p. 577, *H. laternæ* **n. sp.**, p. 577, and *H. platessæ* **n. sp.**, p. 576, occurrence and diagnoses, LEBAILLY (179); *H. mauritanica* **n. sp.** (near to *H. stepanowi*), from a land tortoise, described, SERGENT (314) pp. 130 & 131; *H. mirabilis* **n. sp.**, p. 86, figg. 28-38, *H. nicoriæ* **n. sp.**, p. 85, figg. 17-27, occurrence and diagnoses, CASTELLANI & WILLEY (63); *H. psammodromi* **n. sp.**, allied to *H. sergentium*, described, SOULIÉ (327) pp. 371-373.
- Helcosoma* **n. g.** *tropicum* **n. sp.**, name proposed for the parasite of Delhi boil, Oriental sore, etc. [closely allied to *Piroplasma donovani*]; description of, and relation to host's tissues, WRIGHT (367) pp. 472-482, 4 pls.; notes on the same parasite (regarded as a *Piroplasma*), MESNIL, NICOLLE & REMLINGER (235) pp. 167-169.

- "*Leishmania*" **nom. nov.** proposed for the Leishman-Donovan parasite of Dum-dum fever [*Piroplasma donovani*], ROSS (289) pp. 79-82, 1 pl.
- "*Leucocytozoon*" *danilewskyi*, distinction of male and female forms in, BERESTNEFF (18) pp. 381-386, pl. xv.
- Piroplasma bigeminum*, p. 349, *P. canis*, p. 351, *P. equi*, p. 350, and *P. ovis*, p. 349, occurrence in Spanish animals and notes on, DIAZ VILLAR (82); *P. donovani*, relation to leucocytes and blood-corpuscles, excellent figures of, DONOVAN (83) 1 pl.; *P. d.*, minute forms, free or endoglobular, in peripheral circulation, LAVERAN & MESNIL (173) pp. 187-189; *P. d.*, (the "Leishman-Donovan bodies") development of a flagellate (Trypanosome) phase in, in cases of Kala-Azar, etc., ROGERS (286) pp. 367-377, pl. xxv; *P. hominis* **n. sp.**, causing "spotted fever" or tick-fever in man, description of, WILSON & CHOWNING (360) pp. 46-48, pl. ii.

2. NEOSPORIDIA.

(a) Myxosporidia:—

- Glugea* [= *Nosema*] *anomala*, general description of growth and development in, STEMPPELL (336) pp. 1-42, pls. i-iii; *G. cæculiæ* **n. sp.**, p. 646, fig. 16, *G. halesidotidis* **n. sp.**, p. 645, fig. 15, *G. heliotidis* **n. sp.**, p. 645, fig. 14, *G. hydriæ* **n. sp.**, p. 646, fig. 26, *G. micrattaci* **n. sp.**, p. 646, fig. 27, from Brazilian Lepidoptera, notes on spores, LUTZ & SPLENDRE (213); *G. stephani*, description of, chiefly with regard to the nature of the parasitic invasion, WOODCOCK (361) pp. 126-142, pl. ii.
- Lentospora* **nom. nov.** for *Myxobolus cerebrealis* Hofer, occurrence, diagnostic characters and description of, PLEHN (269) pp. 145-166, pl. v, 7 text-figg.
- Nosema*, see under *Glugea*.
- Sphaerospora platessæ* **n. sp.**, occurrence and diagnosis, WOODCOCK (361) p. 60, pl. ii, fig. 7d.
- Thelohanina legeri* **n. sp.**, description and development of spores, HESSE (140) pp. 570 & 571 and (141) pp. 571 & 572, 10 text-figg.; *T. mænadis* **n. sp.**, account of, and nuclear division in, PEREZ (263) pp. 214 & 215.

(b) Actinomyxidæ:—

- Sphaeractinomyxon* **n. g.** *stolci* **n. sp.**, description and development of, CAULLERY & MESNIL (64) pp. 408-410.
- Triactinomyxon*, notes on the genus, LÉGER (183) pp. 846 & 847; *T. ignotum*, sporulation of, described, LÉGER (182) pp. 844-846, 4 text-figg.

(c) Sarcosporidia:—

- Sarcocystis tenella bubali* [probably *S. siamensis* Linstow], occurrence in buffaloes and notes on, WILLEY, CHALMERS & PHILIP (359), pp. 65-72, 2 figg.

SPOROZOA INCERTÆ SEDIS.

Serosporidia:—

- Cytoryctes variolæ*, detailed account of life-cycle, relationships, and relation to the lesions in small-pox of, CALKINS (58) pp. 136-167, pls. xvi-xix; scheme of the life-history, description of the cytoplasmic phases (the "vaccinia" form) of, TYZZER (345) pp. 214-219, 225 & 226, pl. xxvi.
- Fam. *Cytoryctidæ* **n. fam.**, defined, CALKINS (58). [See under II. F.]

Caryoryctes n. g. *cytortyctoides* n. sp., an intranuclear parasite of *Paramœcium*, description and relationships, CALKINS (58) pp. 164 & 165, pl. 20.

[For various enigmatical bodies (probably, as a rule, cell-inclusions) which their describers would include in the "Sporozoan lumber-room" see end of II. c. 2.]

D. MASTIGOPHORA.

1. FLAGELLATA (EUFLAGELLATA).

(a) *Lissoflagellata* :—

Bodo lucertæ, full description of, PROWAZEK (278) pp. 19–32, pl. ii, figg. 43–50, pl. iii, pl. iv, figg. 82–87.

Chlamydomonas communis n. sp., pp. 374 & 388, fig. 1, *C. globosa* n. sp., pp. 375 & 389, *C. gracilis* n. sp., pp. 374 & 388, plankton, Lake Erie, diagnosed, SNOW (326).

Chrysosphaerella longispina Lemm., occurrence and note on, ZACHARIAS (368) p. 194, fig. 1.

Dicercomonas, distinction of the genus from *Hexamitus*, p. 130, *D. (H.) intestinalis*, p. 127, fig. 6, *D. muris*, p. 122, figg. 1–5, account of, FOA (109).

Dinobyon cylindricum, Ausgraben lakelets, Plön, notes on, LEMMERMAN (128) p. 306, figg. 2 & 3.

Euglena deses, note on, LORD (207) pp. 75 & 76, pl. iii, fig. 2.

Herpetomonas muscæ-domesticæ, full description of habitat and life-cycle, PROWAZEK (277) pp. 440–452, 7 text-figg.; *H. sarcophagæ* n. sp., occurrence and notes on, id. pp. 440 & 445; *H. subulata* n. sp., description and occurrence, LÉGER (186) pp. 613–615, 5 text-figg.; affinities of, with *H. (Crithidia) minuta*, LÉGER (187) p. 615.

Hexamitus. See under *Dicercomonas*.

Jænia annectens, description of, and processes of division in, GRASSI & FOA (126) pp. 241–253, 17 text-figg.

Mallomonas acaroides, occurrence and note on, ZACHARIAS (368) p. 205, fig. 3.

Mastigamæba aspera, occurrence and description, CASH (60) p. 220, pl. xxvi, figg. 3 & 4.

Octomitus [n. g. ?] *intestinalis* n. sp., occurrence and short description, PROWAZEK (278) pp. 38 & 39, pl. iv, fig. 107.

Ocyglossa n. g. *velox* n. sp., type of a new family allied to the *Chromomonadineæ*, brief description of, GIARD (116) p. 296.

Phyllomitus amylophagus, occurrence and note on, SMITH (325) p. 48.

Spirochæta ("Hæmamæba") *ziemannii*, full account of, both in trypaniform and hæmosporidian phases, SCHAUDINN (301) pp. 429–435, 5 text-figg.

Synura uella, occurrence and note on, ZACHARIAS (368) p. 200, fig. 2.

Trichomastix lacertæ, full account of life-cycle in, PROWAZEK (278) pp. 4–19, pl. i, pl. ii, figg. 20–42.

Trichomonas intestinalis, conjugation (heterogamy) in, notes on, PROWAZEK (278) pp. 34 & 35, pl. iv, figg. 93–102; *T. lacertæ* n. sp., occurrence and short account of; agreement in main features with *T. intestinalis*, id. pp. 32–34, pl. iv, figg. 88–92.

Trichonympha agilis Leidy, division in, described, FOA (110) pp. 618–625, 5 text-figg.

Trypanophis n. g. for *Trypanosoma grobbeni*, redescribed, KEYSSELITZ (156, pp. 367–375, 3 text-figg.

Trypanoplasma borreli, redescription and affinities of, LÉGER (180) pp. 824 & 825 & (181) pp. 856–859, 5 text-figg.; *T. varium* n. sp., and its further evolution in a leech, described, id. (185) pp. 345–347; *T.* of the minnow (Léger [180]) is identical with *T. borreli* of the rudd, LAVERAN (172) p. 250.

Trypanosoma abramis n. sp., p. 388, *T. danilewskyi* n. sp., p. 386, 1 fig., *T. paddæ* n. sp., p. 361, *T. tinca* n. sp., p. 387, 2 figg., occurrence and diagnoses, LAVERAN & MESNIL (176); *T. paddæ*, described, THIROUX (342) pp. 145–148, 5 text-figg.; *T. barbatulæ* n. sp. and its further development in a leech, described, LÉGER (184) pp. 344 & 345; *T. brucei*, artificial cultivation of, NOVY & McNEAL (251) pp. 1–30; *T. b.*, good account of morphology of (unfortunately unillustrated), SCHILLING (304) pp. 484–496; *T. callionymi* n. sp., p. 613, *T. cotti* n. sp., p. 613, *T. delagei* n. sp., p. 614, *T. gobii* n. sp., p. 613, *T. limandæ* n. sp., p. 614, occurrence and diagnoses, BRUMPT & LEBAILLY (50); the parasite of sleeping-sickness (*T. castellanii* Kruse, so-called) is undoubtedly identical with that of *T.*-fever (*T. gambiense* Dutton), hence the former name is not to be retained, BRUMPT & WURTZ (53) p. 573 [in any case it could not, as *T. ugandense* would take priority]; *T. dimorphon* Dutton & Todd, different forms of, described, LAVERAN & MESNIL (174) pp. 732–734, 7 text-figg.; *T. equiperdum*, notes on different forms and habitat of, LINGARD (204) pp. 537–547; *T. evansi*, evolution of, HOLMES (146) pp. 210–214, 2 pls.; *T. flesi* n. sp., p. 577, *T. laternæ* n. sp., p. 577, *T. platessæ* n. sp., occurrence and diagnoses, LEBAILLY (179); *T. granulosum* (from the eel), multiplication of, SABRAZÈS & MURATET (295) p. 67, behaviour in sera and other liquids, id. (296) p. 159; *T. inopinatum* n. sp., from the green frog, described, SERGENT (313) pp. 123 & 124; *T. i.*, its probable ontogenetic connection with a *Drepanidium*, BILLET (20) pp. 574–576, and (26) pp. 161–163, 16 text-figg.; *T. lewisi*, observations on, BYLOFF (54) pp. 111–138, 2 pls.; *T. nelspruitense* n. sp., occurrence and description, LAVERAN (171) pp. 158–160, 2 text-figg.; *T. (Halteridium) noctuæ*, full account of, both in trypaniform and hæmosporidian phases, SCHAUDINN (301) pp. 390–429, 15 text-figg.; *T. theileri* (?), occurrence in German East Africa and remarks on, PANSE (257) pp. 376–378, 1 fig.; *T. ugandense* Castellani, is undoubtedly identical (and therefore synonymous) with *T. gambiense* Dutton, LAVERAN (165) pp. 841–844.

A Trypanosome sp. indet., noted in a rabbit, brief remarks on, PETRIE (266) pp. 484–486.

(b) **Choanoflagellata**:—Vacant.

2. SILICOFLLAGELLATA.

Vacant.

3. DINOFLAGELLATA.

(a) **Adinida**:—Vacant.

(b) **Dinifera**:—

Ceratium hirundinella, plankton, Alpine lakelets, notes on, BREHM & ZEDERBAUER (42) pp. 640 & 643, figg. 4 & 5; *C. h.*, Ausgraben lakelets, Plön, note on, LEMMERMAN (198) p. 308, figg. 4–14; *C. macroceros*, p. 122, fig. 2, *C. tripos* var. *arcuatum*, p. 122, figg. 3–5, *C. t.* var. *bucephalum*, p. 125, fig. 13, *C. flagelliferum*, p. 123, figg. 6 & 7, *C. f.* var. *filiformis* n. var., p. 123, fig. 11, *C. contortum*, p. 124, fig. 9, *C. platycorne*, p. 124, fig. 10, *C. arcticum*, p. 125, fig. 14, *C. furca*, p. 126,

figg. 15 & 17-19, *C. belone*, p. 126, fig. 16, *C. gravidum*, p. 127, fig. 21, *C. lineatum*, p. 127, fig. 20, *C. fusus*, p. 127, figg. 22 & 23, var. *concava*, p. 128, fig. 24, var. *stricta* **n. var.**, p. 128, fig. 25, occurrence, Japanese Seas, and notes, OKAMURA & NISHIKAWA (253).

Glenodinium bipes **n. sp.**, occurrence, Iceland, and diagnosis, PAULSEN (258) p. 21, figg. 3 & 4.

Gomiodoma ostensfeldii **n. sp.**, occurrence and diagnosis, PAULSEN (258) p. 20, text-fig. 2.

Gonyaulax triacantha, occurrence and note on, PAULSEN (258) p. 22, fig. 5.

Heterocapsa triquetra, occurrence and note on, PAULSEN (258) p. 22, fig. 6.

Peridinium decipiens, p. 24, fig. 11, *P. islandicum* **n. sp.**, p. 23, fig. 7, *P. ovatum*, p. 23, fig. 8, *P. roseum* **n. sp.**, p. 23, fig. 9, *P. subinermis* **n. sp.**, p. 24, fig. 10, occurrence and notes on, PAULSEN (258).

4. RHYNCHOFLAGELLATA.

Noctiluca miliaris, note on abundant occurrence of, BROWNE (45) p. 121.

E. CILIOPHORA.

Fossil Infusoria (allied to *Cinetoconia*) from Coal-measures, described, RENAULT (284) pp. 25-27, pl. A.

1. CILIATA.

Ciliates, remarks on the ultimate protoplasmic structure of, FAURÉ (97) pp. 124 & 125.

(a) Holotricha:—

Anoplophrya brasili **n. sp.**, occurrence and note on, LÉGER & DUBOSCQ (193) p. 98; *A. b.*, described, id. (194) pp. 337-343, 2 text-figg.; *A. mytili*, note on, and its systematic position, RAYMOND (281) pp. 215 & 216, 2 text-figg.

Anophrys echini **n. sp.**, occurrence and description, DI MAURO (231) pp. 13-19, 3 text-figg.

Blepharostoma pigerrima, occurrence and note on, SMITH (325) p. 51.

Chilodon notamoibos **n. sp.**, described, MAGINZKY (217) pp. 1-5, 1 pl., 6 text-figg.

Dileptus gigas, hunger-periods and conjugation in, HERTWIG (139) pp. 1-3.

Discophrya gigantea, from hind-gut of *Discoglossus pictus*, general description of, COHN (77) pp. 43-53, pl. iv, figg. 1-8.

Lembus velifer, note on, SMITH (325) p. 50; (Smith would include in this sp., *L. infusionum*, *intermedius*, *ornatus* and *striatus*).

Loxodes rostrum, note on nuclei of, SMITH (325) p. 49.

Nassula sp., parasitic in cells of *Valonia*, a Siphonaceous Alga, KÜSTER (162) pp. 384-390.

Opalina intestinalis, from hind-gut of *Discoglossus pictus*, account of, COHN (77), pp. 53-62, pl. iv, figg. 9-17; *O. ranarum*, curious abnormal (?) individual of, id. p. 56, pl. iv, figg. 18 & 19; *O. ranarum*, occurrence of nuclear changes in, which are considered to represent the differentiation of a micronuclear element, LOEWENTHAL (206) pp. 387-390, 10 text-figg.; *O. saturnalis* **n. sp.**, occurrence and note on, LÉGER & DUBOSCQ (193) p. 99; *O. s.*, described, id. (195) pp. 343-356, pl. xiv.

Paramacium bursaria, conjugation in, described, HAMBURGER (134) pp. 199-239, pls. vii-ix, 2 text-figg.; *P. caudatum*, photographs illustrative of, under different physiological conditions, CALKINS (56), 3 pls.; *P.*, basal corpuscles as points of attachment for the vibratile organellæ of, MITROPHANOW (238) pp. 167-169, figg. 3 & 4; trichocysts of, structure

and function, id. (239) pp. 78-91, 9 figg., and (241) pp. 1-18, 9 text-figg.

(b) **Heterotricha:**—

Cyttarocyclus [*Codonella*] *annulifera*, p. 128, fig. 9, *C. claparedei*, p. 125, fig. 3, *C. markusovszkyi*, p. 125, figg. 4-6, *C. orthoceras*, p. 128, figg. 10-23, *C. spiralis*, p. 125, fig. 2, *C. subulatus*, p. 128, figg. 7 & 8, occurrence and notes on, ENTZ (93).

Dictyocysta templum, p. 130, figg. 24-29, occurrence and note on, ENTZ (93).

Petalotricha [*Codonella*, *Cyttarocyclus*?] *ampulla*, p. 132, figg. 30-36, occurrence and note, ENTZ (93).

Spirostomum ambiguum, localization of respiration in the cytoplasm of, VERWORN (351) pp. 566-569.

Stentor caeruleus, effects on metabolism and division in, of different salts and nutritive conditions, PETERS (265) pp. 441-516.

Tintinnopsis karajacensis var. *acuta* n. var., occurrence and note, PAULSEN (258) p. 24, fig. 12.

Tintinnus fraknoi and *T. inquilinus*, structural details and multiplication of, SHVEIER (316) pp. 158-160, 164.

(c) **Hypotricha:**—

Gonostomum pediculiforme, note on, SMITH (325) p. 52.

(d) **Peritricha:**—

Carchesium aselli, structure of contractile stalk in, FAURÉ (98) pp. 19 & 20.

Epistylis gasterostei n. sp., *E. daphniæ* n. sp., note on structure of peduncle in, FAURÉ (101) p. 506.

Intranstylum n. g. founded on structure of peduncle in certain forms; *I. gammari* n. sp., *I. aselli* (*Carchesium a.*), structure of fixative apparatus in, FAURÉ (101) pp. 506 & 507.

Opercularia clepsinis n. sp., a colonial form, occurrence and description, POPOW (271) pp. 340-343, 2 figg.; *O. fabrei* n. sp., p. 188, fig. 3, *O. gracilis* n. sp., p. 187, fig. 2, *O. kenneguyi* n. sp., p. 183, fig. 1, *O. microdiscum* n. sp., p. 190, fig. 4, occurrence and description, FAURÉ (105); *O. naucoris* n. sp., and *O. stenostoma*, structure of contractile apparatus in, FAURÉ (99) pp. 576 & 577; *O. s.*, nuclear purification during division in, FAURÉ (103) p. 429.

Vaginicolinæ (*Cothurnia*, *Pyxicola*, *Vaginicola* etc.), structure and formation of the enveloping shell or "house," FAURÉ (104) pp. 551 & 552.

Vorticella citrina [see under *V. convallaria*]; *V. convallaria*, adipogenic process and formation of a pigment in, giving rise to a "*V. citrina*-" form, which is not, therefore, distinct, FAURÉ (102) pp. 390-392.

Vorticellidæ, minute structure of protoplasm in, described, FAURÉ (96) pp. 764-766.

2. SUCTORIA (TENTACULIFERA).

Astrophrya n. g. *arenaria* n. sp., occurrence and description, AVERINTZEV (6) pp. 425 & 426, 1 text-fig.

CORRIGENDUM: Protozoa 1903.

p. 45. "*Lysiopetalum lactarium*—*G. calverti*, n. sp.," should be placed under Myriapoda and not under Insecta.

INDEX TO NAMES

OF

NEW GENERA AND SUBGENERA

MENTIONED IN VOLUME XLI,

INCLUDING NEW NAMES FOR GENERA PREVIOUSLY ESTABLISHED.*

- | | |
|--|--|
| <p>Acalyptops, <i>Hartmann</i>, Ins. 171 Acanthapophysia, <i>Popofsky</i>, Prot. 51 Acantherus, <i>Scudder</i>, Ins. 359 Acanthidiellum, <i>Kirkaldy</i>, Ins. 315 Acanthochiasmarium, <i>Popofsky</i>, Prot. 51 Acanthochiasmidium, <i>Popofsky</i>, Prot. 51 Acanthochiasmonium, <i>Popofsky</i>, Prot. 51 Acantholobus, <i>Hancock</i>, Ins. 359 Acantholonche, <i>Popofsky</i>, Prot. 51 Acanthometopon, <i>Ashmead</i>, Ins. 226 Acanthometron, <i>Popofsky</i>, Prot. 51 Acanthomima, <i>Kirby</i>, Ins. 355 Acanthonia, <i>Popofsky</i>, Prot. 51 Acanthonidium, <i>Popofsky</i>, Prot. 51 Acanthopecten, <i>Girty</i>, Moll. 89 Acanthoptera, <i>Popofsky</i>, Prot. 52 Acatapaustus, <i>Bethune-Baker</i>, Ins. 254 Acco, <i>Bethune-Baker</i>, Ins. 254 Acheles, <i>Oudemans</i>, Arachn. 39 Achoria, <i>Meyrick</i>, Ins. 292 Aclemmysa, <i>Reitter</i>, Ins. 198 Acocephalites, <i>Meunier</i>, Ins. 125 Acolonche, <i>Popofsky</i>, Prot. 52 Aconias, <i>Cameron</i>, Ins. 218 Acrohyænodon, <i>Ameghino</i>, Mamm. 50 Acromecis, <i>Mabille</i>, Ins. 251</p> | <p>Acropithecus, <i>Ameghino</i>, Mamm. 49 Acrothoracica, <i>Gruvel</i>, Crust. 55 Actenoptera, <i>Czerny</i>, Ins. 310 Adiastulus, <i>Raffray</i>, Ins. 139 Adosomus, <i>Faust</i>, Ins. 172 Ægidinus, <i>Arrow</i>, Ins. 150 Aella, <i>Mabille</i>, Ins. 251 Æluroides, <i>Tullgren</i>, Ins. 210 Æolocoris, <i>Reuter</i>, Ins. 324 Afraniella, <i>Schouteden</i>, Ins. 315 Afrorhytida, <i>Kobelt</i>, Moll. 61 Agaleptus, <i>Gahan</i>, Ins. 186 Agasicles, <i>Jacoby</i>, Ins. 190 Agathispa, <i>Weise</i>, Ins. 196 Agathorhipis, <i>Fauvel</i>, Ins. 162 Agraptocoris, <i>Reuter</i>, Ins. 324 Agriosphyræna, <i>Fowler</i>, Pisces 40 Ainocottus, <i>Jordan and Starks</i>, Pisces 29 Aipeiopsis, <i>Péringuey</i>, Ins. 153 Aissoblatta, <i>Handlirsch</i>, Ins. 125 Alabastrina, <i>Kobelt</i>, Moll. 64 Alæops, <i>Jordan and Starks</i>, Pisces 32 Alamprella, <i>Horváth</i>, Ins. 315 Alchisme, <i>Kirkaldy</i>, Ins. 336 Alcichthys, <i>Jordan and Starks</i>, Pisces 29 Algoala, <i>Jacoby</i>, Ins. 190 Algoasaurus, <i>Broom</i>, Rept. 29 Allexetastes, <i>Kokujev</i>, Ins. 218 Allochalcis, <i>Kieffer</i>, Ins. 226</p> |
|--|--|

* The total number of names in this Index is 2095, distributed as follows:—*Mammalia*, 113; *Aves*, 9; *Reptilia* and *Batrachia*, 45; *Pisces*, 88; *Tunicata*, 12; *Mollusca*, 210; *Brachiopoda*, 2; *Bryozoa*, 13; *Crustacea*, 68; *Arachnida*, 97; *Myriopoda*, 23; *Insecta*, 1271; *Echinoderma*, 23; *Vermes*, 37; *Cœlenterata*, 15; *Spongiae*, 21; *Protozoa*, 48. The total last year was 2054.

- Allocosa, *Banks*, Arachn. 33
 Allocota, *Meyrick*, Ins. 292
 Alloderma, *Ashmead*, Ins. 226
 Alloonycha, *Reuter*, Ins. 325
 Allogobius, *Waite*, Pisces 31
 Alloiodoris, *Bergh*, Moll. 71
 Allokotarsa, *Péringuey*, Ins. 153
 Allonema, *Ulrich and Bassler*, Bry. 16
 Allonomyna, *Dyar*, Ins. 292
 Allothrombium, *Berlese*, Arachn. 39
 Allotrypes, *François*, Ins. 150
 Alogistotarsa, *Péringuey*, Ins. 153
 Aloha, *Kirkaldy*, Ins. 332
 Alophomyia, *Ashmead*, Ins. 226
 Alophus, *Ashmead*, Ins. 226
 Alpha, *Dalla Torre*, Ins. 207
 Althos, *Kirkaldy*, Ins. 319
 Alystria, *Cameron*, Ins. 218
 Amblysomus, *Faust*, Ins. 172
 Amelococcus, *Marchal*, Ins. 338
 Ameroseius, *Berlese*, Arachn. 39
 Ametallon, *Ashmead*, Ins. 226
 Amfortas, *Kirkaldy*, Ins. 332
 Amiana, *Dyar*, Ins. 266
 Ammodillus, *Thomas*, Mamm. 39
 Ammonella, *Walther*, Spong. 16
 Amphiacantha, *Popofsky*, Prot. 52
 Amphiareus, *Distant*, Ins. 324
 Amphilonche, *Popofsky*, Prot. 52
 Amphimetron, *Popofsky*, Prot. 52
 Amphionides, *Zimmer*, Crust. 37
 Amphitemnus, *Ameghino*, Mamm. 50
 Amphoraceras, *Bethune-Baker*, Ins. 266
 Amphoreopsis, *Crick*, Moll. 61
 Anabaia, *Clarke*, Brach. 7
 Anacamptomyia, *Bischof*, Ins. 308
 Anacanthotermes, *Jacobson*, Ins. 345
 Anacharoides, *Cameron*, Ins. 235
 Anaclastus, *Turner*, Ins. 286
 Anadiasa, *Aurivillius*, Ins. 255
 Anadolops, *Ameghino*, Mamm. 50
 Anapalta, *Warren*, Ins. 272
 Anaphragma, *Ulrich and Bassler*, Bry. 11
 Anaptilora, *Meyrick*, Ins. 292
 Anarchita, *Bolívar*, Ins. 359
 Anasopsis, *Raffray*, Ins. 139
 Anasticomerus, *Heller*, Ins. 172
 Anchitheriomys, *Roger*, Mamm. 41
 Anepsiovalgus, *Kolbe*, Ins. 157
 Angieocystis, *Brasil*, Prot. 55
 Angerianus, *Distant*, Ins. 325
 Angigaster, *Pilsbry and Hirase*, Moll. 81
 Anisodolops, *Ameghino*, Mamm. 50
 Anisolasia, *Warren*, Ins. 272
 Anisopsammia, *Marenzeller*, Cœl. 27
 Anisopsis, *Fauvel*, Ins. 133
 Annomatophilus, *Wasmann*, Ins. 133
 Anomiopsyllus, *Baker*, Ins. 313
 Anommatoxenus, *Wasmann*, Ins. 133
 Anorygma, *Horváth*, Ins. 320
 Antankaria, *Distant*, Ins. 330
 Antennocelæno, *Berlese*, Arachn. 40
 Antennurella, *Berlese*, Arachn. 40
 Anthisauripus, *Lull*, Rept. 29
 Anthodictes, *Holmberg*, Ins. 200
 Antholcus, *Konow*, Ins. 236
 Anthracentomon, *Handlirsch*, Ins. 125
 Anthraconema, *Strassen*, Verm. 52
 Anthracopalara, *Handlirsch*, Ins. 126
 Anthrenosoma, *Jordan*, Ins. 183
 Anthrocomastax, *Handlirsch*, Ins. 126
 Antiagrion, *Ris*, Ins. 348
 Antilocoris, *Kirkaldy*, Ins. 320
 Antispira, *Perner*, Moll. 82
 Antistasea, *Bischof*, Ins. 308
 Aphaneramma, *Woodward*, Rept. 40
 Aphanomastix, *Heller*, Ins. 172
 Aphobetoideus, *Ashmead*, Ins. 227
 Aphrotus, *Péringuey*, Ins. 166
 Aphylostylus, *Whiteaves*, Cœl. 28
 Aphyomerus, *Hartmann*, Ins. 172
 Apiciopsis, *Warren*, Ins. 272
 Aploderina, *Raffray*, Ins. 139
 Aporama, *Warren*, Ins. 272
 Apocryptophagus, *Ashmead*, Ins. 227
 Aporexius, *Raffray*, Ins. 139
 Aporodesminus, *Silvestri*, Myr. 13
 Aporotopus, *Faust*, Ins. 172
 Aptistatus, *Walsingham*, Ins. 292
 Aprunella, *Bianchi*, Aves 58
 Apsophus, *Hartmann*, Ins. 172
 Apternodus, *Matthew*, Mamm. 36
 Apterotettix, *Hancock*, Ins. 359
 Aptodrilus, *Cognetti*, Verm. 38
 Aragonia, *Ameghino*, Mamm. 50
 Araia, *Jordan and Starks*, Pisces 32
 Araspus, *Distant*, Ins. 325
 Arawacus, *Kaye*, Ins. 249
 Archæodolops, *Ameghino*, Mamm. 50
 Archæoscina, *Stebbing*, Crust. 46
 Archiascidia, *Julin*, Tun. 4
 Archoblattina, *Sellards*, Ins. 126
 Archotermopsis, *Desneux*, Ins. 345

- Arculanus, *Distant*, Ins. 325
 Arcynopteryx, *Klapálek*, Ins. 347
 Argenis, *Distant*, Ins. 325
 Argyrolagus, *Ameghino*, Mamm. 50
 Argyrolambda, *Ameghino*, Mamm. 49
 Argyromanis, *Ameghino*, Mamm. 50
 Argyrostroma, *Aurivillius*, Ins. 255
 Ariomma, *Jordan and Snyder*, Pisces 38
 Aristodacnus, *Maindron*, Ins. 128
 Armachanus, *Distant*, Ins. 325
 Arnulphus, *Distant*, Ins. 324
 Arotis, *Mabille*, Ins. 251
 Arotia, *Meyrick*, Ins. 292
 Arraphytarsa, *Péringuey*, Ins. 153
 Arrhenoplita, *Fauvel*, Ins. 166
 Arunta, *Distant*, Ins. 330
 Asbolis, *Mabille*, Ins. 251
 Aselloidea, *Richardson*, Crust. 39
 Asemogena, *Péringuey*, Ins. 166
 Asinocleonus, *Faust*, Ins. 172
 Asmunda, *Dall and Bartsch*, Moll. 82
 Aspideretes, *Hay*, Rept. 30
 Aspidosaurus, *Broili*, Rept. 40
 Astatheros, *Pellegrin*, Pisces 35
 Astatoreochromis, *Pellegrin*, Pisces 36
 Astatotilapia, *Pellegrin*, Pisces 36
 Astratus, *Fairmaire*, Ins. 172
 Astrocharis, *Koehler*, Echin. 81
 Astrodia, *Verrill*, Echin. 82
 Astrophrya, *Averintzev*, Prot. 60
 Atactogaster, *Faust*, Ins. 172
 Atelias, *Kirkaldy*, Ins. 315
 Atenisodus, *Raffray*, Ins. 140
 Atherinomorus, *Fowler*, Pisces 41
 Atlantotlos, *Doflein*, Crust. 31
 Audernacus, *Distant*, Ins. 322
 Aulacomima, *Meyrick*, Ins. 292
 Aulocyathus, *Marenzeller*, Cœl. 28
 Aulophyton, *Immermann*, Prot. 53
 Aulopocella, *Maplestone*, Bry. 13
 Auriptygma, *Perner*, Moll. 82
 Avellopsis, *Purcell*, Arachn. 22
 Aximogastra, *Ashmead*, Ins. 227
 Aximopsis, *Ashmead*, Ins. 227
 Axiologa, *Turner*, Ins. 255
 Axiothella, *Verrill*, Verm. 32
 Azuma, *Needham*, Ins. 348
 Bæosomus, *Brown*, Ins. 172
 Baldra, *Dall and Bartsch*, Moll. 83
 Baliosus, *Weise*, Ins. 196
 Ballonema, *Verhoeff*, Myr. 9
 Baptarma, *Smith*, Ins. 266
 Baptopoda, *Bernhauer*, Ins. 134
 Barentsia, *Stebbing*, Crust. 43
 Barra, *Jordan*, Ins. 183
 Bartacus, *Distant*, Ins. 322
 Baruna, *Stebbing*, Crust. 30
 Bathmedonia, *Reichenow*, Aves 56
 Bathypera, *Michaelsen*, Tun. 5
 Batribolbus, *Raffray*, Ins. 140
 Batrisiella, *Raffray*, Ins. 140
 Batrisomalus, *Raffray*, Ins. 140
 Bayerus, *Distant*, Ins. 322
 Bergias, *Kirkaldy*, Ins. 332
 Bergrothina, *Schouteden*, Ins. 316
 Bergthora, *Kirkaldy*, Ins. 315
 Beriqua, *Péringuey*, Ins. 153
 Berleria, *Loriol*, Moll. 82
 Bero, *Jordan and Starks*, Pisces 29
 Berthais, *Melville*, Moll. 82
 Bertsa, *Kirkaldy*, Ins. 324
 Besla, *Dall and Bartsch*, Moll. 83
 Beta, *Dalla Torre*, Ins. 207
 Betulodes, *Thierry-Mieg*, Ins. 273
 Bibiodes, *Coquillett*, Ins. 302
 Bibla, *Mabille*, Ins. 251
 Biblomimus, *Raffray*, Ins. 140
 Bimicroporella, *Canu*, Bry. 13
 Birulia, *Brazhnikov*, Crust. 35
 Blaberops, *Jordan*, Ins. 183
 Blæsochaetophora, *Czerny*, Ins. 310
 Blatticida, *Ashmead*, Ins. 227
 Blattivorus, *Chobaut*, Ins. 170
 Blattodromus, *Reitter*, Ins. 145
 Boethoos, *Kirkaldy*, Ins. 336
 Bolbophites, *Fauvel*, Ins. 134
 Boloceropsis, *McMurrich*, Cœl. 28
 Bolosoma, *Ijima*, Spong. 15
 Bombylodes, *Fauvel*, Ins. 134
 Boopinus, *Klima*, Ins. 134
 Bothriocerodes, *Fowler*, Ins. 332
 Bothriogaster, *Fuhrmann*, Verm. 48
 Bothrochalcis, *Cameron*, Ins. 235
 Botocudo, *Kirkaldy*, Ins. 320
 Botteria, *Brusina*, Moll. 64
 Boulengerochromis, *Pellegrin*, Pisces 35
 Brabiroides, *Warren*, Ins. 273
 Brachybrachium, *Williston*, Rept. 33
 Brachycaudonia, *Ashmead*, Ins. 227
 Brachyleonius, *Faust*, Ins. 173
 Brachyctenistis, *Warren*, Ins. 273
 Brachymitra, *Kolbe*, Ins. 157
 Brachynillus, *Reitter*, Ins. 129
 Brachyphyma, *Horváth*, Ins. 320
 Brachypodopsis, *Piersig*, Arachn. 40
 Brachystichia, *Warren*, Ins. 273
 Brachytrita, *Swinhoe*, Ins. 273
 Bradamina, *Fairmaire*, Ins. 190
 Bradyrus, *Gill*, Pisces 39

- Brassivola, *Distant*, Ins. 322
 Braunsella, *Buckman*, Moll. 60
 Brepholoxa, *van Duzee*, Ins. 316
 Broconius, *Desbrochers*, Ins. 173
 Brontispa, *Sharp*, Ins. 196
 Brontostoma, *Kirkaldy*, Ins. 322
 Bruchobius, *Ashmead*, Ins. 227
 Brulleia, *Szépligeti*, Ins. 224
 Bryaxina, *Raffray*, Ins. 140
 Bryocrypta, *Meunier*, Ins. 124
 Bryothinusa, *Casey*, Ins. 134
 Buena, *Kirkaldy*, Ins. 329
 Bulua, *Boulenger*, Rept. 36
 Bunoderus, *Raffray*, Ins. 140
 Burma, *Kirkaldy*, Ins. 315
 Burtonilla, *Smith*, Moll. 79
 Busseola, *Thurau*, Ins. 266
 Buttia, *Warren*, Ins. 273

 Cabnia, *Dyar*, Ins. 287
 Cacama, *Distant*, Ins. 330
 Cacotherapia, *Dyar*, Ins. 287
 Cadmon, *Cambridge*, Arachn. 21
 Caducifer, *Dall*, Moll. 77
 Cænophilus, *Ameghino*, Mamm. 49
 Calamacris, *Rehn*, Ins. 359
 Caliothrips, *Daniel*, Ins. 349
 Callanthribus, *Jordan*, Ins. 183
 Callergates, *Lameere*, Ins. 186
 Callicratides, *Distant*, Ins. 325
 Callipona, *Turner*, Ins. 273
 Calliseidus, *Horváth*, Ins. 320
 Callismicra, *Kieffer*, Ins. 227
 Callogyra, *Verrill*, Cœl. 28
 Callolongchæus, *Dall and Bartsch*, Moll. 83
 Callomegas, *Lameere*, Ins. 186
 Calloporina, *Ulrich and Bassler*, Bry. 11
 Callygris, *Thierry-Mieg*, Ins. 273
 Calodemus, *Faust*, Ins. 173
 Calveria, *Delage*, Echin. 76
 Campylotropis, *Reuter*, Ins. 325
 Canavarella, *Buckman*, Moll. 60
 Canavarina, *Buckman*, Moll. 60
 Cancellariella, *Martin*, Moll. 74
 Capellanus, *Distant*, Ins. 325
 Caradrinopsis, *Swinhoe*, Ins. 273
 Cardiocephalus, *Broili*, Rept. 40
 Carpaulum, *Sloane*, Ins. 129
 Caryoryctes, *Calkins*, Prot. 57
 Casmenella, *Jacoby*, Ins. 191
 Catageomyia, *Theobald*, Ins. 299
 Catagonus, *Ameghino*, Mamm. 50
 Cattania, *Brusina*, Moll. 64
 Caudellia, *Dyar*, Ins. 287
 Cecidoxenus, *Ashmead*, Ins. 227

 Cedusa, *Fowler*, Ins. 332
 Centrobranchus, *Fowler*, Pisces 44
 Centrocidaris, *Agassiz*, Echin. 54
 Centromantis, *Werner*, Ins. 355
 Centrophthalmosis, *Raffray*, Ins. 140
 Centrosaurus, *Lambe*, Rept. 29
 Cephaloeuropoda, *Berlese*, Arachn. 40
 Ceramba, *Fauvel*, Ins. 166
 Cerapteroceroides, *Ashmead*, Ins. 227
 Ceratiscus, *Caudell*, Ins. 356
 Cerato, *Meunier*, Ins. 125
 Ceratismicra, *Ashmead*, Ins. 227
 Cercoceropsis, *Raffray*, Ins. 141
 Cercocerulus, *Raffray*, Ins. 141
 Ceroniola, *Wilckens*, Moll. 87
 Cervellus, *Szépligeti*, Ins. 224
 Cervulus, *Szépligeti*, Ins. 224
 Chacoana, *Holmberg*, Ins. 201
 Chaetoclusia, *Coquillett*, Ins. 310
 Chaetoleistus, *Semenov*, Ins. 129
 Chalepogenus, *Holmberg*, Ins. 201
 Chaliniastis, *Meyrick*, Ins. 292
 Challia, *Burr*, Ins. 352
 Chamus, *Distant*, Ins. 325
 Charadriola, *Madurasz*, Aves 64
 Charitocoris, *Reuter*, Ins. 325
 Charitovalgus, *Kolbe*, Ins. 157
 Chaunangium, *Schulze*, Spong. 15
 Cheiridella, *Jacoby*, Ins. 191
 Cheiriphotis, *Walker*, Crust. 44
 Cheletoides, *Oudemans*, Arachn. 40
 Cheletomimus, *Oudemans*, Arachn. 40
 Cheletomorpha, *Oudemans*, Arachn. 40
 Cheletophanes, *Oudemans*, Arachn. 40
 Cheletopsis, *Oudemans*, Arachn. 40
 Chelyoposaurus, *Broom*, Rept. 33
 Chenniopsis, *Raffray*, Ins. 141
 Chenogaster, *Lahille*, Pisces 33
 Chevalia, *Walker*, Crust. 44
 Chiasmocleis, *Méhely*, Rept. 37
 Chirognatha, *Sars*, Crust. 50
 Chlamydes, *Jenkins*, Pisces 31
 Chloeria, *Mabille*, Ins. 251
 Chlorochaeta, *Warren*, Ins. 274
 Chlorosomella, *Reuter*, Ins. 325
 Choanocystis, *Penard*, Prot. 50
 Chonaphe, *Cook*, Myr. 14
 Chondrolepis, *Mabille*, Ins. 251
 Choniocardia, *Cossmann*, Moll. 88
 Chorizocarpa, *Michaelsen*, Tun. 5
 Chromotydaeus, *Berlese*, Arachn. 40
 Chrysatomus, *Ashmead*, Ins. 227
 Chrysonotomyia, *Ashmead*, Ins. 227

- Cionellus, *Reitter*, Ins. 174
 Cirrhitoides, *Jenkins*, Pisces 38
 Cirropsis, *Perner*, Moll. 84
 Cirrospiloideus, *Ashmead*, Ins. 228
 Cladocerapis, *Cockerell*, Ins. 201
 Cladodidelphys, *Ameghino*, Mamm. 50
 Clapmarius, *Distant*, Ins. 325
 Clavellofus, *Grabau*, Moll. 76
 Clavulites, *Girty*, Moll. 86
 Cleisthenes, *Jordan and Starks*, Pisces 32
 Clenia, *Ameghino*, Mamm. 50
 Cleptidea, *Mocsáry*, Ins. 217
 Clitotrema, *Simon*, Arachn. 21
 Clusiodes, *Coquillett*, Ins. 310
 Clypeasta, *Fairmaire*, Ins. 153
 Clytocerus, *Eaton*, Ins. 302
 Cochlearites, *Reis*, Moll. 90
 Cochlespiropsis, *Casey*, Moll. 74
 Cœlechinus, *Häcker*, Prot. 53
 Cœlochalcis, *Cameron*, Ins. 228
 Celojoppa, *Cameron*, Ins. 219
 Colgorma, *Kirkaldy*, Ins. 332
 Collybus, *Snyder*, Pisces 27
 Colobodes, *Meyrick*, Ins. 293
 Colpoglossus, *Boulenger*, Rept. 37
 Combalus, *Distant*, Ins. 325
 Compsocalyx, *Schulze*, Spong. 14
 Compsoglypha, *Fairmaire*, Ins. 159
 Conohalictoides, *Viereck*, Ins. 202
 Conothoa, *Lyon*, Mamm. 42
 Copeichthys, *Dollo*, Pisces 50
 Coptoeme, *Aurivillius*, Ins. 186
 Coralloerangon, *Nobili*, Crust. 35
 Cordyloides, *Fritsch*, Rept. 40
 Corymbitodes, *du Buysson*, Ins. 161
 Cosmina, *Perner*, Moll. 85
 Cosmogaster, *Faust*, Ins. 175
 Cosmolælaps, *Berlese*, Arachn. 41
 Cosmolithes, *Grabau*, Moll. 76
 Cossmannica, *Dall and Bartsch*, Moll. 83
 Cottiusculus, *Jordan and Starks*, Pisces 29
 Craspedotis, *Meyrick*, Ins. 293
 Craspedotriton, *Dall*, Moll. 77
 Cremifania, *Czerny*, Ins. 310
 Crescentius, *Distant*, Ins. 324
 Cribricella, *Canu*, Bry. 14
 Crætopola, *Meyrick*, Ins. 293
 Crossias, *Jordan and Starks*, Pisces 29
 Crymus, *Fauvel*, Ins. 134
 Cryptohalictoides, *Viereck*, Ins. 202
 Cryptoscopa, *Turner*, Ins. 274
 Ctenicellus, *Raffray*, Ins. 141
 Ctenisomimus, *Raffray*, Ins. 141
 Ctenocephalus, *Linstow*, Verm. 52
 Ctenodrapetis, *Bezzi*, Ins. 305
 Ctenoglypta, *Ancey*, Moll. 62
 Ctenolophus, *Purcell*, Arachn. 21
 Ctenophryne, *Mocquard*, Rept. 36
 Culicada, *Felt*, Ins. 300
 Culicella, *Felt*, Ins. 300
 Culicelsa, *Felt*, Ins. 300
 Culiseta, *Felt*, Ins. 300
 Cultriopsis, *Cossmann*, Moll. 90
 Cyanaspis, *Weise*, Ins. 197
 Cycethra, *Bethune-Baker*, Ins. 257
 Cyclochoria, *Stichel*, Ins. 246
 Cyclostropis, *Perner*, Moll. 85
 Cyclumna, *Fowler*, Ins. 332
 Cylichnopsis, *Cossmann*, Moll. 73
 Cymatomorpha, *Meyrick*, Ins. 293
 Cynodonichthys, *Meek*, Pisces 42
 Cynthiopsis, *Michaelsen*, Tun. 5
 Cyphodemidea, *Reuter*, Ins. 326
 Cyphotrypa, *Ulrich and Bassler*, Bry. 12
 Cyrtocoris, *Aurivillius*, Ins. 187
 Cyrtoplectus, *Raffray*, Ins. 141
 Cyrtura, *Jaekel*, Rept. 33
 Cystomastax, *Szépligeti*, Ins. 224
 Cystopsaltria, *Goding and Froggatt*, Ins. 330
 Cytosoma, *Gilchrist*, Pisces 33
 Dactylopoda, *Sars*, Crust. 50
 Dagbertus, *Distant*, Ins. 326
 Daldorfia, *Rathbun*, Crust. 28
 Dalla, *Mabille*, Ins. 251
 Damellera, *Kirkaldy*, Ins. 315
 Dandinus, *Distant*, Ins. 316
 Danielsia, *Theobald*, Ins. 300
 Darellella, *Buckman*, Moll. 60
 Darellina, *Buckman*, Moll. 60
 Darpasus, *Cameron*, Ins. 219
 Daruma, *Jordan and Starks*, Pisces 29
 Darymna, *Cameroon*, Ins. 219
 Dasychiroides, *Bethune-Baker*, Ins. 257
 Dasyleurotettix, *Rehn*, Ins. 360
 Dasyrhopala, *Jordan*, Ins. 184
 Dasysterna, *Turner*, Ins. 275
 Dasyvalgus, *Holbe*, Ins. 157
 Dawsonites, *Böhm*, Moll. 60
 Decatelia, *Weise*, Ins. 197
 Decatomothorax, *Ashmead*, Ins. 228
 Decterias, *Jordan and Starks*, Pisces 30
 Dectobathra, *Meyrick*, Ins. 293
 Deinopygia, *Warren*, Ins. 275
 Delios, *Portevin*, Ins. 145

- Delos, *Hutton*, Moll. 64
 Deltonotus, *Hancock*, Ins. 360
 Dendroterus, *Blandford*, Ins. 182
 Dermatonotus, *Méhely*, Rept. 37
 Deropoda, *Bernhauer*, Ins. 134
 Derosimus, *Fairmaire*, Ins. 166
 Dersagrena, *Kirkaldy*, Ins. 319
 Desmosyllis, *Verrill*, Verm. 32
 Deuterapoica, *Dalla Torre*, Ins. 207
 Deuterodiscoelius, *Dalla Torre*, Ins. 207
 Deuteroptila, *Meyrick*, Ins. 293
 Devarodes, *Warren*, Ins. 275
 Dewetia, *Bischof*, Ins. 308
 Dewetia, *Buturlin*, Aves 65
 Dexistes, *Jordan and Starks*, Pisces 32
 Diaphoroserica, *Péringuey*, Ins. 153
 Diaposis, *Raffray*, Ins. 141
 Diascopea, *Horváth*, Ins. 320
 Diaugis, *Raffray*, Ins. 141
 Dialuomorpha, *Ashmead*, Ins. 228
 Diaulus, *Ashmead*, Ins. 228
 Diceratoptyx, *Pilsbry*, Moll. 68
 Diceratucha, *Swinhoe*, Ins. 275
 Dichelotrox, *Heller*, Ins. 175
 Dicranotropis, *Faust*, Ins. 175
 Dictynina, *Banks*, Arachn. 22
 Dictyogenus, *Klapálek*, Ins. 347
 Dictyopterygella, *Klapálek*, Ins. 347
 Dicrytocercyon, *Ganglbauer*, Ins. 133
 Didymolophus, *Fairmaire*, Ins. 161
 Dientomochilus, *Cossmann*, Moll. 77
 Diestesoma, *Péringuey*, Ins. 166
 Diffugiella, *Cash*, Prot. 43
 Diglyphomorpha, *Ashmead*, Ins. 228
 Dilatilabrum, *Cossmann*, Moll. 77
 Dimmockia, *Ashmead*, Ins. 228
 Dinawa, *Bethune-Baker*, Ins. 257
 Dinosius, *Fairmaire*, Ins. 176
 Dioclophara, *Kirkaldy*, Ins. 336
 Diotrodes, *Coquillett*, Ins. 304
 Diognetus, *Distant*, Ins. 326
 Diploctena, *Turner*, Ins. 275
 Diploglena, *Purcell*, Arachn. 24
 Diplophryxus, *Richardson*, Crust. 41
 Discolepis, *Ancey*, Moll. 64
 Discoperella, *Semenow*, Ins. 129
 Discovermetulus, *Rovérto*, Moll. 78
 Discoxenus, *Wasmann*, Ins. 135
 Distasis, *Handlirsch*, Ins. 126
 Distega, *Konow*, Ins. 236
 Disteiromys, *Ameghino*, Mamm. 50
 Dithmarus, *Distant*, Ins. 322
 Diversosexus, *Bethune-Baker*, Ins. 257
 Doderia, *Silvestri*, Myr. 13
 Dodonæus, *Distant*, Ins. 322
 Doleroserica, *Péringuey*, Ins. 153
 Dolerotarsa, *Péringuey*, Ins. 153
 Dolichisme, *Kirkaldy*, Ins. 315
 Dolichobrachiun, *Williston*, Rept. 33
 Domoptolis, *Jordan*, Ins. 184
 Donaldia, *Perner*, Moll. 86
 Dorata, *Busck*, Ins. 293
 Dorelogena, *Péringuey*, Ins. 166
 Dorylocerus, *Wasmann*, Ins. 135
 Dorylogaster, *Wasmann*, Ins. 135
 Dorylomimus, *Wasmann*, Ins. 135
 Dorylonia, *Wasmann*, Ins. 135
 Dorylonilla, *Wasmann*, Ins. 135
 Dorylophila, *Wasmann*, Ins. 135
 Dorylopora, *Wasmann*, Ins. 135
 Dragmatyle, *Topsent*, Spong. 24
 Drasinus, *Raffray*, Ins. 141
 Drassinella, *Banks*, Arachn. 24
 Drobacia, *Brusina*, Moll. 65
 Dromeciton, *Fauvel*, Ins. 135
 Drosomyia, *De Meijere*, Ins. 310
 Dryaphis, *Kirkaldy*, Ins. 337
 Dryopeia, *Kirkaldy*, Ins. 337
 Dunbrodianus, *Pic*, Ins. 170
 Dupotetia, *Kobelt*, Moll. 65
 Durbana, *Warren*, Ins. 275
 Dyadentomum, *Handlirsch*, Ins. 125
 Dyadozoarium, *Handlirsch*, Ins. 125
 Ebæomorphus, *Pic*, Ins. 162
 Ebosia, *Jordan and Starks*, Pisces 30
 Ebbletodes, *Turner*, Ins. 287
 Eccoptoglossa, *Luze*, Ins. 135
 Ecculex, *Felt*, Ins. 300
 Echinodiscaster, *Delage*, Echin. 77
 Echinomegistus, *Berlese*, Arachn. 41
 Echinoseius, *Ribaya*, Arachn. 41
 Ectocyclops, *Brady*, Crust. 50
 Ectopocerus, *Raffray*, Ins. 141
 Egapista, *Cockerell*, Ins. 202
 Egila, *Dall and Bartsch*, Moll. 83
 Eisenia, *Ashmead*, Ins. 228
 Elacatinus, *Jordan*, Pisces 31
 Elachertomorpha, *Ashmead*, Ins. 228
 Elachisme, *Kirkaldy*, Ins. 319
 Elaphocranus, *Bergroth*, Ins. 322
 Eleusomatus, *Raffray*, Ins. 141
 Eleusoptamus, *Raffray*, Ins. 141
 Eleutherocaris, *Clarke*, Crust. 47
 Elliptodactylus, *Doflein*, Crust. 29
 Empheremyia, *Bischof*, Ins. 308
 Empysarus, *Martin*, Ins. 317
 Encoma, *Swinhoe*, Ins. 275
 Encryphia, *Turner*, Ins. 275
 Encyrtaspis, *Ashmead*, Ins. 228

- Energoponus, *Holmberg*, Ins. 202
 Enicosoma, *Lewis*, Ins. 146
 Enidia, *Smith*, Arachn. 27
 Enneasmicra, *Ashmead*, Ins. 228
 Enteroxenos, *Bonnerie*, Moll. 83
 Entogonia, *Warren*, Ins. 275
 Entogonites, *Kittl*, Moll. 60
 Entomotrogus, *Ganglbauer*, Ins. 148
 Eoarmadillidium, *Dollfus*, Crust. 42
 Eobrissus, *Bell*, Echin. 60
 Eoclathurella, *Casey*, Moll. 74
 Eodrillia, *Casey*, Moll. 74
 Eohemera, *Aurivillius*, Ins. 258
 Eosurcula, *Casey*, Moll. 74
 Epanaphe, *Aurivillius*, Ins. 258
 Eparmene, *Fowler*, Ins. 333
 Epelictis, *Meyrick*, Ins. 293
 Ephimeronotus, *Faust*, Ins. 176
 Ephutopsis, *Ashmead*, Ins. 211
 Ephymata, *Raffray*, Ins. 141
 Epibrontis, *Meyrick*, Ins. 293
 Epichalcoplethis, *Arrow*, Ins. 155
 Epicoleotichus, *Schouteden*, Ins. 317
 Epilectus, *Faust*, Ins. 176
 Epimastis, *Meyrick*, Ins. 293
 Epimonispractor, *Holmberg*, Ins. 202
 Epinebriola, *Daniel*, Ins. 130
 Epipatriarchus, *Ameghino*, Mamm. 49
 Epipeltephilus, *Ameghino*, Mamm. 51
 Epipheidole, *Wheeler*, Ins. 215
 Epipteromalus, *Ashmead*, Ins. 228
 Episagaceras, *Noetling*, Moll. 60
 Eremattus, *Banks*, Arachn. 35
 Eremica, *Walsingham*, Ins. 293
 Eremomus, *Raffray*, Ins. 141
 Eremopezus, *Andrews*, Aves. 37
 Erginoides, *Cambridge*, Arachn. 38
 Ericteis, *Jordan*, Pisces 27
 Erigonidium, *Smith*, Arachn. 28
 Erisphex, *Jordan and Starks*, Pisces 31
 Eriximachus, *Distant*, Ins. 322
 Erlandia, *Aurivillius*, Ins. 187
 Erosa, *Jordan and Starks*, Pisces 31
 Erotylopsis, *Jordan*, Ins. 184
 Erythrocheylus, *Berlese*, Arachn. 41
 Estuidus, *Distant*, Ins. 326
 Eteoneus, *Kirkaldy*, Ins. 336
 Etiserica, *Péringuey*, Ins. 153
 Etorleptomyia, *Theobald*, Ins. 300
 Euænarina, *Breddin*, Ins. 317
 Eualastor, *Dalla Torre*, Ins. 207
 Euancistrocerus, *Dalla Torre*, Ins. 207
 Eubordeta, *Rothschild*, Ins. 276
 Eubrachiosaurus, *Williston*, Rept. 33
 Eucalantica, *Busck*, Ins. 293
 Euceramius, *Dalla Torre*, Ins. 207
 Eucratherium, *Furlong and Sinclair*, Mamm. 43
 Euchærodes, *Nurse*, Ins. 217
 Eucleonus, *Faust*, Ins. 176
 Euclymene, *Verrill*, Verm. 32
 Eucyclotropis, *Jordan*, Ins. 184
 Eucynopotamus, *Fowler*, Pisces 49
 Eudiscælius, *Friese*, Ins. 207
 Euembia, *Verhoeff*, Ins. 346
 Euepipona, *Dalla Torre*, Ins. 207
 Eufroggattia, *Ashmead*, Ins. 228
 Eugoides, *Aurivillius*, Ins. 187
 Eugonodes, *Jordan*, Ins. 184
 Eugonops, *Jordan*, Ins. 184
 Eugrymœa, *Verrill*, Verm. 36
 Eugyrina, *Dall*, Moll. 77
 Euiherdmania, *Ritter*, Tun. 6
 Euidosomus, *Reitter*, Ins. 176
 Eukoebela, *Ashmead*, Ins. 228
 Eulælaps, *Berlese*, Arachn. 41
 Eulambda, *Ameghino*, Mamm. 49
 Eulophopteryx, *Ashmead*, Ins. 228
 Eumasia, *Chrétien*, Ins. 293
 Eumilionia, *Thierry-Mieg*, Ins. 276
 Eumontezumia, *Dalla Torre*, Ins. 208
 Eunonia, *Casey*, Ins. 135
 Euodrynerus, *Dalla Torre*, Ins. 208
 Euophthalmomyia, *Ashmead*, Ins. 228
 Euparatettix, *Hancock*, Ins. 360
 Eupedetes, *Scudder*, Ins. 360
 Eupera, *Michaelsen*, Tun. 6
 Euphalerus, *Schwarz*, Ins. 337
 Euphlæobius, *Jordan*, Ins. 184
 Eupododus, *Kirkaldy*, Ins. 315
 Eupolistes, *Dalla Torre*, Ins. 208
 Eupolybia, *Dalla Torre*, Ins. 208
 Eupolytmia, *Verrill*, Verm. 32
 Euproctilla, *Aurivillius*, Ins. 258
 Euprotherotherium, *Ameghino*, Mamm. 50
 Eupsorus, *Brown*, Ins. 135
 Eurhythma, *Turner*, Ins. 287
 Euronycha, *Péringuey*, Ins. 153
 Eurhynchium, *Dalla Torre*, Ins. 208
 Euryalus, *Matschie*, Mamm. 34
 Eurygnathomyia, *Czerny*, Ins. 310
 Eusayia, *Ashmead*, Ins. 229
 Eusintor, *Jordan*, Ins. 184
 Eusirogenes, *Stebbing*, Crust. 44
 Eusomatulus, *Reitter*, Ins. 176
 Eustypiura, *Ashmead*, Ins. 229

- Eusynagris*, *Dalla Torre*, Ins. 208
Eusynstyela, *Michaelsen*, Tun. 6
Euteleia, *Raffray*, Ins. 142
Eutrichocera, *Hampson*, Ins. 288
Eutrigaster, *Cognetti*, Verm. 38
Eutritonium, *Cossmann*, Moll. 77
Euvacus, *Casey*, Ins. 169
Euvipio, *Szépligeti*, Ins. 224
Euvonymus, *Distant*, Ins. 323
Euzethus, *Dalla Torre*, Ins. 208
Evalina, *Dall and Bartsch*, Moll. 83
Eviota, *Jenkins*, Pisces 31
Eviphis, *Berlese*, Arachn. 42
Exallus, *Raffray*, Ins. 142
Excorallana, *Stebbing*, Crust. 40
Exechontis, *Jordan*, Ins. 184
Exoristobia, *Ashmead*, Ins. 229
- Fæsula*, *Cameron*, Ins. 220
Fagina, *Attems*, Myr. 13
Fajumia, *Stromer*, Pisces 46
Falconeria, *Smith*, Arachn. 28
Falsifusus, *Grabau*, Moll. 76
Faroella, *Wolfenden*, Crust. 50
Faustina, *Kobelt*, Moll. 65
Felisacus, *Distant*, Ins. 326
Femoriferus, *Attems*, Myr. 15
Fingulus, *Distant*, Ins. 326
Florchisme, *Kirkaldy*, Ins. 332
Fœnomorpha, *Szépligeti*, Ins. 224
Fokkeria, *Schouteden*, Ins. 317
Folinella, *Dall and Bartsch*, Moll. 83
Forcipator, *Maindron*, Ins. 130
Frechiella, *Prinz*, Moll. 60
Fritschia, *Picard*, Moll. 82
Froekenia, *Hoyle*, Moll. 60
Froggattia, *Ashmead*, Ins. 229
Fulgentius, *Distant*, Ins. 326
Fulgurofusus, *Grabau*, Moll. 76
Furcina, *Jordan and Starks*, Pisces 29
Fusitoma, *Cusey*, Moll. 74
- Gabriola*, *Taylor*, Ins. 277
Galeodopsis, *Birula*, Arachn. 36
Gallea, *Walker*, Crust. 44
Gallobellicus, *Distant*, Ins. 326
Galopagomyia, *Bischof*, Ins. 309
Gamasholaspis, *Berlese*, Arachn. 42
Gamasiphis, *Berlese*, Arachn. 42
Gamka, *Péringuey*, Ins. 153
Gastroxys, *Horváth*, Ins. 317
Gazanus, *Péringuey*, Ins. 130
Gelastogonia, *Kirkaldy*, Ins. 336
Gelastophantia, *Kirkaldy*, Ins. 332
Gelastophara, *Kirkaldy*, Ins. 336
- Gelastyra*, *Kirkaldy*, Ins. 332
Gelchossa, *Kirkaldy*, Ins. 321
Geniohyus, *Andrews*, Mamm. 44
Genophion, *Felt*, Ins. 220
Geolycosa, *Montgomery*, Arachn. 33
Gerontia, *Schaus*, Ins. 259
Getohetherium, *Ameghino*, Mamm. 49
Girardotia, *Loriol*, Moll. 87
Gismunda, *Distant*, Ins. 326
Glanosuchus, *Broom*, Rept. 32
Glaphyrocoris, *Reuter*, Ins. 326
Glaucoptaltia, *Goding and Froggatt*, Ins. 330
Glochinocerus, *Blandford*, Ins. 182
Glossopeltis, *Reuter*, Ins. 326
Glyphopsyche, *Banks*, Ins. 341
Glyptotoma, *Casey*, Moll. 74
Godefridus, *Distant*, Ins. 323
Golasa, *Raffray*, Ins. 142
Gonaulax, *Schouteden*, Ins. 317
Gonioclœus, *Jordan*, Ins. 184
Goniodon, *Perrier*, Echin. 77
Gonochlora, *Swinhoe*, Ins. 277
Gonopithecus, *Ameghino*, Mamm. 49
Gonorocterus, *Brown*, Ins. 176
Grammicopteryx, *Thierry-Mieg*, Ins. 277
Grammoa, *Aurivillius*, Ins. 259
Grandidierella, *Coutière*, Crust. 44
Greeleyella, *Cockerell*, Ins. 202
Grimgerda, *Kirkaldy*, Ins. 315
Gronovius, *Jacoby*, Ins. 192
Grubeosyllis, *Verrill*, Verm. 33
Gryphonycha, *Péringuey*, Ins. 153
Guentheridia, *Gilbert and Starks*, Pisces 25
Gueriniellus, *Kirkaldy*, Ins. 315
Guisardus, *Distant*, Ins. 326
Gulbarentsia, *Stebbing*, Crust. 44
Gynandrosoma, *Dyar*, Ins. 291
Gyostega, *Warren*, Ins. 277
- Haaniella*, *Kirby*, Ins. 356
Haeckelia, *Kirkaldy*, Ins. 319
Hæmocyctidium, *Castellani and Willey*, Prot. 55
Hæmodipsas, *Enderlein*, Ins. 340
Hæmus, *Péringuey*, Ins. 166
Haggardia, *Warren*, Ins. 277
Haldra, *Dall and Bartsch*, Moll. 83
Halistrepta, *Dall*, Moll. 87
Halosoma, *Cole*, Crust. 61
Hamadryaphis, *Kirkaldy*, Ins. 337
Hamza, *Distant*, Ins. 330
Haplaxius, *Fowler*, Ins. 333
Haploembia, *Verhoeff*, Ins. 346

- Haplomylomys, *Osgood*, Mamm. 40
 Haplotropidius, *Müller*, Ins. 145
 Hapochraeus, *Raffray*, Ins. 142
 Harmomima, *Raffray*, Ins. 142
 Harpapha, *Cook*, Myr. 14
 Harpedona, *Distant*, Ins. 326
 Haullevillea, *Schouteden*, Ins. 317
 Hedyjoppa, *Cameron*, Ins. 220
 Heeriella, *Meunier*, Ins. 125
 Heida, *Dall and Bartsch*, Moll. 83
 Heilprinia, *Grabau*, Moll. 76
 Helcosoma, *Wright*, Prot. 55
 Helenella, *Casey*, Moll. 74
 Hemipterus, *Jacobi*, Ins. 335
 Hemiarcha, *Meyrick*, Ins. 294
 Hemicopsis, *Swinhoe*, Ins. 277
 Hemiglyphyrus, *Champanois*, Ins. 152
 Hemihoplopous, *Birula*, Arachn. 19
 Hemistylus, *Ameghino*, Mamm. 50
 Hemisurcula, *Casey*, Moll. 74
 Hemisyllis, *Verrill*, Verm. 33
 Hemitormus, *Ashmead*, Ins. 229
 Hemixera, *Warren*, Ins. 278
 Hemizaptyx, *Pilsbry*, Moll. 68
 Heptasmicra, *Ashmead*, Ins. 229
 Herdmania, *Ritter*, Tun. 6
 Hermotinus, *Distant*, Ins. 326
 Hesperophantia, *Kirkaldy*, Ins. 332
 Hesperophara, *Kirkaldy*, Ins. 336
 Heteranthessius, *Scott*, Crust. 50
 Heteranthidium, *Cockerell*, Ins. 203
 Hetererannis, *Warren*, Ins. 278
 Heterias, *Richardson*, Crust. 39
 Heterobella, *Turner*, Ins. 288
 Heteroclathria, *Topsent*, Spong. 24
 Heterodictyna, *Dahl*, Arachn. 22
 Heterolambda, *Ameghino*, Mamm. 49
 Heteroleuca, *Warren*, Ins. 278
 Heteromorphysa, *Verrill*, Verm. 33
 Heteronema, *Ulrich and Bassler*, Bry. 16
 Heterotilapia, *Pellegrin*, Pisces 35
 Hexaplex, *Doflein*, Crust. 30
 Hexasmicra, *Ashmead*, Ins. 229
 Hextæus, *Brown*, Ins. 176
 Hicksia, *Delgado*, Crust. 58
 Hilia, *Distant*, Ins. 326
 Himalayites, *Boehm*, Moll. 60
 Himeromima, *Warren*, Ins. 278
 Hirsutopalpis, *Bethune-Baker*, Ins. 259
 Histionotophorus, *Eastman*, Pisces 26
 Holapulus, *Berlese*, Arachn. 42
 Holcopeltoideus, *Ashmead*, Ins. 229
 Holisonycha, *Péringuey*, Ins. 153
 Holochalcis, *Kieffer*, Ins. 229
 Holognathus, *Thomson*, Crust. 41
 Holoscolex, *Cognetti*, Verm. 38
 Holostaspella, *Berlese*, Arachn. 43
 Homalothynnus, *Enderlein*, Ins. 211
 Homoclaus, *Jordan*, Ins. 184
 Homolochunia, *Doflein*, Crust. 32
 Homophylotis, *Turner*, Ins. 259
 Homospora, *Turner*, Ins. 278
 Hoplitodes, *Fauvel*, Ins. 136
 Hoplitovalgus, *Kolbe*, Ins. 157
 Hoplolaelaps, *Berlese*, Arachn. 43
 Hoplolontha, *Fairmaire*, Ins. 154
 Hoplomegistus, *Berlese*, Arachn. 43
 Hoplonomia, *Ashmead*, Ins. 203
 Hoploleidnota, *Bates*, Ins. 155
 Hoplopleura, *Enderlein*, Ins. 340
 Horriostomella, *Perner*, Moll. 85
 Hornellia, *Walker*, Crust. 44
 Hubbardiella, *Ashmead*, Ins. 229
 Hugia, *Buckman*, Moll. 60
 Hulecoeteomyia, *Theobald*, Ins. 301
 Huso, *Berg*, Pisces 52
 Hyadaphis, *Kirkaldy*, Ins. 337
 Hyalopola, *Warren*, Ins. 278
 Hyalopsyche, *Ulmer*, Ins. 341
 Hyalorrhœ, *Warren*, Ins. 278
 Hybaphe, *Cook*, Myr. 14
 Hyboserica, *Péringuey*, Ins. 154
 Hybovalgus, *Kolbe*, Ins. 157
 Hydatoscia, *Warren*, Ins. 278
 Hydrorhoa, *Kieffer*, Ins. 229
 Hylochærus, *Thomas*, Mamm. 44
 Hylopachyiulus, *Attems*, Myr. 15
 Hymenosmithia, *Dalla Torre*, Ins. 208
 Hymetrochota, *Topsent*, Spong. 24
 Hyodectis, *Meyrick*, Ins. 294
 Hypamarygmus, *Gebien*, Ins. 167
 Hypanthidium, *Cockerell*, Ins. 203
 Hyperdidelphys, *Ameghino*, Mamm. 50
 Hyperectis, *Meyrick*, Ins. 288
 Hyphancylus, *Fowler*, Ins. 333
 Hypidota, *Schaus*, Ins. 260
 Hopolepis, *Warren*, Ins. 278
 Hypolophota, *Turner*, Ins. 288
 Hypometalla, *Warren*, Ins. 278
 Hypophylax, *Fairmaire*, Ins. 177
 Hypopteromalus, *Ashmead*, Ins. 229
 Hypozonium, *Cook*, Myr. 12
 Iaspis, *Kaye*, Ins. 249
 Icariastrum, *Dalla Torre*, Ins. 208
 Icarrella, *Dalla Torre*, Ins. 208
 Icariola, *Dalla Torre*, Ins. 208
 Ichnytes, *Vinassa*, Rept. 40

- Idæcamenta, *Péringuey*, Ins. 154
 Idæserica, *Péringuey*, Ins. 154
 Idiophantis, *Meyrick*, Ins. 294
 Idiostoma, *Arrow*, Ins. 151
 Ignacia, *Kirby*, Ins. 356
 Incisura, *Hedley*, Moll. 86
 Indoennea, *Kobelt*, Moll. 62
 Inimicus, *Jordan and Starks*, Pisces 31
 Intranstylum, *Fauré*, Prot. 60
 Ioba, *Distant*, Ins. 330
 Iphiaana, *Dall and Bartsch*, Moll. 83
 Iphiarusa, *Breddin*, Ins. 317
 Iphidioides, *Oudemans*, Arachn. 43
 Iphidiopsis, *Oudemans*, Arachn. 43
 Iphidulus, *Ribaya*, Arachn. 43
 Iropoca, *Turner*, Ins. 260
 Isachisme, *Kirkaldy*, Ins. 322
 Isaphe, *Cook*, Myr. 14
 Iscanus, *Fauvel*, Ins. 167
 Ischnolynthus, *Holmberg*, Ins. 211
 Ischnomembras, *Fowler*, Pisces 41
 Ischnopus, *Marshall*, Ins. 224
 Ischyrocera, *Hauser*, Ins. 157
 Ischyrocyon, *Matthew and Gidley*, Mamm. 37
 Isodiscodes, *Warren*, Ins. 279
 Isomicrus, *Hartmann*, Ins. 177
 Isoniscus, *Borg*, Ins. 354
 Isostigena, *Bethune-Baker*, Ins. 260
 Itaballia, *Kaye*, Ins. 241
 Itamus, *Raffray*, Ins. 142
 Iteticus, *Raffray*, Ins. 142
 Itylus, *Jacoby*, Ins. 193
 Iulota, *Meyrick*, Ins. 294
 Ividia, *Dall and Bartsch*, Moll. 83

 Janetiella, *Berlese*, Arachn. 47
 Jeanella, *Scott*, Crust. 51
 Joppoides, *Berthoumieu*, Ins. 221

 Kalania, *Kirkaldy*, Ins. 324
 Kareol, *Kirkaldy*, Ins. 332
 Karoomys, *Broom*, Mamm. 49
 Kayesia, *Schouteden*, Ins. 317
 Kearfottia, *Fernald*, Ins. 294
 Kelloggia, *Carriker*, Ins. 344
 Kennetus, *Distant*, Ins. 320
 Koebelea, *Ashmead*, Ins. 229
 Koma, *Distant*, Ins. 331
 Kongota, *Distant*, Ins. 331
 Koraia, *Herz*, Ins. 268
 Kosicia, *Brusina*, Moll. 66
 Krambergeria, *Simionescu*, Pisces 38
 Kraseophylla, *Péringuey*, Ins. 154
 Kronides, *Kirkaldy*, Ins. 336

 Laccophorella, *Horváth*, Ins. 317
 Lægula, *Cameron*, Ins. 221
 Lælaspis, *Berlese*, Arachn. 44
 Læogyra, *Perner*, Moll. 82
 Lagium, *Konow*, Ins. 237
 Lahillea, *Loriot*, Echin. 78
 Lamellitettix, *Hancock*, Ins. 360
 Lamprochelidon, *Ridgway*, Aves 54
 Lamprocryptus, *Schmiedeknecht*, Ins. 221
 Lampropepla, *Fairmaire*, Ins. 160
 Lancella, *Dall and Bartsch*, Moll. 83
 Lanthanomelissa, *Holmberg*, Ins. 203
 Lar, *Semenow*, Ins. 147
 Lasioceros, *Bethune-Baker*, Ins. 260
 Lasiochara, *Bethune-Baker*, Ins. 260
 Lasiocnops, *Theobald*, Ins. 301
 Lasiolimacos, *Bethune-Baker*, Ins. 260
 Laufferia, *Bolívar*, Ins. 360
 Ledomyiella, *Meunier*, Ins. 125
 Leicesteria, *Theobald*, Ins. 301
 Leishmania, *Ross*, Prot. 56
 Lena, *Herz*, Ins. 268
 Lentalius, *Fairmaire*, Ins. 188
 Lentospora, *Plehn*, Prot. 56
 Leobatus, *Walsingham*, Ins. 294
 Leonardiella, *Berlese*, Arachn. 47
 Leontiniella, *Brèthes*, Ins. 208
 Leotichius, *Distant*, Ins. 329
 Lepadichthys, *Waite*, Pisces 27
 Lepchina, *Überthür*, Ins. 253
 Lepidiolamprologus, *Pellegrin*, Pisces 35
 Lepidophthalmus, *Holmes*, Crust. 34
 Lepidophthirus, *Enderlein*, Ins. 340
 Leptalina, *Mabille*, Ins. 251
 Leptea, *Bolívar*, Ins. 360
 Leptergatis, *Holmberg*, Ins. 203
 Leptocallista, *Pilsbry*, Moll. 69
 Leptocebus, *Trouessart*, Mamm. 33
 Leptochalcis, *Kieffer*, Ins. 229
 Leptodella, *Reuter*, Ins. 344
 Leptogeneia, *Meyrick*, Ins. 294
 Leptolabis, *Topsent*, Spong. 25
 Leptometria, *Holmberg*, Ins. 203
 Leptonadata, *Aurivillius*, Ins. 260
 Leptoremus, *Casey*, Ins. 170
 Leptosastra, *Topsent*, Spong. 25
 Leptosurcula, *Casey*, Moll. 74
 Leptotheca, *Fauvel*, Ins. 164
 Leribe, *Péringuey*, Ins. 154
 Lessuerella, *Perner*, Moll. 86
 Leucoctenorrhœ, *Warren*, Ins. 279
 Leucolithodes, *Warren*, Ins. 279
 Leuconotus, *Bruner*, Ins. 360
 Leucoreas, *Warren*, Ins. 279
 Libavius, *Distant*, Ins. 323

- Licaphrops, *Ameghino*, Mamm. 50
 Limifossor, *Heath*, Moll. 91
 Limipecten, *Girty*, Moll. 90
 Limmatoblatta, *Handlirsch*, Ins. 125
 Limnichthys, *Waite*, Pisces 28
 Limnodriloides, *Pierantoni*, Verm. 38
 Limnopomus, *Dall*, Moll. 79
 Linoceratium, *Bruner*, Ins. 360
 Linshcosteus, *Distant*, Ins. 323
 Liobaulius, *Casey*, Ins. 170
 Liocorida, *Reuter*, Ins. 326
 Liodermion, *Kirkaldy*, Ins. 315
 Lipholidophis, *Mocquard*, Rept. 27
 Lioscarites, *Maindron*, Ins. 130
 Liparophis, *Peracca*, Rept. 27
 Lippomanus, *Distant*, Ins. 324
 Lisitheria, *Cameron*, Ins. 224
 Lithoptera, *Popofsky*, Prot. 52
 Lixomorphus, *Faust*, Ins. 177
 Lobocryptus, *Schmiedeknecht*, Ins. 221
 Lobopelta, *Schouteden*, Ins. 317
 Lodryca, *Cameron*, Ins. 221
 Logima, *Eaton*, Ins. 302
 Lohmannella, *Neresheimer*, Arachn. 44
 Lopadoceras, *Buckman*, Moll. 60
 Lophiotoma, *Casey*, Moll. 74
 Lophochorista, *Warren*, Ins. 279
 Lophocelus, *Ameghino*, Mamm. 50
 Lophogododon, *Ameghino*, Mamm. 50
 Lopholambda, *Ameghino*, Mamm. 49
 Lophomastix, *Benedict*, Crust. 33
 Lophopygia, *Warren*, Ins. 279
 Lophoscelomyia, *Theobald*, Ins. 301
 Lophotosoma, *Warren*, Ins. 279
 Lorichius, *Distant*, Ins. 323
 Loxapicia, *Warren*, Ins. 279
 Loxilobus, *Hancock*, Ins. 360
 Loxiorhiza, *Warren*, Ins. 288
 Luciocyprinus, *Vaillant*, Pisces 48
 Lucitanus, *Distant*, Ins. 327
 Lucrinus, *Cambridge*, Arachn. 29
 Lycastoides, *Johnson*, Verm. 33
 Lycopsylla, *Rothschild*, Ins. 313
 Lymphocystis, *Woodcock*, Prot. 54
 Lynteria, *Cameron*, Ins. 221
 Lyranela, *Gahan*, Ins. 188
 Lyrolepis, *Romanowky*, Pisces 51
 Lyrosurcula, *Casey*, Moll. 74
 Lysacme, *Dall and Bartsch*, Moll. 83
 Lythrichthys, *Jordan and Starks*, Pisces 30
 Macrenches, *Meyrick*, Ins. 294
 Macrolister, *Lewis*, Ins. 146
 Macrorileya, *Ashmead*, Ins. 230
 Macrotona, *Meyrick*, Ins. 294
 Macrovespa, *Dalla Torre*, Ins. 208
 Maculotriton, *Dall*, Moll. 78
 Macusia, *Kaye*, Ins. 250
 Macenas, *Kirkaldy*, Ins. 321
 Mæro, *Cambridge*, Arachn. 25
 Maimon, *Trouessart*, Mamm. 33
 Malacodora, *Bedel*, Ins. 193
 Malalasta, *Distant*, Ins. 327
 Malaza, *Mabille*, Ins. 252
 Maldanopsis, *Verrill*, Verm. 34
 Mamaia, *Stebbing*, Crust. 28
 Mamuchus, *Fairmaire*, Ins. 178
 Manarina, *Mabille*, Ins. 252
 Mantellina, *Sacco*, Moll. 90
 Marbodius, *Distant*, Ins. 323
 Marichisme, *Kirkaldy*, Ins. 319
 Marpelites, *Cameron*, Ins. 221
 Matenesius, *Distant*, Ins. 327
 Matesia, *Lea*, Ins. 178
 Matschiella, *Poche*, Mamm. 48
 Maurachelia, *Bernhauer*, Ins. 136
 Maussenetia, *Cossmann*, Moll. 78
 Meandrella, *Perner*, Moll. 85
 Mecopelidnota, *Bates*, Ins. 156
 Mecynoptera, *Handlirsch*, Ins. 125
 Megablattina, *Sellards*, Ins. 126
 Megacalanus, *Wolfenden*, Crust. 51
 Megacanthopus, *Ducke*, Ins. 208
 Megacentrus, *Szépligeti*, Ins. 224
 Megalonychotherium, *Scott*, Mamm. 48
 Megapis, *Ashmead*, Ins. 204
 Megapisa, *Aurivillius*, Ins. 261
 Megarhogas, *Szépligeti*, Ins. 225
 Megasurcula, *Casey*, Moll. 75
 Megathericulus, *Ameghino*, Mamm. 50
 Melanergon, *Bethune-Baker*, Ins. 261
 Melanoscia, *Warren*, Ins. 280
 Melanosmicra, *Ashmead*, Ins. 230
 Melanotettix, *Bruner*, Ins. 361
 Melanthes, *Mabille*, Ins. 252
 Melaphe, *Cook*, Myr. 14
 Menuthias, *Kirkaldy*, Ins. 315
 Mercennus, *Distant*, Ins. 320
 Merogomphus, *Martin*, Ins. 348
 Merriamia, *Boulenger*, Rept. 30
 Mertila, *Distant*, Ins. 327
 Mesedra, *Warren*, Ins. 280
 Mesoagathis, *Cameron*, Ins. 225
 Mesocetus, *Fraas*, Mamm. 47
 Mesocleonus, *Faust*, Ins. 178
 Mesoptylus, *Matsumura*, Ins. 335
 Mesoscolytus, *Brown*, Ins. 182

Machiloides, *Silvestri*, Ins. 350

- Mesostenopsis, *Schmiedeknecht*, Ins. 221
 Mestor, *Kirkaldy*, Ins. 322
 Metabrixia, *Fowler*, Ins. 333
 Metachatina, *Pilsbry*, Moll. 69
 Metacorthylus, *Blandford*, Ins. 182
 Metacynorta, *Cambridge*, Arachn. 38
 Metandrocarpa, *Michaelsen*, Tun. 6
 Metapogon, *Coquillett*, Ins. 304
 Metavonones, *Cambridge*, Arachn. 38
 Metazaptyx, *Pilsbry*, Moll. 68
 Metazygia, *Cambridge*, Arachn. 29
 Methorius, *Raffray*, Ins. 142
 Metopoxantho, *De Man*, Crust. 29
 Metriorrhynchomiris, *Kirkaldy*, Ins. 324
 Mevianes, *Simon*, Arachn. 32
 Mevius, *Distant*, Ins. 327
 Michaletia, *Cossmann*, Moll. 85
 Micrapis, *Ashmead*, Ins. 204
 Micrixia, *Fowler*, Ins. 333
 Microcentrus, *Szépligeti*, Ins. 225
 Microchalcis, *Kieffer*, Ins. 230
 Microcistela, *Pic*, Ins. 169
 Microcleonus, *Faust*, Ins. 178
 Microcleonus, *Desbrochers*, Ins. 178
 Microgoura, *Rothschild*, Aves 40
 Microlerida, *Fowler*, Ins. 333
 Microlyssa, *Riley*, Aves 51
 Micromasoria, *Kirkaldy*, Ins. 332
 Micropternodus, *Matthew*, Mamm. 36
 Microrutela, *Bates*, Ins. 156
 Microsurcula, *Casey*, Moll. 75
 Microtragulus, *Ameghino*, Mamm. 50
 Milda, *Dall and Bartsch*, Moll. 83
 Milleaster, *Ulrich*, Cœl. 19
 Millinaspis, *Weise*, Ins. 197
 Milocera, *Swinhoe*, Ins. 280
 Mimocellus, *Wasmann*, Ins. 167
 Mimophites, *Fauvel*, Ins. 136
 Mimoprora, *Warren*, Ins. 280
 Miocardiella, *Sacco*, Moll. 89
 Miolabis, *Matthew*, Mamm. 44
 Miopygium, *Breddin*, Ins. 318
 Mirocerus, *Ashmead*, Ins. 230
 Mischosmicra, *Ashmead*, Ins. 230
 Misumessus, *Banks*, Arachn. 31
 Mitona, *Raffray*, Ins. 142
 Molytophilus, *Hartmann*, Ins. 178
 Monandrocarpa, *Michaelsen*, Tun. 7
 Monarea, *Szépligeti*, Ins. 225
 Monocleus, *Jordan*, Ins. 184
 Monogenerina, *Spandel*, Prot. 47
 Monolophus, *Faust*, Ins. 178
 Monoraphis, *Schulze*, Spong. 14
 Monostiolum, *Dall*, Moll. 78
 Monroa, *Warren*, Ins. 281
 Montandoneus, *Kirkaldy*, Ins. 315
 Montandoniella, *Schouteden*, Ins. 318
 Mormoniella, *Ashmead*, Ins. 230
 Morokasia, *Jacoby*, Ins. 194
 Morphomima, *Warren*, Ins. 281
 Morphotropis, *Perner*, Moll. 79
 Moschophoromys, *Trouessart*, Mamm. 40
 Muanza, *Distant*, Ins. 331
 Munza, *Distant*, Ins. 331
 Mycernus, *Brown*, Ins. 154
 Mycterocoris, *Uhler*, Ins. 327
 Myenchus, *Schuberg*, Verm. 53
 Mylantria, *Aurivillius*, Ins. 261
 Myolestes, *Brèthes*, Ins. 305
 Myonyssus, *Tiraboschi*, Arachn. 45
 Myriopora, *Volz*, Cœl. 19
 Myrmecoleichus, *Berlese*, Arachn. 45
 Myrmonissus, *Berlese*, Arachn. 45
 Myrsinus, *Gahan*, Ins. 188
 Mysolis, *Kirkaldy*, Ins. 336
 Mystilus, *Distant*, Ins. 327
 Nakadaella, *Ancey*, Moll. 81
 Nalanda, *Théry*, Ins. 160
 Nanichisme, *Kirkaldy*, Ins. 319
 Nanniella, *Reuter*, Ins. 327
 Nannoalgus, *Kolbe*, Ins. 157
 Nanochromis, *Pellegrin*, Pisces 35
 Narcegaster, *Horvath*, Ins. 321
 Nasonia, *Ashmead*, Ins. 230
 Natorstites, *Böhm*, Moll. 60
 Naticonema, *Perner*, Moll. 82
 Nebaliella, *Thiele*, Crust. 47
 Nectarodietia, *Holmberg*, Ins. 204
 Nematrochus, *Perner*, Moll. 85
 Nemoxenus, *Faust*, Ins. 178
 Nenemeca, *Raffray*, Ins. 142
 Neobapta, *Warren*, Ins. 281
 Neocatolaccus, *Ashmead*, Ins. 230
 Neodezia, *Warren*, Ins. 281
 Neodirades, *Warren*, Ins. 281
 Neofidonia, *Warren*, Ins. 281
 Neohalictoides, *Viereck*, Ins. 204
 Neohirasea, *Rehn*, Ins. 356
 Neolucia, *Waterhouse and Turner*, Ins. 250
 Neomermis, *Linstow*, Verm. 53
 Neomesostenus, *Schmiedeknecht*, Ins. 221
 Neomicrorbis, *Rovereto*, Verm. 34
 Neonematherium, *Ameghino*, Mamm. 50
 Neonemoria, *Warren*, Ins. 281
 Neopangasius, *Popta*, Pisces 46
 Neoplema, *Warren*, Ins. 281

- Neopolita, *Warren*, Ins. 281
 Neorileya, *Ashmead*, Ins. 230
 Neosconella, *Cambridge*, Arachn. 29
 Neoseius, *Oudemans*, Arachn. 45
 Neosyagrius, *Lea*, Ins. 178
 Neotaxia, *Dognin*, Ins. 281
 Nephrocoria, *Stichel*, Ins. 246
 Nerissella, *Jacoby*, Ins. 194
 Nervicompressa, *Bethune-Baker*, Ins. 261
 Nesiophædusa, *Pilsbry*, Moll. 68
 Nesohippus, *Ameghino*, Mamm. 49
 Nesolycæna, *Waterhouse and Turner*, Ins. 250
 Nesomyia, *Ashmead*, Ins. 230
 Nezumia, *Jordan and Starks*, Pisces 40
 Nicholsonia, *Bogatirew*, Cœl. 30
 Nichomachus, *Distant*, Ins. 327
 Nicostratus, *Distant*, Ins. 327
 Niphoparmena, *Aurivillius*, Ins. 188
 Nipponites, *Yabe*, Moll. 60
 Nodulina, *Raffray*, Ins. 142
 Nomimonyx, *Faust*, Ins. 178
 Notamphicyon, *Ameghino*, Mamm. 50
 Notanisomorpha, *Ashmead*, Ins. 230
 Nothamusium, *Hind*, Moll. 90
 Notochampsia, *Broom*, Rept. 29
 Notoprotogonia, *Ameghino*, Mamm. 49
 Nyctereutica, *Turner*, Ins. 289
 Nycterorhinus, *Fairmaire*, Ins. 179
 Nyctibates, *Boulenger*, Rept. 36
 Nyctidea, *Reuter*, Ins. 327
 Nymannus, *Distant*, Ins. 328

 Ochisme, *Kirkaldy*, Ins. 315
 Ochleroptera, *Holmberg*, Ins. 212
 Ochrophlegma, *Bolívar*, Ins. 361
 Ochrorrhaca, *Bredden*, Ins. 318
 Ochrotettix, *Bruner*, Ins. 361
 Ocosia, *Jordan and Starks*, Pisces 31
 Octomitus, *Prowazek*, Prot. 57
 Octomyodon, *Ameghino*, Mamm. 51
 Octosmicra, *Ashmead*, Ins. 230
 Ocyglossa, *Giard*, Prot. 57
 Ocynectes, *Jordan and Starks*, Pisces 29
 Odontogonus, *Bergroth*, Ins. 323
 Odontopsalis, *Burr*, Ins. 353
 Odontothynnus, *Cameron*, Ins. 212
 Odontotrupes, *Boucomont*, Ins. 151
 Œdalechilus, *Fowler*, Pisces 41
 Œdaloneura, *Mabille*, Ins. 252
 Œdania, *Buckman*, Moll. 61

 Œmida, *Gahan*, Ins. 188
 Œmodana, *Gahan*, Ins. 188
 Œnides, *Mabille*, Ins. 252
 Œnomys, *Thomas*, Mamm. 40
 Ogovia, *Hansen and Sorensen*, Arachn. 37
 Ogulnia, *Cameron*, Ins. 221
 Olbophthalmus, *Simon*, Arachn. 32
 Oligozaptyx, *Pilsbry*, Moll. 68
 Olindioides, *Goto*, Cœl. 20
 Ollia, *Dyar*, Ins. 289
 Ololælaps, *Berlese*, Arachn. 45
 Omotimus, *Raffray*, Ins. 142
 Onchodellus, *Berlese*, Arachn. 46
 Oncinoproctus, *Bredden*, Ins. 318
 Oncochalcis, *Cameron*, Ins. 230
 Oncotophasma, *Rehn*, Ins. 356
 Oneilella, *Cameron*, Ins. 222
 Onomaus, *Distant*, Ins. 328
 Onychelus, *Cook*, Myr. 16
 Onycocaris, *Nobili*, Crust. 36
 Oocamenta, *Péringuey*, Ins. 154
 Oophædusa, *Pilsbry*, Moll. 68
 Ophelius, *Raffray*, Ins. 142
 Ophiochrysis, *Koehler*, Echin. 83
 Ophiocirce, *Koehler*, Echin. 83
 Ophiocrates, *Koehler*, Echin. 84
 Ophiodoris, *Koehler*, Echin. 84
 Ophiolutece, *Koehler*, Echin. 84
 Ophiomidas, *Koehler*, Echin. 85
 Ophiomoeris, *Koehler*, Echin. 85
 Ophiomytis, *Koehler*, Echin. 85
 Ophiononeura, *Cameron*, Ins. 222
 Ophiopallas, *Koehler*, Echin. 85
 Ophrygonius, *Zang*, Ins. 149
 Ophthalmotilapia, *Pellegrin*, Pisces 35
 Opisthoctenodon, *Broom*, Rept. 33
 Opisthodiscus, *Cohn*, Verm. 49
 Orbignyella, *Ulrich and Bassler*, Bry. 12
 Oreohelix, *Pilsbry*, Moll. 66
 Oreonoma, *Warren*, Ins. 281
 Oreophaetes, *Rehn*, Ins. 356
 Oreovalgus, *Kolbe*, Ins. 158
 Oria, *Distant*, Ins. 331
 Origenes, *Marshall*, Ins. 179
 Orinella, *Dall and Bartsch*, Moll. 83
 Ornicholax, *Carriker*, Ins. 345
 Ornithissus, *Fowler*, Ins. 333
 Oroacrodon, *Ameghino*, Mamm. 49
 Orthoarthrus, *Ameghino*, Mamm. 50
 Orthochalcis, *Kieffer*, Ins. 230
 Orthonecroscia, *Kirby*, Ins. 356
 Orthopodomys, *Theobald*, Ins. 301
 Orthoptila, *Meyrick*, Ins. 295
 Orthosurcula, *Casey*, Moll. 75

- Orthotropis, *Jordan*, Ins. 185
 Oslaria, *Dyar*, Ins. 269
 Osmanoceras, *Kittl*, Moll. 61
 Ostiolum, *Pratt*, Verm. 49
 Ostrodias, *Distant*, Ins. 324
 Otospira, *Perner*, Moll. 82
 Otouphepus, *Cushman*, Rept. 29
 Ouranion, *Kirkaldy*, Ins. 319
 Oxycordyla, *Topsent*, Spong. 21
 Oxycoryphus, *Cameron*, Ins. 230
 Oxydactylus, *Peterson*, Mamm. 44
 Oxyopsis, *Caudell*, Ins. 355
 Oxytoxia, *Mabille*, Ins. 252
- Pachycerianthus, *Roule*, Coel. 32
 Pachycrepoideus, *Ashmead*, Ins. 230
 Pachylister, *Lewis*, Ins. 146
 Pachynasua, *Ameghino*, Mamm. 50
 Pachyntheisa, *Fowler*, Ins. 333
 Pachystrophia, *Perner*, Moll. 80
 Pachytragus, *Schlosser*, Mamm. 43
 Pacificana, *Hogg*, Arachn. 32
 Pædiovalgus, *Kölbe*, Ins. 158
 Pagodea, *Perner*, Moll. 85
 Paineia, *Buckman*, Moll. 61
 Païta, *Fauvel*, Ins. 167
 Paiwarria, *Kaye*, Ins. 250
 Palæochamæleo, *De Stefano*, Rept. 25
 Palæocolpodia, *Meunier*, Ins. 124
 Palæognoriste, *Meunier*, Ins. 125
 Palæoheteromyza, *Meunier*, Ins. 125
 Palæoheterotricha, *Meunier*, Ins. 125
 Palæomantis, *Handlirsch*, Ins. 125
 Palæomastax, *Handlirsch*, Ins. 126
 Palæonustus, *Perner*, Moll. 82
 Palæopalara, *Handlirsch*, Ins. 125
 Palæorhinus, *Williston*, Rept. 32
 Palorthopteron, *Handlirsch*, Ins. 126
 Panaphis, *Kirkaldy*, Ins. 337
 Pancenia, *Meyrick*, Ins. 295
 Panilurus, *Jacoby*, Ins. 194
 Paniscomima, *Enderlein*, Ins. 212
 Papagoa, *Bruner*, Ins. 361
 Parabæra, *Dognin*, Ins. 289
 Parabasis, *Bethune-Baker*, Ins. 269
 Parabolbocoris, *Schouteden*, Ins. 318
 Paracamenta, *Péringuey*, Ins. 154
 Paraceryx, *Bethune-Baker*, Ins. 262
 Parachetolyga, *Bischof*, Ins. 309
 Parachleбата, *Bruner*, Ins. 361
 Parachrysops, *Bethune-Baker*, Ins. 250
 Paraclemensia, *Busck*, Ins. 295
 Paracælodus, *Ameghino*, Mamm. 49
 Paracoleotichus, *Schouteden*, Ins. 318
 Paracomucha, *Warren*, Ins. 282
- Paracrias, *Ashmead*, Ins. 230
 Paracrossochilus, *Popta*, Pisces 48
 Paractenodia, *Péringuey*, Ins. 171
 Paradiastylis, *Calman*, Crust. 39
 Paradidelpheys, *Ameghino*, Mamm. 50
 Paradohertya, *Bethune-Baker*, Ins. 262
 Paradoxodes, *Warren*, Ins. 282
 Paradoxorhyncha, *Chapman*, Crust. 54
 Paragambusia, *Meek*, Pisces 43
 Parahyænodon, *Ameghino*, Mamm. 50
 Paralagena, *Dall*, Moll. 78
 Paraleptynia, *Caudell*, Ins. 356
 Paraleucocelis, *Preiss*, Ins. 158
 Paralicerocyon, *Ganglbauer*, Ins. 133
 Paralixus, *Csiki*, Ins. 179
 Paralucia, *Waterhouse and Turner*, Ins. 250
 Paramusonia, *Rehn*, Ins. 355
 Paramyocastor, *Ameghino*, Mamm. 50
 Paramyxine, *Dean*, Pisces 57
 Paranauchenia, *Ameghino*, Mamm. 50
 Paranotropis, *Fowler*, Pisces 48
 Paranthopsis, *McMurrich*, Coel. 32
 Paranthribus, *Jordan*, Ins. 185
 Parapantilius, *Reuter*, Ins. 328
 Parapelopides, *Zang*, Ins. 149
 Parapenæon, *Richardson*, Crust. 42
 Paraphnæus, *Thierry-Mieg*, Ins. 250
 Paraplesius, *Hartmann*, Ins. 179
 Paraplodes, *Warren*, Ins. 282
 Parapœcilocoris, *Schouteden*, Ins. 318
 Parapœcilophila, *Hauser*, Ins. 158
 Parapteromalus, *Ashmead*, Ins. 230
 Paraptorthodius, *Schaeffer*, Ins. 163
 Paracrottherium, *Ameghino*, Mamm. 50
 Parasaphes, *Ashmead*, Ins. 230
 Paraschizognathus, *Ohaus*, Ins. 156
 Parascina, *Stebbing*, Crust. 46
 Parascutigera, *Verhoeff*, Myr. 9
 Parasiro, *Hansen and Sorensen*, Arachn. 37
 Paraspalangia, *Ashmead*, Ins. 230
 Parasteiomys, *Ameghino*, Mamm. 50
 Paratapisirus, *Depéret and Douxami*, Mamm. 45
 Parategastes, *Sars*, Crust. 51
 Paratemnus, *Ameghino*, Mamm. 50
 Paraterobia, *Ashmead*, Ins. 230
 Paraugaptilus, *Wolfenden*, Crust. 51
 Paraulax, *Kieffer*, Ins. 235
 Paravonones, *Cambridge*, Arachn. 38

- Parawixia, *Cambridge*, Arachn. 30
 Parazaptyx, *Pilsbry*, Moll. 68
 Parazeuzera, *Bethune-Baker*, Ins. 262
 Parelodina, *Bethune-Baker*, Ins. 250
 Parexillis, *Jordan*, Ins. 185
 Parocalea, *Bernhauer*, Ins. 137
 Parochlerus, *Breddin*, Ins. 318
 Parochthiphila, *Czerny*, Ins. 311
 Parocyusa, *Bernhauer*, Ins. 137
 Paromala, *Warren*, Ins. 282
 Paronesimus, *Stebbing*, Crust. 45
 Paronipora, *Capeder*, Cœl. 32
 Parosorius, *Bernhauer*, Ins. 137
 Parourapteryx, *Thierry-Mieg*, Ins. 282
 Parvanemus, *Mayer*, Cœl. 20
 Parviterebra, *Pilsbry*, Moll. 75
 Parvochlamys, *Sacco*, Moll. 90
 Pasaphylla, *Péringuey*, Ins. 154
 Patreus, *Raffray*, Ins. 142
 Pauluccia, *Brusina*, Moll. 79
 Paumomua, *Jacoby*, Ins. 194
 Pauropsalta, *Goding and Froggatt*, Ins. 331
 Peggichisme, *Kirkaldy*, Ins. 320
 Pegylidius, *Péringuey*, Ins. 154
 Pelorotelus, *Ashmead*, Ins. 230
 Penardia, *Cash*, Prot. 43
 Pentagalus, *Lyon*, Mamm. 42
 Pentanodes, *Schaeffer*, Ins. 188
 Pentanymphon, *Hodgson*, Crust. 61
 Pentasmicra, *Ashmead*, Ins. 231
 Pentatropis, *Faust*, Ins. 179
 Pentias, *Richardson*, Crust. 41
 Peradorcas, *Thomas*, Mamm. 48
 Peratodonta, *Aurivillius*, Ins. 262
 Peregrinator, *Kirkaldy*, Ins. 322
 Peregrinus, *Kirkaldy*, Ins. 333
 Perhippidion, *Ameghino*, Mamm. 49
 Periacrodon, *Ameghino*, Mamm. 49
 Peribolodes, *Warren*, Ins. 282
 Pericamenta, *Péringuey*, Ins. 154
 Periphymopsis, *Schouteden*, Ins. 318
 Peritragus, *Aurivillius*, Ins. 188
 Peronodoris, *Bergh*, Moll. 72
 Phænacantha, *Horváth*, Ins. 321
 Phænopharos, *Kirby*, Ins. 356
 Phaneroturis, *Bruner*, Ins. 361
 Phanerozonida, *Delage*, Echin. 79
 Phanophilus, *Ameghino*, Mamm. 49
 Phanosolena, *Schaeffer*, Ins. 185
 Pharyllus, *Distant*, Ins. 328
 Phasmatocoris, *Breddin*, Ins. 323
 Phaulocylliba, *Berlese*, Arachn. 46
 Phaulodinychus, *Berlese*, Arachn. 46
 Phaulosis, *Weise*, Ins. 194
 Phaulosomus, *Faust*, Ins. 179
 Pheidoloxenus, *Ashmead*, Ins. 231
 Philas, *Portevin*, Ins. 145
 Philodromoides, *Scheffer*, Arachn. 31
 Philosepedon, *Eaton*, Ins. 302
 Philosyrtris, *Giard*, Verm. 56
 Phlebosphales, *Warren*, Ins. 282
 Phlæogryptis, *Meyrick*, Ins. 295
 Phlyctænopora, *Topsent*, Spong. 25
 Phoberus, *Raffray*, Ins. 143
 Phoenixauchenia, *Ameghino*, Mamm. 50
 Pholeoteris, *Sturany*, Moll. 68
 Phoxargyrea, *Fowler*, Pisces 41
 Phrygiomurex, *Dall*, Moll. 78
 Phthartus, *Handlirsch*, Ins. 125
 Phthirocoris, *Distant*, Ins. 324
 Phyllochisme, *Kirkaldy*, Ins. 321
 Phyllolonche, *Popofsky*, Prot. 52
 Physalidonotus, *Ehlers*, Verm. 35
 Physalozircon, *Berlese*, Arachn. 46
 Physoglenes, *Simon*, Arachn. 23
 Phyteumas, *Bolívar*, Ins. 361
 Phytoseius, *Ribaya*, Arachn. 46
 Pietteia, *Cossmann*, Moll. 78
 Piezonemus, *Jordan*, Ins. 185
 Pilchenia, *Ameghino*, Mamm. 50
 Pilematechinus, *Agassiz*, Echin. 68
 Pionaces, *Simon*, Arachn. 32
 Pipetta, *Loman*, Crust. 61
 Piptocentrus, *Horváth*, Ins. 321
 Pistosia, *Weise*, Ins. 197
 Placerias, *Lucas*, Rept. 33
 Planitrochus, *Perner*, Moll. 85
 Platehippius, *Navás*, Ins. 361
 Platylistrum, *Schulze*, Spong. 14
 Platysphyrus, *Sloane*, Ins. 131
 Plectonotus, *Clarke*, Moll. 86
 Pleiophylla, *Péringuey*, Ins. 154
 Pleistophylla, *Péringuey*, Ins. 154
 Plerisca, *Bolívar*, Ins. 361
 Plesioctenodes, *Ashmead*, Ins. 231
 Pleurolopha, *Turner*, Ins. 282
 Pleuromphalus, *Perner*, Moll. 80
 Pleurophorella, *Girty*, Moll. 87
 Pleuroxonotus, *Reuter*, Ins. 328
 Plexotemnus, *Ameghino*, Mamm. 50
 Pliotropis, *Kobelt*, Moll. 63
 Plocamiopsis, *Topsent*, Spong. 25
 Ploconema, *Perner*, Moll. 85
 Plocovalgus, *Kolbe*, Ins. 158
 Pœcilochlora, *Warren*, Ins. 282
 Pœcilolagus, *Lyon*, Mamm. 42
 Pogonocæbus, *Trouessart*, Mamm. 33
 Polistella, *Ashmead*, Ins. 208
 Polistoides, *Dalla Torre*, Ins. 209
 Polyandrocarpa, *Michaelsen*, Tun. 7
 Polychelus, *Luze*, Ins. 138
 Polychisme, *Kirkaldy*, Ins. 320
 Polychnomyia, *Bischof*, Ins. 309

- Polymniella, *Verrill*, Verm. 32
 Polyniphes, *Kaye*, Ins. 250
 Polyplax, *Enderlein*, Ins. 340
 Polystylops, *Ameghino*, Mamm. 50
 Pomponatus, *Distant*, Ins. 320
 Pontogammarus, *Sowinsky*, Crust. 45
 Poppia, *Konow*, Ins. 237
 Poricella, *Canu*, Bry. 15
 Poronotellus, *Kirkaldy*, Ins. 324
 Porteria, *Simon*, Arachn. 32
 Poultonia, *Neave*, Ins. 250
 Parchus, *Brown*, Ins. 180
 Prepothierops, *Ameghino*, Mamm. 50
 Presbole, *Handlirsch*, Ins. 125
 Prionolixus, *Desbrochers*, Ins. 180
 Priperia, *Simon*, Arachn. 30
 Proactica, *Walsingham*, Ins. 295
 Proarctotherium, *Ameghino*, Mamm. 50
 Probænia, *Weise*, Ins. 197
 Probergrothius, *Kirkaldy*, Ins. 320
 Procatopus, *Boulenger*, Pisces 42
 Prodimaliscus, *Schlosser*, Mamm. 43
 Prodecatoma, *Ashmead*, Ins. 231
 Prodicynodon, *Broom*, Rept. 33
 Prodontria, *Brown*, Ins. 154
 Prodosiarcha, *Meyrick*, Ins. 295
 Prodromus, *Distant*, Ins. 328
 Proctocion, *Ameghino*, Mamm. 50
 Progaleopithecus, *Ameghino*, Mamm. 49
 Progarzonina, *Ameghino*, Mamm. 50
 Progonopteryx, *Handlirsch*, Ins. 125
 Promacrauchenia, *Ameghino*, Mamm. 50
 Promioclenus, *Trouessart*, Mamm. 38
 Promyrmephagus, *Ameghino*, Mamm. 50
 Pronolagus, *Lyon*, Mamm. 42
 Pronopharynx, *Cohn*, Verm. 50
 Pronycticebus, *Trouessart*, Mamm. 34
 Propantostylops, *Ameghino*, Mamm. 50
 Proplatygaster, *Kieffer*, Ins. 234
 Propreoptherium, *Ameghino*, Mamm. 50
 Prorocrania, *Turner*, Ins. 283
 Prosagola, *Raffray*, Ins. 143
 Proscyllium, *Hilgendorf*, Pisces 55
 Prosolarium, *Perner*, Moll. 80
 Prospaltella, *Ashmead*, Ins. 231
 Prosthenops, *Matthew and Gidley*, Mamm. 44
 Prostoma, *Warren*, Ins. 283
 Protamandua, *Ameghino*, Mamm. 50
 Protapoica, *Dalla Torre*, Ins. 209
 Proteimissus, *Fowler*, Ins. 334
 Proteriades, *Titus*, Ins. 205
 Proterix, *Matthew*, Mamm. 36
 Protobalanus, *Cavallery and Mesnil*, Verm. 57
 Protocallidium, *Csiki*, Ins. 189
 Protocetus, *Fraas*, Mamm. 47
 Protocryptus, *Schmiedeknecht*, Ins. 222
 Protoculex, *Felt*, Ins. 301
 Protodiscoelium, *Dalla Torre*, Ins. 209
 Prototechia, *Meyrick*, Ins. 295
 Protomacronema, *Ulmer*, Ins. 342
 Protopalpythoa, *Verrill*, Cœl. 33
 Protosiren, *Abel*, Mamm. 47
 Protosurcula, *Casey*, Moll. 75
 Protothelpus, *Verrill*, Verm. 35
 Protrachysaurus, *De Stefano*, Rept. 25
 Proutista, *Kirkaldy*, Ins. 332
 Provola, *Swinhoe*, Ins. 283
 Pselaphelia, *Aurivillius*, Ins. 263
 Pselliophora, *Verhoeff*, Myr. 9
 Pseudachloa, *Péringuey*, Ins. 154
 Pseudætideus, *Wolfenden*, Crust. 52
 Pseudasellodes, *Warren*, Ins. 283
 Pseudelma, *Kobelt*, Moll. 62
 Pseudeurina, *de Meijere*, Ins. 311
 Pseudilema, *Bethune-Baker*, Ins. 263
 Pseudobracon, *Szépligeti*, Ins. 225
 Pseudobradya, *Sars*, Crust. 52
 Pseudocamenta, *Péringuey*, Ins. 154
 Pseudochæta, *Kirby*, Ins. 355
 Pseudocrociniis, *Swinhoe*, Ins. 283
 Pseudocucullæa, *Solger*, Moll. 91
 Pseudodreata, *Bethune-Baker*, Ins. 263
 Pseudofeltria, *Soar*, Arachn. 46
 Pseudogargetta, *Bethune-Baker*, Ins. 263
 Pseudohelicoptera, *Fowler*, Ins. 334
 Pseudolabis, *Matthew*, Mamm. 44
 Pseudolacerta, *De Stefano*, Rept. 25
 Pseudomasareus, *Desbrochers*, Ins. 131
 Pseudomimus, *Hartmann*, Ins. 180
 Pseudopedaria, *Felsche*, Ins. 152
 Pseudopercis, *Miranda Ribeiro*, Pisces 38
 Pseudoryxa, *Schmidt*, Ins. 335
 Pseudosalus, *Ashmead*, Ins. 213
 Pseudosastra, *Jacoby*, Ins. 195
 Pseudoschizognathus, *Ohaus*, Ins. 156

- Pseudostromborrhinus, *Heller*, Ins. 180
 Pseudotectus, *Perner*, Moll. 85
 Pseudotragus, *Schlosser*, Mamm. 43
 Pseudotruncatella, *Andreae*, Moll. 81
 Pseudotylostoma, *Ihering*, Moll. 82
 Pseudotypotherium, *Ameghino*, Mamm. 49
 Pseustophylla, *Péringuey*, Ins. 154
 Psilochalcis, *Kieffer*, Ins. 231
 Psilocochlis, *Dall*, Moll. 77
 Psilotrichus, *Luze*, Ins. 138
 Psodopsis, *Warren*, Ins. 283
 Psoralis, *Mabille*, Ins. 252
 Psorosina, *Dyar*, Ins. 289
 Psychophagus, *Mayr*, Ins. 231
 Pteroceropus, *Swinkoe*, Ins. 263
 Pterygascidia, *Sluiter*, Tun. 7
 Ptilogonia, *Bischof*, Ins. 309
 Ptilophyllodromia, *Bezzi*, Ins. 306
 Ptomatis, *Clarke*, Moll. 86
 Ptychocladia, *Ulrich and Bassler*, Bry. 17
 Ptychocynodon, *Seeley*, Rept. 33
 Ptychonema, *Perner*, Moll. 82
 Ptychorhytida, *Kobelt*, Moll. 62
 Purcellia, *Hansen and Sorensen*, Arachn. 37
 Pycnomma, *Rutter*, Pisces 32
 Pycnomutilla, *Ashmead*, Ins. 213
 Pycnotrochus, *Perner*, Moll. 85
 Pygæomorpha, *Bethune-Baker*, Ins. 263
 Pyralophodon, *Ameghino*, Mamm. 50
 Pyrrhocalcia, *Mabille*, Ins. 252

 Quadrimetron, *Popofsky*, Prot. 52
 Quadrinervus, *Cossmann*, Moll. 78
 Quadristaurus, *Popofsky*, Prot. 52
 Quercetanus, *Distant*, Ins. 323

 Radamellus, *Raffray*, Ins. 143
 Ragnar, *Kirkaldy*, Ins. 324
 Ramella, *Schulze*, Spong. 17
 Raphidocystis, *Penard*, Prot. 50
 Rathymotherium, *Ameghino*, Mamm. 50
 Reedia, *Ashmead*, Ins. 213
 Regania, *Jordan and Starks*, Pisces 40
 Rekoa, *Kaye*, Ins. 250
 Renicola, *Cohn*, Verm. 50
 Renifer, *Pratt*, Verm. 50
 Reuterista, *Kirkaldy*, Ins. 324
 Rhabdochæta, *de Meijere*, Ins. 311
 Rhabdoploca, *Topsent*, Spong. 25
 Rhabdospira, *Perner*, Moll. 80
 Rhacocassis, *Spaeth*, Ins. 198
 Rhamphixius, *Fowler*, Ins. 334
 Rheopresbe, *Jordan and Starks*, Pisces 29
 Rhinura, *Warren*, Ins. 284
 Rhodanomys, *Depéret and Douxami*, Mamm. 41
 Rhodomena, *Warren*, Ins. 284
 Rhombotrypa, *Ulrich and Bassler*, Bry. 13
 Rhopalithes, *Grabau*, Moll. 77
 Rhynchomesostoma, *Luther*, Verm. 44
 Rhynchophalera, *Aurivillius*, Ins. 263
 Rhypastus, *Fairmaire*, Ins. 180
 Ricuzenius, *Jordan and Starks*, Pisces 29
 Rihana, *Distant*, Ins. 331
 Robertsonella, *Titus*, Ins. 206
 Ropaliceschatus, *Reuter*, Ins. 328
 Rosetta, *Popofsky*, Prot. 52
 Rotellomphalus, *Perner*, Moll. 85
 Rozinante, *Stebbing*, Crust. 45
 Rulandus, *Distant*, Ins. 323
 Ruscula, *Casey*, Moll. 75

 Sabellicus, *Distant*, Ins. 328
 Sabljaria, *Brusina*, Moll. 66
 Saccoina, *Dall and Bartsch*, Moll. 84
 Saccoploca, *Warren*, Ins. 284
 Sadaka, *Distant*, Ins. 331
 Salagosa, *Raffray*, Ins. 143
 Saprus, *Blackburn*, Ins. 152
 Sarcoborus, *Oudemans*, Arachn. 46
 Sarega, *Mabille*, Ins. 252
 Sargocentron, *Fowler*, Pisces 39
 Sarisophora, *Meyrick*, Ins. 296
 Sarostegia, *Topsent*, Spong. 17
 Sarotorna, *Meyrick*, Ins. 296
 Saycia, *Sars*, Crust. 49
 Sayiella, *Ashmead*, Ins. 231
 Scapanodon, *Broom*, Rept. 32
 Scaptocosa, *Banks*, Arachn. 35
 Scaridea, *Jenkins*, Pisces 34
 Scelidotheriops, *Ameghino*, Mamm. 51
 Scenidiopsis, *Turner*, Ins. 290
 Sclerothamnopsis, *Wilson*, Spong. 16
 Schizanooplus, *Cameron*, Ins. 213
 Schizoblattina, *Sellards*, Ins. 126
 Schizochirus, *Waite*, Pisces 28
 Schizocosa, *Chamberlin*, Arachn. 35
 Schletteriella, *Szépligeti*, Ins. 225

- Schmidtia, *Jordan and Starks*,
 Pisces 29
 Schmittina, *Jordan and Starks*,
 Pisces 29
 Schonlandella, *Cameron*, Ins. 225
 Schuchertella, *Girty*, Brach. 7
 Schwarzella, *Ashmead*, Ins. 231
 Sciaphobus, *Daniel*, Ins. 180
 Sciarella, *Meunier*, Ins. 125
 Scirtetica, *Holmberg*, Ins. 206
 Sclerodoris, *Eliot*, Moll. 72
 Scotocyma, *Warren*, Ins. 284
 Scotophilus, *Hartmann*, Ins. 180
 Scotolinx, *Ashmead*, Ins. 231
 Scutigerides, *Silvestri*, Myr. 9
 Scutigerina, *Silvestri*, Myr. 10
 Scutomysia, *Theobald*, Ins. 301
 Scutops, *Coquillett*, Ins. 311
 Scymnophagus, *Ashmead*, Ins. 231
 Scymnopsis, *Jordan*, Ins. 185
 Scytinoptera, *Handlirsch*, Ins. 125
 Scytoglossa, *Luze*, Ins. 138
 Sebaia, *Oudemans*, Arachn. 47
 Sebakue, *Péringuey*, Ins. 155
 Sebastiscus, *Jordan and Starks*,
 Pisces 30
 Segestriella, *Purcell*, Arachn. 23
 Seguenziella, *Sacco*, Moll. 80
 Selenechinus, *de Meijere*, Echin. 72
 Sellinema, *Perner*, Moll. 85
 Semnosia, *Daniel*, Ins. 189
 Sepidiocoris, *Schouteden*, Ins. 319
 Serapista, *Cockerell*, Ins. 206
 Serdis, *Mabille*, Ins. 252
 Seridentus, *Osborn*, Ins. 323
 Serpho, *Hutton*, Moll. 64
 Sellius, *Distant*, Ins. 324
 Severinina, *Schouteden*, Ins. 319
 Seymouria, *Broili*, Rept. 33
 Shalisha, *Cameron*, Ins. 222
 Siderus, *Kaye*, Ins. 250
 Siebenrockia, *Poche*, Rept. 27
 Sietitia, *Abeille*, Ins. 133
 Sigmomys, *Ameghino*, Mamm. 50
 Silphosoma, *Portevin*, Ins. 145
 Silvestrina, *Prever*, Prot. 49
 Silvitettix, *Bruner*, Ins. 362
 Simplimus, *Ameghino*, Mamm. 50
 Sinoennea, *Kobelt*, Moll. 62
 Sinophthalmus, *Coquillett*, Ins. 311
 Sinutropis, *Perner*, Moll. 80
 Sisantum, *Bruner*, Ins. 362
 Slossonella, *Dyar*, Ins. 264
 Smenodoca, *Meyrick*, Ins. 296
 Sminthocoris, *Distant*, Ins. 324
 Snowiellus, *Hine*, Ins. 303
 Socarnella, *Walker*, Crust. 45
 Socnopæa, *Stromer*, Pisces 46
 Solenispa, *Weise*, Ins. 198
 Solenopotes, *Enderlein*, Ins. 340
 Somatoxena, *Aurivillius*, Ins. 264
 Sophianus, *Distant*, Ins. 328
 Sophraenella, *Jacoby*, Ins. 195
 Sorecocephala, *Bernhauer*, Ins. 138
 Southia, *Kirkaldy*, Ins. 332
 Spathopus, *Ashmead*, Ins. 231
 Spatularia, *van Deventer*, Ins. 296
 Sphæractinomyxon, *Caullery and Mesnil*, Prot. 56
 Sphærolaelaps, *Berlese*, Arachn. 47
 Sphæromimonectes, *Woltereck*,
 Crust. 46
 Sphæronellopsis, *Hansen*, Crust. 52
 Sphæroseius, *Berlese*, Arachn. 47
 Sphaleractis, *Meyrick*, Ins. 296
 Sphenalia, *Daniel*, Ins. 189
 Sphendononema, *Verhoeff*, Myr. 10
 Sphingmocephalus, *Enderlein*, Ins.
 324
 Sphinctovalgus, *Kolbe*, Ins. 158
 Sphinta, *Schaus*, Ins. 264
 Spilojoppa, *Cameron*, Ins. 222
 Spilopimpla, *Cameron*, Ins. 222
 Spilovalgus, *Kolbe*, Ins. 158
 Spiticeras, *Uhlig*, Moll. 61
 Sporostigena, *Bethune-Baker*, Ins.
 264
 Squamosala, *Bethune-Baker*, Ins. 264
 Stalonchodes, *Kirby*, Ins. 357
 Stantonina, *Ashmead*, Ins. 225
 Staurostigma, *Verrill*, Verm. 36
 Stegasta, *Meyrick*, Ins. 296
 Stegias, *Richardson*, Crust. 42
 Stegius, *Distant*, Ins. 324
 Stellacantha, *Popofsky*, Prot. 52
 Stellolonche, *Popofsky*, Prot. 52
 Stelodoryx, *Topsent*, Spong. 25
 Stenolandra, *Fairmaire*, Ins. 181
 Stenomesioidea, *Ashmead*, Ins. 231
 Stenonyx, *Lull*, Rept. 29
 Stereotoxodon, *Ameghino*, Mamm.
 49
 Sthenobela, *Turner*, Ins. 290
 Stictocoris, *Kirkaldy*, Ins. 315
 Stigmatella, *Ulrich and Bassler*,
 Bry. 13
 Stigmatocrepis, *Ashmead*, Ins. 232
 Stigmomela, *Csiki*, Ins. 195
 Stilhippus, *Ameghino*, Mamm. 49
 Stiva, *Hedley*, Moll. 80
 Stlengis, *Jordan and Starks*, Pisces
 29
 Stokeia, *Buckman*, Moll. 61
 Stomega, *Dall and Bartsch*, Moll. 84
 Strabops, *Jordan*, Ins. 185
 Stramia, *Marshall*, Ins. 181

- Streptochetus*, *Seely*, Spong. 26
Strombopsis, *Raffray*, Ins. 143
Struthiolariopsis, *Wilckens*, Moll. 78
Styloceros, *Meyrick*, Ins. 296
Stylophorella, *Ashmead*, Ins. 232
Styphlosoma, *Blandford*, Ins. 183
Sulcorinella, *Dall and Bartsch*, Moll. 84
Sundarion, *Kirkaldy*, Ins. 336
Suntemnonycha, *Péringuey*, Ins. 155
Surculoma, *Casey*, Moll. 75
Sustenodactylus, *Lull*, Rept. 33
Sva, *Enderlein*, Ins. 344
Sycoscapterella, *Ashmead*, Ins. 232
Sycoscapteridea, *Ashmead*, Ins. 232
Symbalophlebia, *Handlirsch*, Ins. 126
Symbolistis, *Meyrick*, Ins. 296
Symmius, *Richardson*, Crust. 41
Symmyrmica, *Wheeler*, Ins. 217
Sympheidole, *Wheeler*, Ins. 217
Symphonistis, *Turner*, Ins. 290
Symphylax, *Horváth*, Ins. 321
Sympiesomorpha, *Ashmead*, Ins. 232
Synale, *Mabille*, Ins. 252
Synapte, *Mabille*, Ins. 252
Synapticola, *Malard*, Moll. 87
Synechocryptus, *Schmiedeknecht*, Ins. 222
Syngonivalgus, *Kolbe*, Ins. 158
Synogdoa, *Aurivillius*, Ins. 264
Synsillus, *Verrill*, Vermes 32
Syntaruchoides, *Kaye*, Ins. 251
Synrolina, *Dall and Bartsch*, Moll. 84
Systatica, *Turner*, Ins. 285

Tachardiæphagus, *Ashmead*, Ins. 232
Tachinaephagus, *Ashmead*, Ins. 232
Tæniola, *Dall*, Moll. 78
Taftia, *Ashmead*, Ins. 232
Tagalisca, *Horváth*, Ins. 321
Tamarinus, *Trouessart*, Mamm. 34
Tamboeria, *Seeley*, Rept. 33
Tancredus, *Distant*, Ins. 329
Tanita, *Bolívar*, Ins. 362
Tanqua, *Blanchard*, Verm. 54
Tanyjoppa, *Cameron*, Ins. 222
Tanynotus, *Cameron*, Ins. 235
Tapesia, *Bolívar*, Ins. 362
Taphrocranium, *Horváth*, Ins. 321
Tapinomorphus, *Hartmann*, Ins. 181
Tapinotaspis, *Holmberg*, Ins. 206
Taramelliceras, *Campana*, Moll. 61
Tarsoplectrus, *Lull*, Rept. 33

Tatria, *Kowalewski*, Verm. 47
Tectospira, *Picard*, Moll. 85
Tegeotherium, *Ameghino*, Mamm. 49
Teleorhinus, *Osborn*, Rept. 29
Teleutemnesta, *Holmberg*, Ins. 206
Telmatoscopus, *Eaton*, Ins. 302
Temnospira, *Perner*, Moll. 85
Tenuitarsus, *Bolívar*, Ins. 362
Termitogeton, *Desneux*, Ins. 346
Tersomia, *Kirby*, Ins. 357
Terpnochlorus, *Fairmaire*, Ins. 195
Terupis, *Simon*, Arachn. 32
Tetracystis, *Schuchert*, Echin. 95
Tetradelus, *Fauvel*, Ins. 138
Tetragonites, *Kittl*, Moll. 61
Tetranemopteryx, *Ashmead*, Ins. 232
Tetranychoides, *Banks*, Arachn. 47
Tetrarthra, *Dalla Torre*, Ins. 209
Tetrasmicra, *Ashmead*, Ins. 232
Tetrochlerus, *Breddin*, Ins. 319
Tettigoniella, *Jacobi*, Ins. 336
Texas, *Kirkaldy*, Ins. 315
Thalamarchis, *Meyrick*, Ins. 296
Thalattosaurus, *Merriam*, Rept. 32
Thanatophantia, *Kirkaldy*, Ins. 332
Thanatophara, *Kirkaldy*, Ins. 332
Thascia, *Cameron*, Ins. 223
Thaumastosaurus, *De Stefano*, Rept. 25
Thaumatoxena, *Breddin and Börner*, Ins. 315
Thaumonectes, *Senna*, Crust. 46
Theocopterus, *Smith*, Pisces 30
Thereuonema, *Verhoeff*, Myr. 10
Thereuopoda, *Verhoeff*, Myr. 10
Thermia, *Hutton*, Moll. 64
Thiotricha, *Meyrick*, Ins. 296
Thnetus, *Handlirsch*, Ins. 125
Thomosis, *Brown*, Ins. 133
Thorichthys, *Meek*, Pisces 35
Thoscora, *Schaus*, Ins. 265
Thrasymedes, *Kirkaldy*, Ins. 336
Threticus, *Eaton*, Ins. 302
Thrombus, *Oudemans*, Arachn. 47
Thryorchilus, *Oberholser*, Aves 57
Thurselinus, *Distant*, Ins. 330
Thynnica, *Miculicich*, Crust. 52
Thyregis, *Blackburn*, Ins. 152
Thyreosphex, *Ashmead*, Ins. 213
Thyreothremma, *Holmberg*, Ins. 206
Thyripton, *Bruner*, Ins. 362
Thysanichthys, *Jordan and Starks*, Pisces 30
Thysanocraspeda, *Warren*, Ins. 285
Thysanoctena, *Warren*, Ins. 285
Thysdarius, *Raffray*, Ins. 143
Tianella, *Attems*, Myr. 13

- Tichonia, *Semenow*, Ins. 132
 Timarchella, *Jacoby*, Ins. 195
 Tlaocera, *Péringuey*, Ins. 155
 Tmetomorpha, *Warren*, Ins. 286
 Tocris, *Brown*, Ins. 181
 Tœchomya, *Clarke*, Moll. 91
 Tomogonus, *d'Orbigny*, Ins. 152
 Tomopleura, *Casey*, Moll. 75
 Tomopygia, *Burr*, Ins. 353
 Tortilla, *Perner*, Moll. 85
 Toxotemnus, *Ameghino*, Mamm. 50
 Toxus, *Eigenmann*, Pisces 43
 Trachelonotus, *Reuter*, Ins. 329
 Trachyforcepia, *Topsent*, Spong. 25
 Trachytropis, *Jordan*, Ins. 185
 Tragelaphodes, *Bergroth*, Ins. 324
 Trapezorrhina, *Hauser*, Ins. 158
 Triarthra, *Dalla Torre*, Ins. 209
 Trichaulus, *Enderlein*, Ins. 340
 Trichencyrtus, *Ashmead*, Ins. 232
 Trichobasis, *Reuter*, Ins. 329
 Trichocentrus, *Horváth*, Ins. 321
 Trichocerapis, *Cockerell*, Ins. 206
 Trichochalcis, *Kieffer*, Ins. 232
 Trichochermes, *Kirkaldy*, Ins. 337
 Trichoclystis, *Warren*, Ins. 286
 Trichodriloides, *Fauvel*, Verm. 39
 Trichosphærule, *Fleischer*, Ins. 145
 Trichosterrha, *Warren*, Ins. 286
 Trichovalgus, *Kolbe*, Ins. 158
 Tricliophora, *Jacoby*, Ins. 195
 Trigonogastra, *Ashmead*, Ins. 232
 Trigonomelea, *Warren*, Ins. 286
 Trimegistus, *Jordan and Snyder*,
 Pisces 29
 Trimerocystis, *Schuchert*, Echin. 95
 Triædusa, *Mabille*, Ins. 252
 Trioplognathus, *Ohaus*, Ins. 156
 Triplatyx, *Horváth*, Ins. 319
 Tripleurocrinus, *Wood*, Echin. 93
 Triptognathus, *Berthoumieu*, Ins.
 223
 Trismicra, *Ashmead*, Ins. 232
 Tristylotus, *Parkes*, Coel. 21
 Tritadelpa, *Meyrick*, Ins. 296
 Triticites, *Girty*, Prot. 49
 Tritodiscoelius, *Dalla Torre*, Ins. 209
 Tritoniscus, *Dall*, Moll. 78
 Tritonocauda, *Dall*, Moll. 78
 Trizona, *Popofsky*, Prot. 52
 Trochuda, *Schaus*, Ins. 265
 Tropæas, *Dall and Bartsch*, Moll. 84
 Tropidogastra, *Ashmead*, Ins. 233
 Tropisurcula, *Casey*, Moll. 75
 Trotorhombia, *Warren*, Ins. 286
 Trypanophis, *Keysseltz*, Prot. 57
 Tubogyra, *Perner*, Moll. 86
 Tubomphalus, *Perner*, Moll. 86
 Tulbaghia, *Péringuey*, Ins. 155
 Turnebus, *Distant*, Ins. 329
 Turriger, *Kertész*, Ins. 312
 Turritriton, *Dall*, Moll. 78
 Tylobolus, *Cook*, Myr. 16
 Tylocrinus, *Wood*, Echin. 93
 Tylokepon, *Stebbing*, Crust. 42
 Tylopeltis, *Reuter*, Ins. 329
 Tyraquellus, *Distant*, Ins. 329
 Umbospira, *Perner*, Moll. 86
 Umbotrochus, *Perner*, Moll. 86
 Umbotropis, *Perner*, Moll. 86
 Udenocera, *Ricardo*, Ins. 303
 Ugada, *Distant*, Ins. 331
 Uhligia, *Koenen*, Moll. 61
 Ulfa, *Dall and Bartsch*, Moll. 84
 Uliura, *Warren*, Ins. 286
 Umjaba, *Distant*, Ins. 332
 Uncifer, *Jordan*, Ins. 185
 Urobopyrus, *Richardson*, Crust. 42
 Urocalpe, *Warren*, Ins. 286
 Uroderostenus, *Ashmead*, Ins. 233
 Urodinychus, *Berlese*, Arachn. 48
 Uroentedon, *Ashmead*, Ins. 233
 Uroiphis, *Berlese*, Arachn. 48
 Urometopus, *Formanek*, Ins. 181
 Uroobovella, *Berlese*, Arachn. 48
 Uroplitella, *Berlese*, Arachn. 48
 Urotachytes, *Berlese*, Arachn. 49
 Ussuria, *Nikolski*, Pisces 49
 Vagna, *Dall and Bartsch*, Moll. 84
 Valdiviella, *Steuer*, Crust. 52
 Valleriola, *Distant*, Ins. 329
 Vanduzeeina, *Schouteden*, Ins. 319
 Varania, *Simroth*, Moll. 63
 Varanosaurus, *Brioli*, Rept. 33
 Varicobela, *Casey*, Moll. 75
 Varneria, *Dyar*, Ins. 291
 Varroa, *Oudemans*, Arachn. 49
 Vaucheria, *Pallary*, Moll. 63
 Vellitor, *Jordan and Starks*, Pisces
 29
 Venustria, *Goding and Froggatt*,
 Ins. 332
 Veraëqua, *Jordan and Starks*, Pisces
 32
 Veroeia, *Baker*, Crust. 37
 Versispira, *Perner*, Moll. 82
 Verticipronus, *Hedley*, Moll. 89
 Vestura, *Swinhoe*, Ins. 271
 Veternio, *Snyder*, Pisces 45
 Vidoviccia, *Brusina*, Moll. 66
 Vijaya, *Walker*, Crust. 46
 Vilia, *Dall and Bartsch*, Moll. 84

- Villanovanus, *Distant*, Ins. 324
 Visma, *Dall and Bartsch*, Moll. 84
 Volkeliu8, *Distant*, Ins. 329
 Voluspa, *Dall and Bartsch*, Moll. 84
 Vulnus, *Sykes*, Moll. 66
 Wagneriana, *Cambridge*, Arachn. 30
 Westerlundia, *Kobelt*, Moll. 67
 Westermannias, *Kirkaldy*, Ins. 322
 Westwoodella, *Ashmead*, Ins. 233
 Westwoodiella, *Szépligeti*, Ins. 225
 Wettsteinia, *Dalla Torre*, Ins. 209
 Willistoniella, *Meunier*, Ins. 125
 Xanium, *Enderlein*, Ins. 181
 Xanthoatomus, *Ashmead*, Ins. 233
 Xanthomelanus, *Ashmead*, Ins. 233
 Xanthomicrodus, *Cameron*, Ins. 225
 Xenapates, *Eaton*, Ins. 302
 Xenocara, *Regan*, Pisces 46
 Xenogramma, *Waite*, Pisces 33
 Xenolina, *Jacoby*, Ins. 195
 Xenomacrus, *Faust*, Ins. 181
 Xenopelidnota, *Bates*, Ins. 156
 Xenotherium, *Ameghino*, Mamm. 49
 Xerociris, *Cockerell*, Ins. 271
 Xestopsylla, *Baker*, Ins. 314
 Xosa, *Kirkaldy*, Ins. 315
 Xosias, *Kirkaldy*, Ins. 332
 Xosophora, *Kirkaldy*, Ins. 332
 Xosopsaltria, *Kirkaldy*, Ins. 332
 Xylecata, *Swinhoe*, Ins. 265
 Xystocheir, *Cook*, Myr. 14
 Yanga, *Distant*, Ins. 332
 Zagrammosoma, *Ashmead*, Ins. 233
 Zaischnopsis, *Ashmead*, Ins. 233
 Zanchisme, *Kirkaldy*, Ins. 324
 Zanchius, *Distant*, Ins. 329
 Zanolphara, *Kirkaldy*, Ins. 336
 Zaommomyia, *Ashmead*, Ins. 233
 Zapata, *Bruner*, Ins. 362
 Zelinkia, *Giard*, Verm. 56
 Zenida, *Mabille*, Ins. 252
 Zethoides, *Cameron*, Ins. 209
 Zeuctostyla, *Warren*, Ins. 286
 Zophopetes, *Mabille*, Ins. 252
 Zygacantha, *Popofsky*, Prot. 52
 Zygapophysia, *Popofsky*, Prot. 52
 Zygolonche, *Popofsky*, Prot. 52
 Zygolonychium, *Popofsky*, Prot. 52
 Zygoptera, *Popofsky*, Prot. 52

CORRIGENDA.

- GEN. SUB., p. 46, Title 805, for "SOHOETENSACK" read "SCHOETENSACK."
 INSECTA, p. 133, line 6 from bottom, for "*Annommatophilus*" read "*Anommatophilus*."
 „ p. 145, line 4, for "*Blatrodromus*" read "*Blattodromus*."
 „ p. 173, line 17 from bottom, for "*Centorrhynchus*" read "*Ceutorrhynchus*."
 „ p. 217, line 11, for "*Sympheisole*" read "*Sympheidole*."
 „ p. 231, line 2, for "*Pestasmicra*" read "*Pentasmicra*."

END OF THE FORTY-FIRST VOLUME.

TO THE EDITOR

THE ZOOLOGICAL RECORD.

THE object of the ZOOLOGICAL RECORD is to give, by means of an annual Volume, complete lists of the Works and Publications relating to Zoology in all its branches that have appeared during the year preceding the issue of the Volume, together with full information as to the points they deal with, arranged in such a manner as to serve as an Index to the literature of Zoology in all parts of the globe, and thus to form a repertory that will retain its value for the Student in future years.

The 'Zoological Record,' after Vol. 40, will be published by the Society at the price of 40s. per volume. But all Members of the Zoological Society of London will have the privilege of receiving it, including the cost of delivery, at a subscription price of 30s. per annum. This Subscription is due on the 1st of July in every year, and the privilege of Subscription is forfeited unless the amount be paid before the 1st of December following.

The Zoological Society, having purchased the entire stock of the 'Zoological Record,' is able to supply complete sets. The thirty-seven Volumes to the end of the nineteenth century, and the Index-Volume (1880-1900) in addition, will be supplied for £15 net (or *without* the Index-Volume, for £14. 10s. net). Volumes of any single year (exclusive of the last five volumes and Vol. 6) can likewise be supplied at 10s. per volume net.

The price of the Index Zoologicus (Index Volume 1880-1900) is 20s., to Fellows 18s.

Members of the Society wishing to subscribe to the 'Record' are requested to apply at this office for a Form, to be returned when filled up and signed by the subscriber. In order to facilitate the payment of the subscription, a Banker's Order Form is also supplied to those who prefer that mode of payment. This order, when filled up and signed, should be sent to the Society's office for registration; it will then be sent to the Agents named therein.

Learned Societies and Institutions and members of the former Zoological Record Association are permitted to subscribe to the 'Record' on the same conditions as are accorded to Members of the Zoological Society.

The divisions of the Zoological Record may be obtained separately as shown on the next page.

SEPARATE DIVISIONS OF THE ZOOLOGICAL RECORD.

At present each Volume of the ZOOLOGICAL RECORD consists of 20 separately paged Divisions. These may be obtained separately, in paper-covers, stitched and lettered.

The following are the Divisions and their net prices, viz.:—

| | s. | d. |
|--|----|----|
| List of abbreviations of journals, etc. | 2 | 0 |
| Special Records, viz.:— | | |
| I. General Subjects | 2 | 6 |
| II. Mammalia | 2 | 6 |
| III. Aves | 6 | 0 |
| IV. Reptilia and Batrachia | 2 | 6 |
| V. Pisces | 2 | 6 |
| VI. Tunicata | 1 | 0 |
| VII. Mollusca | 4 | 0 |
| VIII. Brachiopoda | 1 | 0 |
| IX. Bryozoa | 1 | 0 |
| X. Crustacea | 2 | 6 |
| XI. Arachnida | 2 | 0 |
| XII. Myriopoda | 1 | 6 |
| XIII. Insecta | 12 | 0 |
| XIV. Echinoderma | 3 | 6 |
| XV. Vermes | 3 | 0 |
| XVI. Cœlenterata | 1 | 6 |
| XVII. Spongiæ | 2 | 0 |
| XVIII. Protozoa | 2 | 0 |
| Index of new names of genera and subgenera | 2 | 0 |

On receipt of the price any Division will be forwarded as soon as ready.

These separate Divisions can be obtained from the Zoological Society, 3 Hanover Square, London, and also from Messrs Friedländer & Sohn, 11 Carlstrasse, Berlin. Cheques and Post-office orders should be made payable to "The Zoological Society" and crossed "Drummond's."

P. CHALMERS MITCHELL,

Secretary.

December 1905.

ZOOLOGICAL SOCIETY OF LONDON,
3, HANOVER SQUARE, W.

LIST OF VOLUMES OF THE 'ZOOLOGICAL RECORD.'

The Record of Zoological Literature, 1864—1868, Vols. I—V. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.Z.S., &c. Price 10s. each Volume. Net.

The Record of Zoological Literature, 1869, Volume Sixth. Edited by ALBERT C. L. G. GÜNTHER, M.A., M.D., Ph.D., F.R.S., F.Z.S., &c. London, 1870. Price 30s.

The Zoological Record for 1870—1872, Vols. VII—IX. Edited by ALFRED NEWTON, M.A., F.R.S., F.L.S., V.P.Z.S., &c. Price 10s. each Volume. Net.

The Zoological Record for 1873—1883, Vols. X—XX. Edited by EDWARD CALDWELL RYE, F.Z.S., M.E.S. Price 10s. each Volume. Net.

The Zoological Record for 1884, 1885, Vols. XXI, XXII. Edited by F. JEFFREY BELL, M.A. Price 10s. each Volume. Net.

The Zoological Record for 1886—1890, Vols. XXIII—XXVII. Edited by FRANK E. BEDDARD, M.A., F.Z.S. Price 10s. each Volume. Net.

The Zoological Record for 1891—1899, Vols. XXVIII—XXXVI. Edited by D. SHARP, M.A., F.R.S., F.Z.S., &c. Price 10s. each Volume. Net.

The Zoological Record, Volume the Thirty-seventh; being Records of Zoological Literature relating chiefly to the year 1900. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. A. Herdman, E. R. Sykes, E. A. Smith, G. C. Crick, A. W. Brown, D. Sharp, F. A. Bather, A. Willey, and E. A. Minchin. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1901. Price 30s.

The Zoological Record, Volume the Thirty-eighth; being Records of Zoological Literature relating chiefly to the year 1901. By J. A. Thomson, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, Alice L. Embleton, E. R. Sykes, E. A. Smith, S. Pace, Albert Brown, D. Sharp, F. A. Bather and E. A. Minchin. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1902. Price 30s.

The Zoological Record, Volume the Thirty-ninth; being Records of Zoological Literature relating chiefly to the year 1902. By D. Sharp, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. T. Calman, E. R. Sykes, E. A. Smith, Alice L. Embleton, F. A. Bather, E. A. Minchin and H. M. Woodcock. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1903. Price 30s.

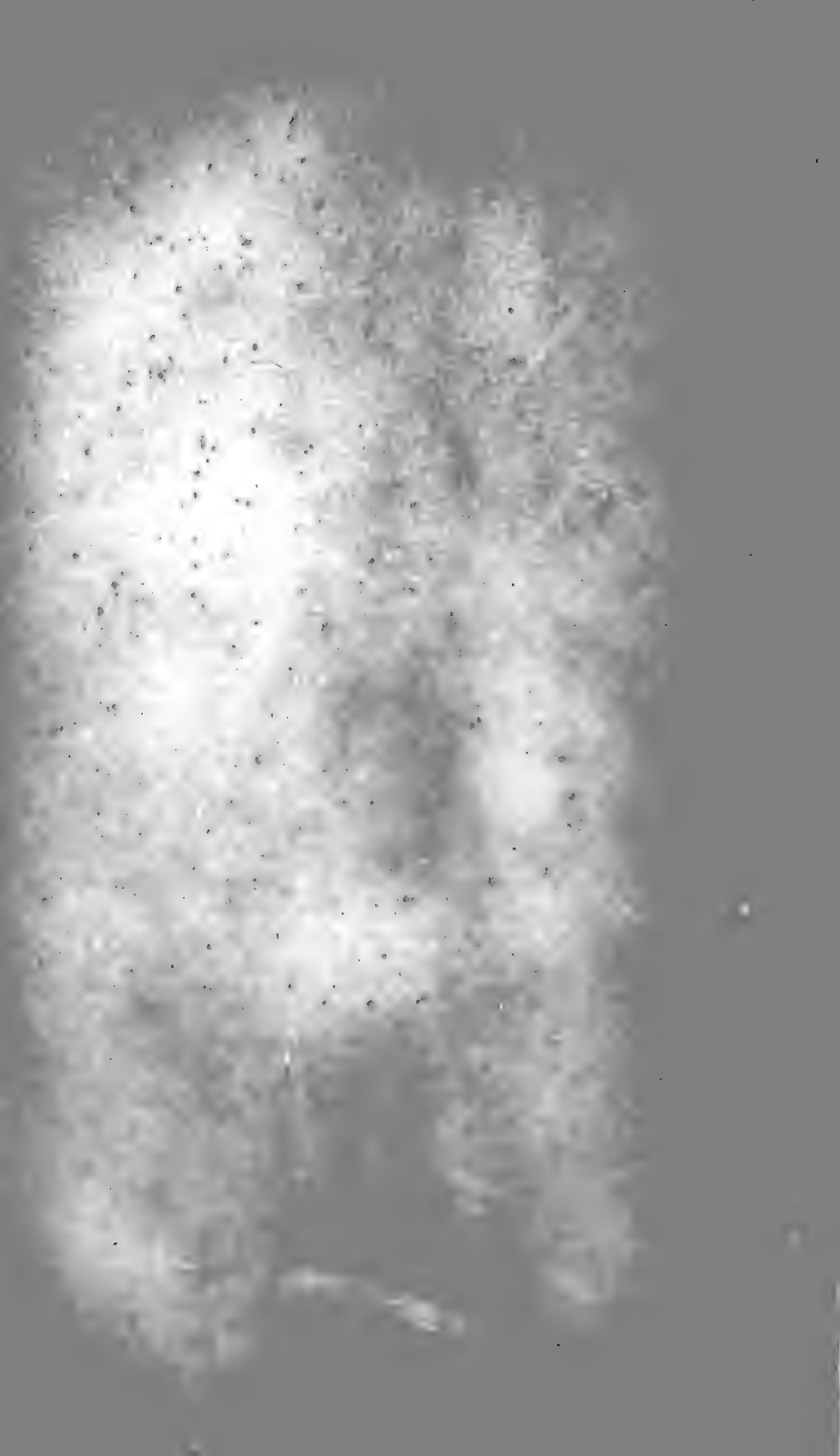
The Zoological Record, Volume the Fortieth; being Records of Zoological Literature relating chiefly to the year 1903. By D. Sharp, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. T. Calman, E. R. Sykes, E. A. Smith, Alice L. Embleton, F. A. Bather, E. A. Minchin, and H. M. Woodcock. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1904. Price 30s.

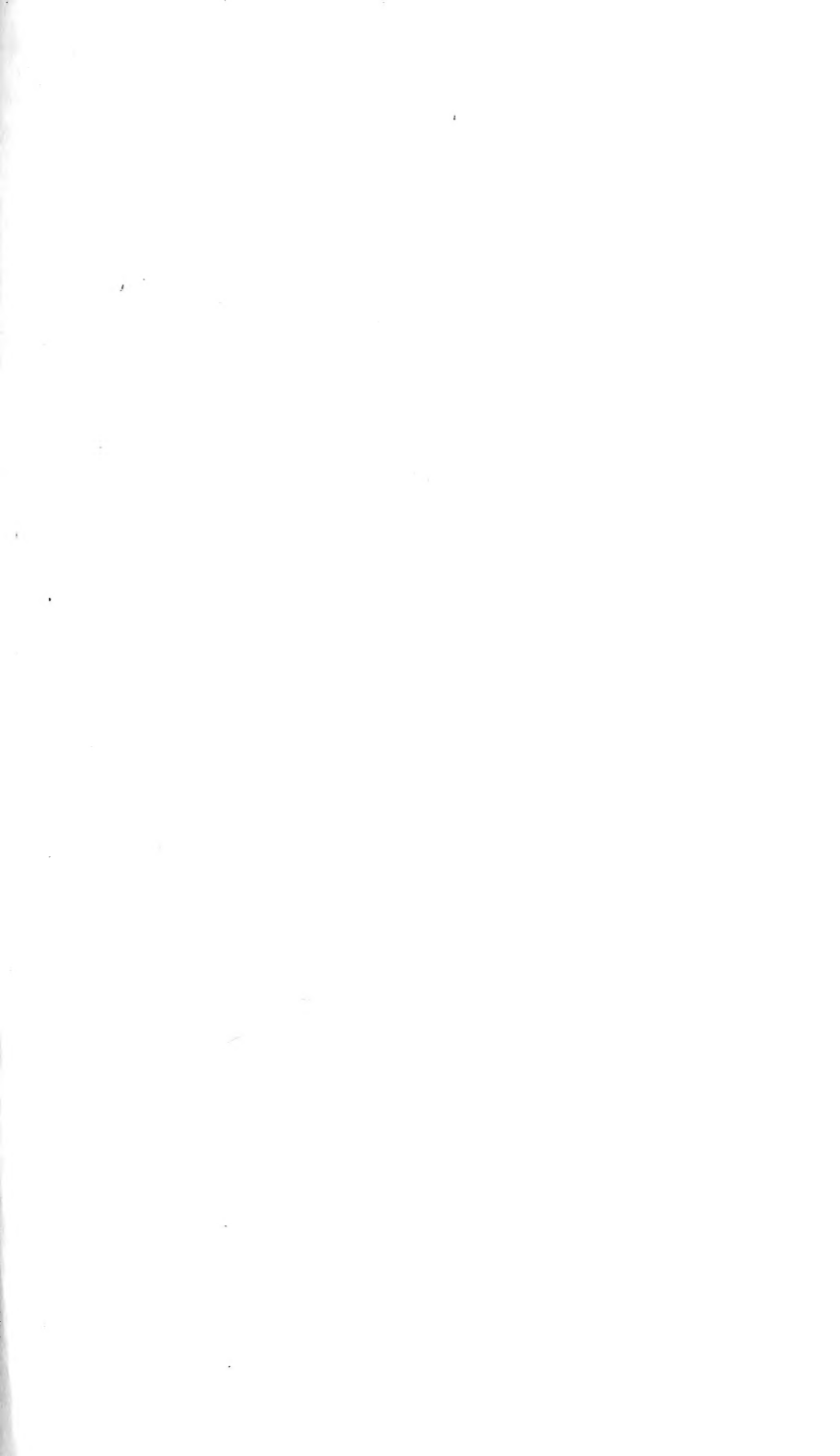
The Zoological Record, Volume the Forty-first; being Records of Zoological Literature relating chiefly to the year 1904. By D. Sharp, R. Lydekker, R. Bowdler Sharpe, G. A. Boulenger, W. T. Calman, E. R. Sykes, E. A. Smith, Alice L. Embleton, F. Silvestri, E. Simon, F. A. Bather, W. Woodland, and H. M. Woodcock. Edited (for the Zoological Society of London) by DAVID SHARP, M.A., F.R.S., F.Z.S., etc. London, 1905. Price 40s.

Index Zoologicus. An alphabetical list of names of genera and subgenera proposed for use in Zoology, as recorded in the Zoological Record 1880—1900; together with other names not included in the "Nomenclator zoologicus" of S. H. Scudder. Compiled (for the Zoological Society of London) by CHARLES OWEN WATERHOUSE and edited by DAVID SHARP, Editor of the Zoological Record. London, 1902. Price to Fellows, 18s.; price to the public, 20s.

These publications may be obtained at the SOCIETY'S OFFICE (3 Hanover Square, W.).







UNIVERSITY OF ILLINOIS-URBANA

A 590Z75

C001

ZOOLOGICAL RECORDS LOND

41 1904



3 0112 009824308